

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
O.A.NO.694/2023**

IN THE MATTER OF

News Item titled "UN PREDICTS GROUNDWATER LEVEL IN INDIA WILL REDUCE TO LOW BY 2025" appearing in Hindustan Times dated 26.10.2023

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Respondent No.1

[Signature]
23.4.25

विनोद कुमार धौंडियाल / Vinod Kumar Dhaundiyaal
प्रशासक / Administrator
केन्द्रीय भूमि जल प्राधिकरण / Central Ground Water Authority
जल संसाधन, नदी विकास एवं गंगा संरक्षण
Deptt of Water Resources, River Development & Ganga Rejuvenation
जल शक्ति विभाग / Ministry of Jal Shakti
भारत सरकार / Government of India

New Delhi

Dated - 23.04.2025

[Signature]
**GIGI.C.GEORGE
ADVOCATE**

**STANDING COUNSEL (UI)
NATIONAL GREEN TRIBUNAL
Email: gigigeorge.adv42@yahoo.in
M-9810625315**

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI
O.A.NO.694/2023**

IN THE MATTER OF

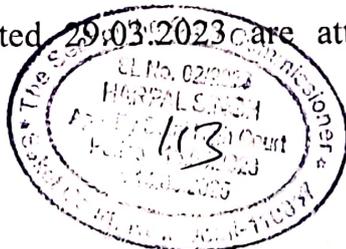
News Item titled "UN PREDICTS GROUNDWATER LEVEL IN INDIA WILL REDUCE TO LOW BY 2025" appearing in Hindustan Times dated 26.10.2023

REPLY ON BEHALF OF CENTRAL GROUND WATER AUTHORITY

I, Vinod Kumar Dhaundiya, aged about 49 years, working administrator, at CGWA, Govt. of India, Ministry of Jal Shakti, Water Resources, River Development and Ganga Rejuvenation, having office at 18/11, Jamnagar House, Man Singh Road do hereby solemnly affirm and state on oath as under on behalf of **Respondent No.1 (CGWA)** hereinafter referred to as Answering Respondent.

1. That I am in my aforementioned official capacity, well conversant with the facts and circumstances of the present case on the basis of the documents and records available in the department. As such, I am competent and authorized to swear this counter affidavit on behalf of answering respondent.
2. That I have read and understood the contents of the present affidavit and states that the contents mentioned in the Affidavit are true and correct to the best of my knowledge.
3. That Hon'ble Tribunal vide order dt.13.01.2025 directed CGWA to place on record the relevant Notification and material for granting NOC for the extraction of groundwater in the stressed area.

In pursuance to the direction of the Hon'ble Tribunal, Ministry of Jal Shakti, Govt. of India, notified guidelines dated 24.09.2020 followed by amendment dated 29.03.2023 are attached as **Annexure-I** and Standard Operating



Procedure (Version 9.1) for implementation of MoJS guidelines and amendment thereof is attached as Annexure-II. It may be mentioned that the these guidelines/ SOP guide the processing of NOC applications as per category of assessment unit in Ground Water Resource Estimation (GWRE) report. The category of assessment unit, namely 'Safe', 'Semi-critical', 'Critical' or 'Over-exploited' is sum total of prevailing ground water situation in that particular assessment unit.

- 4. That the present report may kindly be taken on record and considered, and that the Hon'ble Tribunal may be pleased to pass appropriate orders and directions as deemed fit and proper in light of the facts and circumstances of the present case.

(Signature)
 23.4.25
Deponent Vinod Kumar Dhaundiyaal
 प्रशासक / Administrator
 केन्द्रीय गृमि जल प्राधिकरण / Central Ground Water Authority
 जल संसाधन, नदी विकास एवं गंगा संरक्षण
 Deptl of Water Resources, River Development & Ganga Rejuvenation
 जल शक्ति मंत्रालय / Ministry of Jal Shakti
 भारत सरकार / Government of India

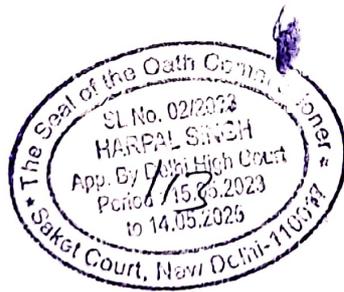
Verification

I identify the deponent who has signed this affidavit in my presence

Verified at New Delhi on 23rd 24 April, 2025 that the contents of the above affidavit is true and correct to the best of my knowledge and belief, nothing material has been concealed there from.

DEPONENT
 Shri. *(Signature)*
 S/o Shri. *(Signature)*
 R/o *(Signature)*
 I solemnly affirmed before me at New Delhi on 23.4.25 that the contents of the above affidavit has been read over and explained to him in full and he has agreed to sign the same.

(Signature)
Deponent Vinod Kumar Dhaundiyaal
 प्रशासक / Administrator
 केन्द्रीय गृमि जल प्राधिकरण / Central Ground Water Authority
 जल संसाधन, नदी विकास एवं गंगा संरक्षण
 Deptl of Water Resources, River Development & Ganga Rejuvenation
 जल शक्ति मंत्रालय / Ministry of Jal Shakti
 भारत सरकार / Government of India



Filed by *(Signature)*
Oath Commissioner, Delhi

Through

New Delhi

Dated 23.4.2025

24 APR 2025

(Signature)
GIGI.C. GEORGE ADVOCATE
STANDING COUNSEL (UOI)
NATIONAL GREEN TRIBUNAL
 Email: gigigeorge.adv42@yahoo.in
 M-9810625315



भारत का राजपत्र The Gazette of India

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भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

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नई दिल्ली, बृहस्पतिवार, सितम्बर 24, 2020/आश्विन 2, 1942

No. 2941]

NEW DELHI, THURSDAY, SEPTEMBER 24, 2020/ASVINA 2, 1942

जल संसाधन, नदी विकास और गंगा संरक्षण विभाग

(केंद्रीय भूमि जल प्राधिकरण)

अधिसूचना

नई दिल्ली, 24 सितम्बर, 2020

का.आ. 3289(अ).—जबकि, 1985 की सिविल रिट याचिका 4677, एमसी. मेहता बनाम भारत संघ में पारित दिनांक 10 दिसंबर, 1996 के माननीय उच्चतम न्यायालय के आदेश के माध्यम से इसके दिशा-निर्देशों पर केंद्र सरकार ने भूमि जल प्रबंधन और विकास के विनियमन और नियंत्रण के उद्देश्यों से और कतिपय शक्तियों का प्रयोग करने और उससे संबंधित कतिपय कार्यों को करने के लिए पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 5 के तहत शक्तियों का प्रयोग करने के लिए दिनांक 14 जनवरी, 1997 की अधिसूचना सं.का.आ. 38(अ) के माध्यम से केंद्रीय भूमि जल प्राधिकरण (इसके बाद इसे "प्राधिकरण" के रूप में कहा गया है) गठित किया है।

और जबकि प्राधिकरण उद्योगों, अथवा आधारभूत परियोजनाओं अथवा खनन परियोजनाओं इत्यादि के लिए भूजल निष्कर्षण के लिए "अनापत्ति प्रमाणपत्र" जारी करके भूजल विकास और प्रबंधन को विनियमित करता रहा है और बाइस राज्यों और दो संबंधित संघ शासित क्षेत्रों में, जहां पर भूजल विकास संबंधित राज्य सरकारों तथा संघ शासित प्रशासनों द्वारा विनियमित नहीं किया जा रहा है, समय-समय पर इस संबंध में इसने दिशा-निर्देश तैयार किये थे।

और जबकि, कुछ राज्य सरकारों अथवा, संघ शासित क्षेत्रों ने विधान अधिनियमित किए हैं और भूजल विकास और प्रबंधन को विनियमित करनेकेलिए विनियामक दिशा-निर्देश अथवा आदेश जारी किए हैं।

और जबकि, माननीय राष्ट्रीय हरित अधिकरण, नई दिल्ली ने 2014 की ओ.ए. सं. 204/205/206 में दिनांक 15 अप्रैल 2015 के आदेश के माध्यम से प्राधिकरण को निर्देश जारी किए हैं कि वह सुनिश्चित करें कि ऐसे किसी भी व्यक्ति जो भूजल निष्कर्षण के लिए ट्यूबवेल, अथवा कोई अन्य साधन संचालित कर रहा है, को प्राधिकरण से अनुमति प्राप्त करनी

होगी और वह इसे लागू कानून की शर्त पर संचालित करेगा चाहे ऐसी यूनिट मौजूद यूनिट हो अथवा यूनिट को अभी स्थापित करना हो;

और जबकि, उक्त माननीय अधिकरण ने 2014 की ओ. ए. सं. 34 और 37 में दिनांक 09 जुलाई 2015 को अपने आदेश के माध्यम से सभी औद्योगिक इकाइयों को, जो सामान्य बहिर्घाव परिशोधन संयंत्र (सीईटीपीएस) की सदस्य हैं, कानून के अनुसार “अनापत्ति प्रमाणपत्र” प्राप्त करने के लिए राज्य प्रदूषण नियंत्रण बोर्ड के माध्यम से प्राधिकरण से संपर्क करने के निर्देश दिए हैं;

और जबकि, माननीय अधिकरण ने 2014 के ओ.ए. सं. 200 में दिनांक 13 जुलाई, 2017 के आदेश के माध्यम से निर्देश दिए कि प्रत्येक उद्योग को ऐसे जल की निकासी के लिए भुगतान करने के निर्देश दिये जाने चाहियें और वह भी, कि यह ऐसी जल निकासी की अनुमति देने के आदेश में बताई गई शर्तों के अनुरूप हो।

और जबकि, उक्त माननीय अधिकरण ने क्रमशः 2015 की ओ.ए. सं. 176 और 2012 की 59 में दिनांक 28 अगस्त 2018 के अपने आदेश में जल संसाधन, नदी विकास और गंगा संरक्षण मंत्रालय को भूजल संसाधनों के संरक्षण के लिए प्रभावी कदम सुनिश्चित करने के लिए मौजूदा तंत्र की आगे समीक्षा करने के निर्देश दिए;

और जबकि, माननीय राष्ट्रीय हरित अधिकरण के निर्देशों और पर्यावरण (संरक्षण) अधिनियम, 1986 की धारा 3 और धारा 5 की उप धारा (3) के तहत प्रदत्त शक्तियों के अनुसरण में प्राधिकरण ने भूजल संसाधनों के बचाव की दृष्टि से 11 अक्टूबर, 2017 को “अनापत्ति प्रमाणपत्र” प्रदान करने के लिए प्रारूप दिशा-निर्देश परिचालित किये जिसमें सभी स्टेकहोल्डरों से टिप्पणियां और सुझाव मांगे गए।

और जबकि, उक्त प्रारूप दिशा-निर्देश के प्रत्युत्तर में प्राप्त सभी आपत्तियों और सुझावों पर केंद्र सरकार द्वारा विधिवत रूप से विचार किया गया है, प्राधिकरण दिनांक 12 दिसंबर, 2018 की अधिसूचना सं.का.आ. 6140 (अ) के माध्यम से देश में भूजल के अति-दोहन को विनियमित करने और भूजल संसाधनों के संरक्षण के दिशा-निर्देश अधिसूचित किए;

और जबकि, उक्त माननीय अधिकरण ने 2015 की ओ. ए. सं. 176 में दिनांक 03 जनवरी, 2019 के आदेश के माध्यम से निर्देश दिए थे कि दिनांक 12 दिसंबर, 2018 की उपर्युक्त अधिसूचना को लागू नहीं किया जा सकता, क्योंकि यह स्थाई नहीं है यदि इसकी “पूर्वोपाय सिद्धांत सतत विकास और अंतर-उत्पादन इक्विटी सिद्धांतों” पर जांच की जाती है तो यह स्थाई नहीं है और यदि यह कार्यान्वित की जाती है, तो भूजल में बहुत तेजी से गिरावट आएगी और जल निकाय क्षतिग्रस्त हो जाएंगे और भारत के संविधान के अनुच्छेद 21 के तहत जीवन के मौलिक अधिकार का हनन होगा;

और जबकि, माननीय अधिकरण ने दिनांक 11 सितंबर, 2019 के आदेश के माध्यम से भूजल की गिरावट को रोकने के लिये, गैर अधिकृत जल निष्कासन के विरुद्ध सख्त मॉनीटरिंग तंत्र और “अनापत्ति प्रमाणपत्र” शर्तों को पूरा करने, पर्यावरण क्षतिपूर्तिइत्यादि पर चर्चा करने के लिए एक समिति गठित की है और इस पर रिपोर्ट प्रस्तुत करने को कहा गया है;

और जबकि, उक्त समिति ने भूजल निष्कर्षण को विनियमित करने और भूजल संरक्षण के प्रारूप दिशा-निर्देशों सहित रिपोर्ट दिनांक 16 मार्च, 2020 को माननीय अधिकरण में प्रस्तुत कर दी है;

और जबकि, उक्त माननीय अधिकरण ने दिनांक 20 जुलाई, 2020 के अपने आदेश के माध्यम से प्राधिकरण द्वारा वाणिज्यिक स्थापनाओं को “अनापत्ति प्रमाणपत्र” जारी करते समय सतत भूजल प्रबंधन के लिए कतिपय बिन्दुओं के साथ अनुकरण करने का निर्देश दिया है;

अब इसलिए माननीय राष्ट्रीय हरित अधिकरण के दिशा-निर्देशों और पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 की 29) की धारा 5 के साथ पठित धारा 3 की उपधारा (3) द्वारा प्रदत्त शक्तियों के अनुकरण में जल संसाधन, नदी विकास और गंगा संरक्षण विभाग एतद द्वारा नीचे दी गई अधिसूची के अनुसार इस मंत्रालय की अधिसूचना सं.का.आ. 6140 (अ), दिनांक 12 दिसंबर, 2018 का अधिकरण करके देश में भूजल निकासी को विनियमित और नियंत्रित करने के दिशा-निर्देश अधिसूचित करता है।

अनुसूची

भारत में भूजल निकासी को विनियमित और नियंत्रित करने के दिशा-निर्देश
(तत्काल प्रभाव से)

इंडेक्स

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[फा. सं. सीजीडब्ल्यूए-21/4/2020- सीजीडब्ल्यूए]

आशीष कुमार, निदेशक

अनुलग्नक

- अनुलग्नक I: पेय और घरेलू उपयोग के लिए जल की आवश्यकता का अनुमान।
- अनुलग्नक II: पीजोमीटर के निर्माण और भूजल स्तरों और गुणवत्ता की मॉनिटरिंग के लिए दिशा-निर्देश।
- अनुलग्नक III: प्रदूषित करने वाले उद्योगों/परियोजनाओं के संयंत्र क्षेत्रों में प्रदूषण निवारण को सुनिश्चित करने के लिए अपनाए जाने वाले उपाय।
- अनुलग्नक IV: उद्योगों के लिए अनापत्ति प्रमाण पत्र प्राप्त करने हेतु जल-भूवैज्ञानिक रिपोर्ट की रूपरेखा।
- अनुलग्नक V: भूजल स्थिति (खनन परियोजनाओं के लिए) संबंधी रिपोर्ट का फार्मेट।
- अनुलग्नक VI: आधारभूत परियोजनाओं की सांकेतिक सूची।
- अनुलग्नक VII: परित्यक्त बोरवेलों और ट्यूबवेलों में बच्चों के गिर जाने की गंभीर दुर्घटनाओं को रोकने के उपायों के संबंध में 2009 की सिविल रिट याचिका 36 में उच्चतम न्यायालय के आदेश।
- अनुलग्नक VIII: उन राज्यों/संघ राज्य क्षेत्रों की सूची, जहां भूजल की निकासी सीजीडब्ल्यूए द्वारा विनियमित की जा रही है।
- अनुलग्नक IX: प्रयुक्त तकनीकी शर्तों की शब्दावली
- अनुलग्नक X : उद्योगों द्वारा वार्षिक जल लेखा परीक्षा।

भारत में भूजल निकासी को विनियमित और नियंत्रित करने के दिशा-निर्देश**प्रस्तावना और पृष्ठभूमि सूचना:**

एमसी मेहता बनाम भारत संघ की 1985 की सिविल रिट याचिका सं. 4677 में जारी दिनांक 10 दिसंबर, 1986 के माननीय उच्चतम न्यायालय के आदेश के माध्यम से इसके दिशा-निर्देशों पर केंद्र सरकार ने भूजल प्रबंधन और विकास के विनियमन और नियंत्रण के उद्देश्यों और उक्त अधिनियम के अनुसार कतिपय शक्तियों का प्रयोग करने और कतिपय कार्य करने के लिए पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 5 के तहत शक्तियों का प्रयोग करने के लिए 14 जनवरी, 1997 की अधिसूचना सं.का.आ. 38 (अ) के माध्यम से केंद्रीय भूमि जल बोर्ड को प्राधिकरण के रूप में गठित किया है।

प्राधिकरण उद्योगों अथवा अवसंरचनात्मक परियोजनाओं अथवा खनन परियोजनाओं इत्यादि के लिए भूजल निकासी के लिए 'अनापत्ति प्रमाणपत्र' जारी करके भूजल विकास और प्रबंधन को विनियमित कर रहा है और 22 राज्यों और 2 यू टी में, जहां राज्य सरकार, संबंधित यू टी प्रशासनों द्वारा भूजल विकास विनियमित नहीं किया जा रहा है, लागू इस संबंध में समय समय पर दिशा-निर्देश तैयार किए हैं।

देश में जल के संसाधन के सतत विकास के लिए देश में भूजल निकासी को विनियमित करने और कम भूजल संसाधनों को संरक्षित करने के लिए भूजल निकासी दिशा-निर्देश तैयार किए गए हैं।

ये दिशा-निर्देश राजपत्र अधिसूचना की तारीख से तत्काल प्रभावी होंगे और केंद्रीय भूमि जल प्राधिकरण (सीजीडब्ल्यूए) द्वारा जारी पहले के सभी दिशा-निर्देश के स्थान पर होंगे।

ये दिशा-निर्देश पैन-इंडिया में लागू होंगे। राज्य/संघ राज्य क्षेत्र (जो भूजल निकासी को विनियमित नहीं कर रहे हैं) में भूजल निकासी केंद्रीय भूमि जल प्राधिकरण द्वारा विनियमित की जानी जारी रखी जाएगी।

इसके अलावा, जिन राज्यों/संघ राज्य क्षेत्रों के अपने भूजल निकासी दिशा-निर्देश हैं, जो सीजीडब्ल्यूए के अनुरूप नहीं हैं, वहां सीजीडब्ल्यूए के दिशा-निर्देशों के प्रावधान लागू होंगे। तथापि यदि ऐसे राज्यों/संघ राज्य क्षेत्रों द्वारा अनुसरण किए जाने वाले दिशा-निर्देशों में सीजीडब्ल्यूए के दिशा-निर्देशों से अधिक कठोर प्रावधान हैं, तो वहां सीजीडब्ल्यूए के दिशा-निर्देशों में निहित प्रावधानों के अलावा राज्य/संघ राज्य क्षेत्र के प्राधिकरणों द्वारा उन प्रावधानों को भी लागू किया जाएगा। राज्य स्थानीय जल-भूवैज्ञानिक स्थितियों के आधार पर अतिरिक्त शर्तों/मानदंडों का सुझाव देने के लिए स्वतंत्र हो सकते हैं, जिसकी स्वीकार करने से पहले सीजीडब्ल्यूए/जल शक्ति मंत्रालय, भारत सरकार द्वारा समीक्षा की जाएगी।

सभी नए/ मौजूद तथा विस्तार माँगने वाले उद्योगों, अवसंरचनात्मक परियोजनाओं और खनन परियोजनाओं को, जब तक कि पैरा 1.0 के अंतर्गत इसे विशिष्ट रूप से छूट प्राप्त न हो, वेब आधारित एप्लीकेशन प्रणाली के माध्यम से अनापत्ति प्रमाण पत्र (एनओसी) प्राप्त करना अपेक्षित होगा।

जल प्रबंधन योजनाएं अतिदोहित यूनितों के साथ शुरू करके सभी अतिदोहित, गंभीर और अर्ध-गंभीर मूल्यांकन यूनितों के लिए सभी राज्य भूजल प्राधिकरणों/संगठनों द्वारा तैयार की जाएंगी। जल प्रबंधन योजनाओं की समीक्षा की जाएगी और यह आवधिक रूप से अद्यतन की जाएंगी। इस संबंध में तैयार जल प्रबंधन योजनाएं जल उपलब्धता और कमी के आंकड़े तथा नीति केन्द्रीय भूमि जल प्राधिकरण/राज्य भूमि जल प्राधिकरण की वेबसाइटों पर दर्शाई जाएगी।

1.0 एनओसी प्राप्त करने से छूट:

उपभोक्ताओं की निम्नलिखित श्रेणियों को भूजल निकासी के लिए एनओसी प्राप्त करने से छूट दी जाएगी:

- (i) पेयजल और घरेलू उपयोग के लिए ग्रामीण और शहरी दोनों क्षेत्रों में वैयक्तिक घरेलू उपभोक्ता।
- (ii) ग्रामीण पेयजल आपूर्ति स्कीमें।
- (iii) ग्रामीण और शहरी दोनों क्षेत्रों में सशस्त्र बलों के प्रतिष्ठान और केन्द्रीय सशस्त्र पुलिस बल।
- (iv) कृषि कार्यकलाप।
- (v) 10 सी यू एम / दिन से कम भूजल का आहरण करने वाले माइक्रो और स्माल उद्योग।

1.1 ड्रिलिंग रिगों का पंजीकरण

राज्य/संघ राज्य सरकारें अपने क्षेत्राधिकार में संचालित ड्रिलिंग रिगों के पंजीकरण और उनके द्वारा ड्रिल किए गए कुओं के डेटाबेस के रख-रखाव के लिए जिम्मेदार होंगी। सीजीडब्ल्यूए को आंकड़े उपलब्ध कराने के लिए सीजीडब्ल्यूए पोर्टल में उपयुक्त लिंक दिए जाएंगे।

2.0 शहरी क्षेत्रों में रेजीडेंसियल अपार्टमेंट/ग्रुप हाउसिंग सोसाइटी/सरकारी जलापूर्ति एजेंसियों के लिए पेय और घरेलू प्रयोग के लिए जल

भूजल निकासी के लिए अनापत्ति प्रमाण पत्र (एनओसी) देने के लिए परियोजना प्रस्तावक को सीजीडब्ल्यूए वेबसाइट में उपलब्ध उपयुक्त फॉर्मेट में सीजीडब्ल्यूए द्वारा जारी दिशा-निर्देशों के अनुसार ब्यौरा भेजना होता है। नए/मौजूदा कुओं के लिए एनओसी केवल ऐसे मामलों में ही दिया जाता है, जहां स्थानीय सरकारी जलापूर्ति एजेंसी उस क्षेत्र में अपेक्षित मात्रा में जल की आपूर्ति करने में सक्षम नहीं है।

एनओसी तभी दिया जाएगा बशर्ते कि निम्नलिखित विशिष्ट शर्तें पूरी हों:

- i) सीवेज परिशोधन संयंत्रों का संस्थापन सभी रेजीडेंसियल अपार्टमेंट/ग्रुप हाउसिंग सोसाइटी के लिए अनिवार्य होगा जहां भूजल, की आवश्यकता 20 घनमीटर/दिन से अधिक है। एसटीपी का जल शौचालय फ्लशिंग, कार धोने, बागवानी इत्यादि के लिए उपयोग किया जाएगा।
- ii) यह एनओसी जारी होने की तारीख से 5 वर्षों की अवधि अथवा परियोजना क्षेत्र के लिए स्थानीय सरकार द्वारा जलापूर्ति करने के समय तक, जो भी पहले हो, वैध होगा। यदि परियोजना प्रस्तावक एनओसी की वैधता के दौरान संबंधित स्थानीय सरकार से जलापूर्ति प्राप्त करता है, तो परियोजना प्रस्तावक को सीजीडब्ल्यूए को जलापूर्ति की उपलब्धता के संबंध में सूचित करना होगा और प्राधिकरण द्वारा एनओसी रद्द कर दिया जाएगा। अन्य मामलों में परियोजना प्रस्तावक एनओसी की समाप्ति के 90 दिनों से पहले एनओसी के नवीकरण के लिए आवेदन करेगा।
- iii) प्रस्तावक को तालिका 6.1 में उल्लिखित दरों के अनुसार जल निकासी के प्रस्तावित भूजल के लिए भूजल निकासी प्रभार का भुगतान करना होगा।

आवेदन के साथ प्रस्तुत किए जाने वाले दस्तावेज

- क) फ्लाशिंग इत्यादि के लिए पुनः चक्रित/परिशोधित जल के पुनः प्रयोग को ध्यान में रखते हुए राष्ट्रीय भवन कोड, 2016 (अनुलग्नक-1) के अनुसार अपेक्षित जल के ब्यौरे।

- ख) आवेदक द्वारा 10/- रु. के गैर-न्यायिक स्टैप पर हलफनामा जिसमें पेय/घरेलू उपयोग के लिए 10 घनमीटर/दिन तक उपभोक्ता की भूजल की आवश्यकता होने की स्थिति में लोक जलापूर्ति की गैर/अपर्याप्त उपलब्धता की पुष्टि की जाये।
- ग) पेय/घरेलू उपयोग के लिए 10 घनमीटर/दिन से अधिक भूजल आवश्यकता के मामलों में स्थानीय सरकारी जलापूर्ति एजेंसियों को एनओसी के लिए आवेदन करते समय कार्यान्वित की जाने वाली स्कीम/प्रस्तावित परियोजना के लिए सरकारी अनुमोदन की प्रति प्रस्तुत करनी होगी।
- घ) किसी भी नेशनल अक्रेडिशन बोर्ड फौर टेस्टिंग एंड कैलिब्रेशन लैबोरेटरी (एनएबीएल) से प्रत्यायित प्रयोगशाला अथवा सरकार से अनुमोदित प्रयोगशाला से (एनओसी के लिए आवेदन कर रही मौजूदा परियोजनाओं के मामले में) मौजूदा बोरवेल/ट्यूबवेल के भूजल गुणवत्ता आंकड़े।
- ड.) आवास और शहरी कार्य मंत्रालय द्वारा जारी मॉडल भवन उपनियमों के अनुसार क्षेत्र के भीतर वर्ष जल संचयन/पुनर्भरण के लिए प्रस्ताव।

3.0 कृषि क्षेत्र

कृषि क्षेत्र भारतीय अर्थव्यवस्था की रीढ़ की हड्डी है। वर्ष 2013-14 की लघु सिंचाई गणना के अनुसार 87.86 प्रतिशत कुएं 4 हेक्टेयर तक की भूमि वाले सीमान्त, लघु और अर्ध-मध्यम किसानों के हैं। लगभग 9.18 प्रतिशत कुएं 4-10 हेक्टेयर की भूमि वाले मध्यम किसानों के हैं और 2.96 प्रतिशत कुएं 10 हेक्टेयर से अधिक भूमि वाले किसानों के हैं।

भूजल निकासी संरचनाओं की संख्या पर विचार करते हुए 'कमांड एंड कंट्रोल' नीति के माध्यम से कृषि क्षेत्र में भूजल का विनियमन करना कठिन कार्य होगा। इसलिए सतत भूजल प्रबंधन के लिए भागीदारी दृष्टिकोण अधिक सार्थक होगा।

राज्यों/संघ राज्य क्षेत्रों को किसानों के लिए मुफ्त/रियायती विद्युत नीति की समीक्षा करने, उपयुक्त विद्युत मूल्य नीति तैयार करने और भूजल पर अत्यधिक निर्भरता को कम करने के लिए फसलों की अदला-बदली/विविधीकरण/अन्य पहलों के प्रति कार्य करने की सलाह दी जाती है।

कृषि क्षेत्र को भूजल निकासी के लिए एनओसी प्राप्त करने से छूट दी जाएगी।

4.0 वाणिज्यिक प्रयोग

नीति दिशा-निर्देशों के अनुरूप के अतिरिक्त अतिदोहित मूल्यांकन क्षेत्रों में किसी भी नये वृहद उद्योग को एनओसी नहीं दिया जाएगा।

वाणिज्यिक प्रयोग के लिए एनओसी देने हेतु आवेदन पर विचार करते समय भूजल संसाधनों की उपलब्धता पर पर्याप्त ध्यान दिया जाएगा।

भूजल निकालने वाले वाणिज्यिक उद्यमों को संदर्भित धाराओं में उल्लिखित जल प्रयोग के लेखा सहित वार्षिक जल लेखा परीक्षा रिपोर्ट ऑनलाइन प्रस्तुत करनी होगी। सीजीडब्ल्यूए/राज्य भूजल प्राधिकरण (एसजीडब्ल्यूए) सभी ऐसी लेखा परीक्षा रिपोर्ट ऑनलाइन प्रकाशित करेगा।

सीजीडब्ल्यूए/एसजीडब्ल्यूए आवधिक रूप से एनओसी के अनुपालन की जांच करने के लिए स्वायत्त एजेंसियों को कार्य पर लगाएगा।

4.1 औद्योगिक प्रयोग

अतिदोहित मूल्यांकन इकाइयों में सूक्ष्म, लघु और मध्यम उद्यमों (एमएसएमई) की श्रेणी में आने वालों के अलावा किसी भी नए उद्योग को भूजल निकासी के लिए एनओसी नहीं दिया जाएगा। तथापि कार्यबल के लिए पेयजल/घरेलू प्रयोग, इन नए उद्योगों द्वारा ग्रीनबेल्ट उपयोग के लिए एनओसी की अनुमति होगी। अतिदोहित क्षेत्रों में नए सीलबंद जल उद्योगों को, चाहे वे एमएसएमई श्रेणी में आते हों, एनओसी नहीं दिया जाएगा।

उद्योगों द्वारा भूजल निकासी के लिए एनओसी दिया जाएगा बशर्ते कि निम्नलिखित शर्तें पूरी हों:-

- I. ऐसे मामलों में ही एनओसी प्रदान किया जाएगा, जहां स्थानीय सरकारी जलापूर्ति एजेंसियां जल की अपेक्षित मात्रा की आपूर्ति करने में सक्षम नहीं है।

- II. सभी उद्योगों को अद्यतन जल दक्ष प्रौद्योगिकी को अपनाना अपेक्षित होगा, ताकि भूजल संसाधन पर निर्भरता कम की जा सके।
- III. 100 घनमीटर/दिन से अधिक भूजल की निकासी वाले सभी उद्योगों को कंफेडरेशन ऑफ इंडियन इंडस्ट्रीज (सीआईआई)/फेडरेशन इंडियन चेम्बर ऑफ कॉमर्स एंड इंडस्ट्रीज (एफआईसीसीआई)/नेशनल प्रोडक्टिविटी काउंसिल (एनपीसी) को प्रमाणित लेखा परीक्षकों के माध्यम से वार्षिक जल लेखा परीक्षा करवाना और इसके पूरे होने के तीन माह के भीतर लेखा परीक्षा रिपोर्ट सीजीडब्ल्यूए को प्रस्तुत करना अपेक्षित होगा। ऐसे सभी उद्योगों को उपयुक्त साधनों के माध्यम से अगले तीन वर्षों तक अपने भूजल प्रयोग को कम से कम 20 प्रतिशत कम करना अपेक्षित होगा।
- IV. अपने क्षेत्र के भीतर पर्यवेक्षण कुएं, पीजोमीटर का निर्माण और धारा 15 में यथा उल्लिखित उपयुक्त जल स्तर मॉनीटरिंग तंत्र की संस्थापना करना 10 घनमीटर/दिन से अधिक की भूजल निकासी करने का प्रस्ताव करने वाले उद्योगों के लिए अनिवार्य होगा। जल स्तर की मॉनीटरिंग परियोजना प्रस्तावक द्वारा की जाएगी। बोरवेल/प्रोडक्शन वेल से कम से कम 15 मीटर की दूरी पर पीजोमीटर (अन्वेषण कुएं) का निर्माण किया जाएगा। पीजोमीटर में गहराई और चिह्नित जलभृत क्षेत्र पम्पिंग कुएं/कुओं के समान ही होंगे। पीजोमीटर के डिजाइन और निर्माण के विस्तृत दिशा-निर्देश अनुलग्नक-II में दिए गए हैं। मासिक जल स्तर आंकड़े वेब पोर्टल के माध्यम से सीजीडब्ल्यूए को प्रस्तुत किए जाएंगे।
- V. प्रस्तावक को परियोजना क्षेत्र में छतका वर्षाजल संचयन/पुनर्भरण करना अपेक्षित है। भूजल को प्रदूषित करने की संभावना वाले उद्योगों (रसायन, फार्मास्यूटिकल, ड्राई, पिगमेंट, पेंट, वस्त्र, टैनिंग, पेस्टिसाइड/कीटनाशक, उर्वरक, स्लॉटर हाउस, विस्फोटक इत्यादि) को उद्योग में प्रयोग करने के लिए सतह संग्रह टैंकों में वर्षाजल संचय करना होगा।
- VI. जलभृत सिस्टम में शोधित/गैर शोधित अपशिष्ट जल डालने की सख्त मनाही है।
- VII. भूजल प्रदूषण के सम्भावित कारक उद्योगों जैसे टैनिंग, स्लॉटर हाउस, ड्राई, रसायन/पेट्रोकेमिकल, कोयला वॉशरीज, अन्य खतरनाक इकाइयों आदि को (सी पी सी बी लिस्ट के अनुसार) भूजल प्रदूषण के निवारणको सुनिश्चित करने के लिये आवश्यक वेल हेड संरक्षण उपायों को करने की आवश्यकता है (अनुलग्नक-III)।
- VIII. सुरक्षित, अर्ध गंभीर और गंभीर आकलन यूनिटों में भूजल की निकासी करने वाले सभी उद्योगों को तालिका 5.2 क और 5.3 क के अनुसार लागू भूजल निकासी प्रभार का भुगतान करना अपेक्षित होगा।
- IX. अतिदोहित आकलन यूनिटों में भूजल निकासी करने वाले सभी मौजूदा उद्योगों को तालिका 5.2 ख और 5.3 ख के अनुसार लागू भूजल निकासी प्रभारों का भुगतान करना होगा।

आवेदन के साथ प्रस्तुत किए जाने वाले दस्तावेज

- (क) ऐसे मामलों में, जहां भूजल 10 घनमीटर/दिन तक अपेक्षित है, स्थानीय सरकारी एजेंसियों से जलापूर्ति उपलब्ध न होने के संबंध में 10/- रु. के गैर न्यायिक स्टैप पेपर पर एक हलफनामा।
- (ख) ऐसे मामलों में, जहां भूजल 10 घनमीटर/दिन से अधिक अपेक्षित है, स्थानीय सरकारी जलापूर्ति एजेंसियों से ताजे जल/शोधित अपशिष्ट जल की आपूर्ति की उपलब्धता न होने/आंशिक रूप से होने का प्रमाणपत्र।
- (ग) किसी भी एनएबएल प्रत्यायित प्रयोगशाला अथवा सरकार से अनुमोदन प्राप्त प्रयोगशाला (एनओसी के लिए आवेदन कर रही मौजूदा परियोजनाओं के मामले में) से मौजूदा बोरवेल/ट्यूबवेल/डगवेल के भूजल गुणवत्ता आंकड़े।
- (घ) एनएबीएल प्रत्यायित प्रयोगशाला/सरकार से अनुमोदन प्राप्त प्रयोगशालाओं से मौजूदा उद्योगों के संबंध में बोरवेल/ट्यूबवेल/डगवेल के जल गुणवत्ता आंकड़े।
- (ङ) आवासन और शहरी कार्य मंत्रालय द्वारा जारी माँडल भवन उप-विधियों के अनुसार क्षेत्र के भीतर वर्षा जल संचयन/पुनर्भरण के लिए प्रस्ताव।

- (च) **प्रभाव आकलन रिपोर्ट:** अतिदोहित, गंभीर और अर्ध गंभीर क्षेत्रों में 100 घनमीटर/दिन से अधिक भूजल निकालने वाली/प्रस्तावित सभी परियोजनाओं के लिए भूजल रिजीम पर मौजूदा/प्रस्तावित भूजल निकासी की प्रभाव आकलन रिपोर्ट और प्रत्यायित सलाहकारों द्वारा तैयार सामाजिक-आर्थिक प्रभाव रिपोर्ट भी प्रस्तुत करना अनिवार्य होगा। इस रिपोर्ट का प्रोफार्मा अनुलग्नक-IV में दिया गया है।

4.2 खनन परियोजनाएं-

सभी मौजूदा और नई खनन परियोजनाओं को भूजल निकासी के लिए एनओसी प्राप्त करना अपेक्षित होगा। चूंकि खनन परियोजनाएं स्थान विशिष्ट होती हैं, इसलिए अतिदोहित आकलन यूनिटों में ऐसी परियोजनाओं के लिए भूजल निकासी हेतु एनओसी देने पर कोई रोक नहीं होगी।

खनन परियोजनाओं के लिए एनओसी प्रदान किया जाएगा, बशर्ते कि निम्नलिखित विशिष्ट शर्तें पूरी हों:

- i) सभी खनन उद्योगों के लिए यह सुनिश्चित करना अनिवार्य होगा कि डी-वाटरिंग कार्यों से उपलब्ध जल उपयुक्त रूप से शोधित है और इसे सिंचाई, डस्ट सप्लेशन, खनन प्रक्रिया, अनुप्रवाह में पुनर्भरण और नदी सिस्टम में ई-फ्लो के रख-रखाव के लिए लाभप्रद रूप से उपयोग किया जाना चाहिए।
- ii) मासिक भूजल स्तर मॉनीटरिंग के लिए क्षेत्र में परिधि के साथ अन्वेषण कुएं (पीजोमीटर) का निर्माण, भूजल की 10 घनमीटर/दिन से अधिक की निकासी करने वाली/इसका प्रस्ताव करने वाली खानों के लिए अनिवार्य होगा। गहराई और पीजोमीटर में चिह्नित जलभृत क्षेत्र पम्पिंग कुएं/कुओं के अनुरूप होगा।
- iii) इसके अतिरिक्त, प्रस्तावक एनओसी में बताए गए मुख्य और प्रतिरोधक क्षेत्रों में अन्वेषण कुओं (पीजोमीटर) की स्थापना करके भूजल स्तरों को मॉनीटरिंग करेगा।
- iv) कोयला और अन्य मूल धातु खनन के मामले में परियोजना प्रस्तावक सतही जल के संदूषण से बचाव के लिए उच्च स्तर की डिवाटरिंग प्रौद्योगिकी (डिवाटरिंग अवरोधक संरचनाओं की श्रृंखला का निर्माण करके) का प्रयोग करेगा।
- v) इसके अलावा सभी खनन यूनिटें एनएबीएल प्रत्यायित/सरकार से अनुमोदन प्राप्त प्रयोगशालाओं के माध्यम से खान रिसाव और खानडिस्चार्जकी जल गुणवत्ता को भी मॉनीटर करेंगी और स्वयं अनुपालान के समय इसे प्रस्तुत किया जायेगा।
- vi) सुरक्षित, अर्ध गंभीर और गंभीर आकलन यूनिटों में भूजल की निकासी करने वाली सभी खनन परियोजनाएं तालिका 5.4 क के अनुसार लागू भूजल निकासी प्रभारों का भुगतान करेंगी।
- vii) अतिदोहित आकलन यूनिटों में भूजल की निकासी करने वाली सभी खनन परियोजनाओं को तालिका 5.4 ख के अनुसार भूजल संग्रहण प्रभार का भुगतान करना होगा।

आवेदन के साथ प्रस्तुत किए जाने वाले दस्तावेज

- (क) संबंधित सरकारी एजेंसी/विभाग द्वारा अनुमोदित खनन योजना।
- (ख) आवासन और शहरी कार्य मंत्रालय द्वारा जारी मॉडल भवन उप नियमों के अनुसार क्षेत्र के भीतर वर्षा जल संचयन/पुनर्भरण के लिए प्रस्ताव।
- (ग) खनन के मूल और प्रतिरोधक क्षेत्रों दोनों में भूजल स्थिति का गहराई वार और वर्षवार खनन रिसाव गणना, खनन और डिवाटरिंग का भूजल क्षेत्र में आकलन प्रभाव और इसका सामाजिक-आर्थिक प्रभाव, पुनर्चक्रण, पुनः प्रयोग और पुनर्भरण का ब्यौरा, स्थानीय परिस्थितियों के आधार पर भूजल पर प्रतिकूल प्रभाव को न्यूनतम और समाप्त करने के लिए खनन और जल प्रबंधन के लिए प्रौद्योगिकी का प्रयोग करके पम्पिंग को कम करने के संबन्ध में प्रत्यायित सलाहकार द्वारा तैयार की गई व्यापक रिपोर्ट। रिपोर्ट का फॉर्मेट अनुलग्नक V में दिया गया है।

4.3 आधारभूत परियोजनाएं

चूंकि आधारभूत परियोजनाएं स्थान विशिष्ट होती हैं, अतिदोहित आकलन यूनिटों में स्थित ऐसी परियोजनाओं को एनओसी देने पर कोई रोक नहीं होगी। नई आधारभूत परियोजनाओं/आवासीय भवनों को निर्माण कार्यकलाप के दौरान डिवाटरिंग और / अथवा निर्माण के लिए भूजल का उपयोग अपेक्षित होगा। दोनों ही मामलों में आवेदक कार्य आरम्भ होने से पहले

सीजीडब्ल्यूए से एनओसी प्राप्त करेगा। तथापि अतिदोहित आकलन यूनिटों में निर्माण कार्यकलापों के लिए भूजल का प्रयोग तभी अनुमत्त होगा। यदि उस स्थान के 10 किलोमीटर की परिधि के भीतर कोई भी शोधित सीवेज जल उपलब्ध न हो। नई और मौजूदा आधारभूत परियोजनाओं को भूजल निकासी के लिए एनओसी प्राप्त करना भी अपेक्षित होगा।

अतिदोहित आकलन यूनिटों में वाटर पार्क, थीम पार्क, और मनोरंजन पार्कों के लिए भूजल की निकासी हेतु एनओसी नहीं दिया जाएगा।

आधारभूत परियोजनाओं की सांकेतिक सूची अनुलग्नक VI में दी गई है।

भूजल की निकासी के लिए एनओसी दिया जाएगा बशर्ते कि निम्नलिखित विशिष्ट शर्तें पूरी हों:

- i) आधारभूत परियोजनाएं, जिनके लिए डिवाटरिंग अपेक्षित हैं, के मामले में प्रस्तावक को डिवाटरिंग बहिर्भाव दर (डिजीटल वाटर फ्लो मीटर का प्रयोग करके) की नियमित मॉनीटरिंग करनी और सीजीडब्ल्यूए/एसजीडब्ल्यूए जो भी लागू हो, के वेब पोर्टल के माध्यम से आंकड़े प्रस्तुत करना आवश्यक होगा। मॉनीटरिंग रिकॉर्डों और परिणामों को सीजीडब्ल्यूए/एसजीडब्ल्यूए की अपेक्षानुसार निरीक्षण अथवा रिपोर्टिंग के लिए प्रस्तावक द्वारा दो वर्ष तक रखना अपेक्षित होगा।
- ii) ऐसी नई परियोजनाओं के लिए, जहां 20 घनमीटर/दिन से अधिक भूजल की आवश्यकता है, सीवेज परिशोधन संयंत्रों (एसटीपी) की संस्थापना अनिवार्य होगी। एसटीपी का जल शौचालय फ्लशिंग, कार धोने, बागवानी करने इत्यादि के लिए प्रयोग किया जाएगा।
- iii) आधारभूत डिवाटरिंग/निर्माण कार्यकलापों के लिए परियोजना प्रस्तावक द्वारा प्रस्तुत विस्तृत प्रस्ताव के अनुसार विशिष्ट अवधि के लिए एनओसी वैध होगा।
- iv) सुरक्षित, अर्ध गंभीर और गंभीर आकलन यूनिटों में भूजल निकासी की सभी आधारभूत परियोजनाओं को तालिका 5.3 क के अनुसार लागू भूजल निकासी प्रभार देना अपेक्षित होगा।
- v) अति-दोहित आकलन यूनिटों में भूजल निकालने वाली सभी आधारभूत परियोजनाओं (नई/मौजूदा) को तालिका 5.3 ख के अनुसार भूजल संग्रहण प्रभार का भुगतान करना होगा।

आवेदन के साथ प्रस्तुत किए जाने वाले दस्तावेज

- (क) ऐसे मामले, जहां डिवाटरिंग होती है, में पम्पिंग की विस्तृत योजना बताते हुए क्षेत्र में भूजल की स्थिति, पंप किए गए जल का प्रस्तावित प्रयोग और उसका भूजल रिजिम पर व्यापक प्रभाव आकलन के सम्बंध में प्रत्यायित सलाहकार द्वारा तैयार की गई प्रभाव आकलन रिपोर्ट प्रस्तुत करना अनिवार्य होगा। रिपोर्ट में भूजल स्तर की गिरावट, भूमि धंसान इत्यादि जैसे किन्हीं विशिष्ट पर्यावरणीय मुद्दों से जूझने के लिए पर्यावरणीय जोखिम और प्रस्तावित प्रबंधन नीतियों को दर्शाया जाना चाहिए।
- (ख) सुरक्षित और अर्ध गंभीर क्षेत्रों में निर्माण के लिए जल की अपेक्षा होने की स्थिति में किसी अन्य स्रोत से जल उपलब्ध न होने के संबंध में 10/-रु. के गैर-न्यायिक स्टैंप पेपर पर एक हलफनामा।
- (ग) गंभीर और अतिदोहित क्षेत्रों में स्थल की 10 कि.मी. की परिधि के भीतर निर्माण के लिए परिशोधित सीवेज जल के उपलब्ध न होने के संबंध में सरकारी एजेंसी से प्रमाणपत्र।
- (घ) वाणिज्यिक प्रयोग के लिए आकलन यूनिटों की सभी श्रेणियों के संबंध में स्थानीय सरकारी जलापूर्ति एजेंसी से जल के उपलब्ध न होने के संबंध में प्रमाण पत्र।
- (ङ) आवासन और शहरी कार्य मंत्रालय द्वारा जारी मॉडल भवन उप-नियमों के अनुसार क्षेत्र के भीतर वर्षाजल संचयन/पुनर्भरण के लिए प्रस्ताव।
- (च) फ्लशिंग इत्यादि के लिए परिचक्रण/परिशोधित जल के पुनः उपयोग (वाणिज्यिक प्रयोग के लिए पूरी हो चुकी आधारभूत परियोजनाओं के मामले में) को ध्यान में रखते हुए राष्ट्रीय भवन कोड, 2016 (अनुलग्नक-1) के अनुसार संगणित जल आवश्यकता का ब्यौरा।
- (छ) वाणिज्यिक प्रयोग के लिए जल की आवश्यकता वाली आधारभूत परियोजनाओं के लिए संबंधित एजेंसी से पूरा होने का प्रमाणपत्र।

5.0 भूजल निकासी/संग्रहित प्रभार

शहरी क्षेत्रों में सभी रेजीडेंशियल अपार्टमेंट/ग्रुप हाउसिंग सोसाइटी/सरकारी जलापूर्ति एजेंसियों को भूजल निकासी के लिए भुगतान करना अपेक्षित होगा।

सुरक्षित, अर्ध गंभीर और गंभीर आकलन यूनिटों में भूजल की निकासी करने वाले सभी उद्योगों/खनन/आधारभूत परियोजनाओं को भूजल निकासी की मात्रा और इस दिशा-निर्देश में दिए गए व्यौरों के अनुसार आकलन यूनिट की श्रेणी के आधार पर भूजल निकासी प्रभार का भुगतान करना होगा।

अतिदोहित आकलन यूनिटों में भूजल की निकासी करने वाले एमएसएमई सहित सभी मौजूदा खनन/आधारभूत परियोजनाओं और मौजूदा उद्योगों को भूजल निकासी की मात्रा के आधार पर भूजल संग्रहण प्रभार देने होंगे। इसके अतिरिक्त, अतिदोहित क्षेत्रों में नए एमएसएमई, नई अवसंरचना और नई खनन परियोजनाओं को भी भूजल संग्रहण प्रभार का भुगतान करना अपेक्षित होगा।

एनओसी देते समय अथवा उसके नवीकरण के समय मौजूद भूजल दिशा-निर्देशों में निर्धारित शर्तों के अनुकरण में जिन मौजूदा उद्योगों, आधारभूत यूनिटों और खनन परियोजनाओं ने कृत्रिम पुनर्भरण संरचनाएं संस्थापित/निर्मित की हैं, को भूजल निकासी प्रभार/ भूजल संग्रहण प्रभार में 50 प्रतिशत की छूट मिलेगी, बशर्ते कि उनका कार्य निष्पादन और जांच संतोषजनक हो।

प्रस्तावित जल निकासी/संग्रहण प्रभार से सृजित राजस्व स्थल विशिष्ट उपयुक्त मांग/आपूर्ति पक्ष के कार्यों के कार्यान्वयन हेतु अलग निधि में रखा जाएगा।

5.1 भूजल निकासी/संग्रहण प्रभार की दरें

I. शहरी क्षेत्रों में रेजीडेंशियल अपार्टमेंट/ग्रुप हाउसिंग सोसाइटी/सरकार जलापूर्ति एजेंसियों के लिए पेय और घरेलू प्रयोग।

केवल पेय/घरेलू प्रयोग के लिए जल की आवश्यकता वाले सभी रेजीडेंशियल अपार्टमेंट/ग्रुप हाउसिंग सोसाइटी को एनओसी लेने के लिए तालिका 5.1 में दी गई दरों के अनुसार भूजल निकासी प्रभार देना होगा।

तालिका 5.1 में पेय और घरेलू प्रयोग के लिए भूजल निकासी प्रभार

निकाले गए भूजलकी मात्रा (घनमीटर/माह)	भूजल निकासी प्रभार की दर (रु. प्रति घनमीटर)
0-25	कोई प्रभार नहीं
26-50	1.00
>50	2.00

सरकारी जलापूर्ति एजेंसियों और सरकारी आधारभूत परियोजनाओं को 0.50 रु. प्रति घनमीटर की दर से भूजल निकासी प्रभार का भुगतान करना होगा।

II. सीलबंद पेयजल यूनिटें

सुरक्षित, अर्ध गंभीर और गंभीर आकलन यूनिटों में सीलबंद पेयजल यूनिटों के लिए भूजल निकासी प्रभारों की दर तालिका 5.2 क में दी गई है और अति दोहित आकलन यूनिटों में भूजल संग्रहण प्रभार तालिका 5.2 ख दिए गए हैं।

तालिका 5.2 क: सीलबंद पेयजल यूनितों के लिए भूजल निकासी प्रभार की दरें (रु. प्रति घनमीटर)

क्र.सं.	क्षेत्र की श्रेणी ↓ भूमिजल प्रयोग →	निकाले गए भूजल की मात्रा				
		50 घनमीटर/ दिन तक	51से<200 घनमीटर/दिन	200 से<1000 घनमीटर/दिन	1000 से <5000 घनमीटर/दिन	5000 घनमीटर/ दिन और अधिक
1.	सुरक्षित	1.00	3.00	5.00	8.00	10.00
2.	अर्ध-गंभीर	2.00	5.00	10.00	15.00	20.00
3.	गंभीर	4.00	10.00	20.00	40.00	60.00

तालिका 5.2 ख सीलबंद पेयजल यूनितों के लिए भूजल रेस्टोरेशन प्रभार की दरें (रु. प्रति घनमीटर)

क्र.सं.	क्षेत्र की श्रेणी ↓ भूमिजल → प्रयोग	निकाले गए भूजल की मात्रा				
		50 घनमीटर/ दिन तक	51 से<200 घनमीटर/ दिन	200 से<1000 घनमीटर/दिन	1000 से <5000 घनमीटर/दिन	5000 घनमीटर/ दिन और उससे अधिक
1.	अतिदोहित (केवल मौजूदा उद्योग)	8.00	20.00	40.00	80.00	120.00

III. अन्य उद्योग और आधारभूत परियोजनाएं

सुरक्षित, अर्ध-गंभीर और गंभीर आकलन यूनितों में अन्य उद्योगों और आधारभूत परियोजनाओं के लिए भूमिजल निकासी प्रभार की दरें तालिका 5.3 क में दी गई हैं और अतिदोहित आकलन यूनितों में भूजल संग्रहण प्रभार तालिका 5.3 ख में दिए गए हैं।

तालिका 5.3 क: अन्य उद्योगों और आधारभूत परियोजनाओं के लिए भूजल निकासी प्रभार की दरें (रु. प्रति घनमीटर)

क्र.सं.	क्षेत्र की श्रेणी ↓ भूमिजल → प्रयोग	निकाले गए भूजल की मात्रा			
		< 200 घनमीटर/ दिन	200 से<1000 घनमीटर/दिन	1000 से <5000 घनमीटर/ दिन	5000 घनमीटर/दिन और उससे अधिक
1.	सुरक्षित	1.00	2.00	3.00	5.00
2.	अर्ध-गंभीर	2.00	3.00	5.00	8.00
3.	गंभीर	4.00	6.00	8.00	10.00

तालिका 5.3 ख: अन्य उद्योगों और आधारभूत परियोजनाओं के लिए भूजल निकासी प्रभार की दरें (रु. प्रति घनमीटर)

क्र.सं.	क्षेत्र की श्रेणी ↓ भूमिजल प्रयोग →	निकाले गए भूजल की मात्रा			
		< 200 घनमीटर/ दिन	200 से<1000 घनमीटर/दिन	1000 से <5000 घनमीटर/ दिन	5000 घनमीटर/दिन और उससे अधिक
1.	अतिदोहित (वर्तमान दिशा-निर्देशों के अनुसार मौजूद उद्योग/नए उद्योग)	6.00	10.00	16.00	20.00

IV. खनन परियोजनाएं

सुरक्षित, अर्ध-गंभीर और गंभीर आकलन यूनिटों में भूजल निकालने वाले खनन के लिए भूजल निकासी प्रभार की दरें तालिका 5.4 क में दी गई हैं और अतिदोहित आकलन यूनिटों में भूजल निकालने वाली परियोजनाओं के मामले में भूजल संग्रहण प्रभार तालिका 5.4 ख में दिया गया है।

तालिका 5.4 क: खनन के लिए भूजल निकासी प्रभार की दरें (रु. प्रति घनमीटर)

क्र.सं.	क्षेत्र की श्रेणी ↓ भूमिजल प्रयोग →	निकाले गए भूजल की मात्रा			
		< 200 घनमीटर/ दिन	200 से<1000 घनमीटर/दिन	1000 से <5000 घनमीटर/ दिन	5000 घनमीटर/दिन और उससे अधिक
1.	सुरक्षित	1.00	2.00	2.50	3.00
2.	अर्ध-गंभीर	2.00	2.50	3.00	4.00
3.	गंभीर	3.00	4.00	5.00	6.00

तालिका 5.4 ख खनन के लिए भूजल निकासी प्रभार की दरें (रु. प्रति घनमीटर)

क्र.सं.	क्षेत्र की श्रेणी ↓ भूमिजल प्रयोग →	निकाले गए भूजल की मात्रा			
		< 200 घनमीटर/ दिन	200से<1000 घनमीटर/दिन	1000 से <5000 घनमीटर/ दिन	5000 घनमीटर/दिन और उससे अधिक
1.	अति-दोहित	4.00	5.00	6.00	7.00

6.0 प्रचुर जलापूर्ति

भूजल निकालने और उसकी आपूर्ति करने वाले सभी निजी टैंकर, जो प्रचुर जलापूर्ति करते हैं, को भूजल निकासी के लिए एनओसी प्राप्त करना अब जरूरी होगा। सुरक्षित, अर्ध-गंभीर और गंभीर आकलन इकाइयों में भूजल निकालकर टैंकरों के

माध्यम से प्रचुर जलापूर्ति करने वाले आपूर्तिकर्ता को तालिका 6.1 के अनुसार भूजल निकासी प्रभार का भुगतान करना होगा। अति-दोहित आकलन इकाइयों में भूजल निकालने वाले प्रचुर मात्रा में जलापूर्तिकर्ताओं को तालिका 6.1 ख के अनुसार भूजल संग्रहण प्रभार का भुगतान करना होगा। सभी टैंकरों में उनकी मूवमेंट/कार्य क्षेत्र की मॉनिटरिंग के लिए जीपीएस आधारित सिस्टम संस्थापित करना होगा।

प्रचुर/टैंकर जलापूर्ति के लिए एनओसी जारी करने की कार्य प्रणाली राज्यों/संघ राज्य क्षेत्रों के साथ परामर्श करके तैयार की जायेगी और इस संबंध में उपयुक्त दिशा-निर्देश तैयार किए जाएंगे और उनके लिए अलग से जारी किए जाएंगे।

तालिका 6.1 क प्रचुर/ टैंकर जलापूर्ति के लिए भूजल निकासी प्रभार

श्रेणी	प्रति घनमीटर की दर (रु. में)
सुरक्षित	10
अर्ध-गंभीर	20
गंभीर	25

तालिका 6.1 ख प्रचुर/ टैंकर जलापूर्ति के लिए भूजल निकासी प्रभार

श्रेणी	प्रति घनमीटर की दर (रु. में)
अतिदोहित	35

7.0 लवणीय भूजल की निकासी

अति-दोहित क्षेत्रों में स्थित आधारभूत / खनन परियोजनाओं द्वारा उद्योगों/डिवाटरिंग द्वारा प्रयोग के लिए ताजे जल की अपेक्षा सभी गहराइयों पर लवणीय भूजल अथवा अन्यथा लवणीय ताजे जल क्षेत्र में लवणीय भूजल की पॉकेटों से युक्त क्षेत्रों में लवणीय भूजल की निकासी को प्रोत्साहित किया जाएगा। ऐसे उद्योगों को भूजल निकासी प्रभार का भुगतान करने से छूट दी जाएगी।

डायनामिक भूजल संसाधन के अद्यतन मूल्यांकन के अनुसार सभी गहराइयों पर लवणीय भूजल वाली ऐसी आकलन इकाइयों की सूची सीजीडब्ल्यूए द्वारा उनकी वेबसाइट पर उपलब्ध कराई जाएगी। तथापि, यूनितों द्वारा बहिष्काव के निपटान के संबंध में पर्याप्त ध्यान दिया जाएगा ताकि जल निकायों और जलभृतों को प्रदूषण से बचाया जा सके।

इस संबंध में विस्तृत दिशा-निर्देश तैयार कर लिए गए हैं और अलग से जारी कर दिए गए हैं।

8.0 आद्र भूमि क्षेत्रों का संरक्षण

देश में आद्र भूमि क्षेत्र बहुत महत्वपूर्ण होते हैं क्योंकि वे ही ऐसे क्षेत्रों में भूजल की उपस्थिति का प्रत्यक्ष प्रतिबिंब होते हैं। आद्र भूमि प्राधिकरणों द्वारा आद्र भूमि क्षेत्रों की सुरक्षा का रखरखाव अलग से किया जा रहा है। चूंकि आद्र भूमि क्षेत्र के अस्तित्व के लिए भूजल बहुत महत्वपूर्ण होता है इसलिए आद्र भूमि क्षेत्र में किसी भी भूजल विकास की गतिविधि से उस क्षेत्र में जल की मात्रा प्रभावित होती है।

आद्र भूमि क्षेत्रों की 500 मीटर परिधि की सीमा के भीतर आने वाली परियोजनाओं को अनिवार्य रूप से एक विस्तृत प्रस्ताव प्रस्तुत करना होगा जिसमें यह दर्शाना होगा कि परियोजना प्रस्तावक द्वारा निकाले जाने वाले भूजल का संरक्षित आद्र भूमि क्षेत्रों पर प्रभाव नहीं पड़ेगा। इसके अलावा, सीजीडब्ल्यूए से अनुमति लेने से पहले, परियोजना क्षेत्र में अपनी परियोजनाओं को स्थापित करने के लिए उपयुक्त आद्र भूमि प्राधिकरणों से सहमति/अनुमोदन लेना होगा।

9.0 अनापत्ति प्रमाणपत्र में सामान्य अनुपालन की शर्तें

- एनओसी प्राप्त करने वाले सभी उपयोगकर्ताओं को डिजिटल वॉटर फ्लो मीटर (बीआईएस/आईएस मानकों के अनुरूप) को स्थापित करना और एक्सट्रैक्शन संरचना (ओं) में टेलीमेट्री सिस्टम लगाना अनिवार्य होगा और एनओसी देने के 30 दिनों के भीतर वेब-पोर्टल के माध्यम से सीजीडब्ल्यूए को इसकी स्थापना के बारे में सूचित किया जाएगा।

- ii. प्रस्तावकों द्वारा जल प्रवाह मीटर की अधिकृत एजेंसी से अनिवार्य रूप से एक वर्ष में एक बार जांच कराई जाएगी।
- iii. प्रस्तावक परियोजना क्षेत्र में छत पर वर्षा जल संचयन और पुनर्भरण प्रणाली स्थापित करेंगे।
- iv. प्रस्तावक धारा 6 में दी गई दरों के अनुसार भूजल निष्कर्षण की मात्रा के आधार पर भूजल निकालने/पुनर्भरण शुल्क का भुगतान करेंगे।
- v. भूजल स्तर निगरानी के उद्देश्य से निर्मित अवलोकन कुओं (पाईजोमीटर) का निर्माण धारा 15 के अनुसार अनिवार्य होगा। जल स्तर का डाटा सीजीडब्ल्यूए को वेब पोर्टल के माध्यम से उपलब्ध कराया जाएगा। पाईजोमीटर के निर्माण के लिए विस्तृत दिशानिर्देश अनुबंध- II में दिए गए हैं।
- vi. प्रस्तावकों को वर्ष में एक बार निष्कर्षण संरचना (ओं) से भूजल की गुणवत्ता की निगरानी करनी होगी। बोरवेल/नलकूपों/खोदे गए कुओं से जल के नमूने को हर साल अप्रैल/मई के दौरान एकत्र किया जाएगा और बुनियादी मानकों (धनायन और आयन), भारी धातुओं, कीटनाशकों/ जैविक यौगिकों इत्यादि का एनएबीएल अधिकृत प्रयोगशालाओं में विश्लेषण किया जाएगा। जल की गुणवत्ता के आंकड़ों को वेब पोर्टल के माध्यम से सीजीडब्ल्यूए को उपलब्ध कराया जाएगा।
- vii. यदि एनओसी की वैधता अवधि के भीतर यांत्रिक विफलता के कारण मौजूदा कुंआ अस्तित्व में नहीं रह जाता है, तो उपयोगकर्ता वेब पोर्टल पर सीजीडब्ल्यूए को सूचना देकर इसी तरह का दूसरे कुंआ का निर्माण कर सकता है। अप्रचलित कुंआ ठीक से सील किया जाएगा (अनुबंध VII का संदर्भ लें)। उपयोगकर्ता को इस संबंध में दस्तावेजी प्रमाण प्रस्तुत करना आवश्यक होगा। यदि मौजूदा निष्कर्षण संरचनाएं जल प्रदान करने में विफल रहती हैं और प्रस्तावक उसी परिसर में एक और ट्यूबवेल ड्रिल करने की इच्छा रखता है तो प्राधिकरण की पूर्व अनुमति लेना अपेक्षित होगा। यदि प्रतिस्थापन कुंआ को दूसरी अलग जगह पर ड्रिल किया जाना है तो प्रस्तावक को नया एनओसी प्राप्त करना होगा।
- viii. जहां कहीं भी संभव हो, वहां रि-साईकिलड/अपशिष्ट जल शोधन से ग्रीनबेल्ट (बागवानी) में जल की आवश्यकता को पूरा किया जाएगा।
- ix. स्वामित्व परिवर्तन के मामले में, उद्योग के नए मालिक द्वारा परिसर पर कब्जा लेने के 60 दिनों के भीतर दस्तावेजी प्रमाण के साथ एनओसी में आवश्यक परिवर्तनों को शामिल करने के लिए आवेदन करना होगा।

10.0 एनओसी शर्तों के अनुपालन की निगरानी

एनओसी की शर्तों के अनुपालन की निगरानी के लिए केंद्रीय भूजल प्राधिकरण और राज्य/संघ शासित क्षेत्रों के भूजल प्राधिकरण निम्नलिखित कदम उठाएंगे:

- क. अनुपालन निगरानी के लिए उपयुक्त एमआईएस विकसित किया जाएगा।
- ख. जिला कलेक्टर/उपायुक्त (डीसी) / जिला मजिस्ट्रेट (डीएम) अनधिकृत भूजल निष्कर्षण संरचनाओं को सील करना, बिजली काटना, एनओसी की शर्तों का उल्लंघन करने वालों के खिलाफ अभियोजन शुरू करना और पर्यावरण क्षतिपूर्ति की कार्रवाई जैसे बाध्यकारी उपायों को करने के लिए अधिकृत हैं।
- ग. सक्षम प्राधिकारी के अनुमोदन से सीजीडब्ल्यूबी/ सीजीडब्ल्यूए और राज्य भूजल संगठनों के तकनीकी अधिकारियों को निगरानी और आवधिक निरीक्षण की कार्रवाई करने के लिए अधिकृत किया जाता है।
- घ. एनओसी शर्तों में किसी भी तरह के उल्लंघन के मामले में, प्रस्तावक धारा 16 के अनुसार दंड का भुगतान करने के लिए उत्तरदायी होंगे।

11.0 एनओसी का नवीनीकरण

एनओसी का समय-समय पर नवीनीकरण किया जाएगा, जिसमें निम्नलिखित शर्तों का अनुपालन किया जाएगा:

- i. आवेदक को इसकी वैधता की समाप्ति से कम से कम 90 दिन पहले एनओसी के नवीकरण के लिए आवेदन करना होगा।
- ii. एनओसी के नवीकरण का आवेदन अनुपालन रिपोर्ट के साथ होगा।

- iii. नवीनीकरण प्रदान करने से पहले, केंद्रीय भूजल प्राधिकरण या राज्य / संघ राज्य क्षेत्र प्राधिकरण को स्वयं को संतुष्ट करेगा कि एनओसी की शर्तों का अनुपालन किया गया है।
- iv. मूल्यांकन श्रेणी में परिवर्तन के मामले में, नई श्रेणी में निर्धारित शर्तों के साथ नवीकरण की अनुमति दी जाएगी।
- v. निर्दिष्ट शर्तों के अनुसार विभिन्न उपयोगों के लिए एनओसी का नवीनीकरण निम्नानुसार किया जाएगा:

श्रेणी	उपयोग	नवीनीकरण की अवधि
गंभीर, अर्ध-गंभीर और सुरक्षित	पीने और घरेलू उपयोग एवं शहरी जल आपूर्ति एजेंसियों के लिए बुनियादी ढांचा परियोजनाएं	5 वर्ष
	इंडस्ट्रीज	3 वर्ष
	खान	2 वर्ष
अति दोहित	अति-दोहित क्षेत्रों में सभी उपयोगकर्ता	2 वर्ष

vi. यदि नवीनीकरण का आवेदन समय पर प्रस्तुत किया गया है और सीजीडब्ल्यूए / संबंधित राज्य / संघ राज्य क्षेत्र के प्राधिकरण, समय पर आवेदन की प्रक्रिया को आगे बढ़ाने में असमर्थ हैं तो एनओसी को एनओसी के नवीकरण की तारीख से बढ़ाया जाना माना जाएगा।

vii. यदि प्रस्तावक एनओसी की समाप्ति की तारीख से 3 महीने के भीतर नवीकरण के लिए आवेदन करने में विफल रहता है तो प्रस्तावक पर एनओसी की समाप्ति की तारीख से शुरू होने वाली अवधि और सक्षम प्राधिकारी द्वारा नवीनीकरण किए जाने की तारीख तक पर्यावरण क्षतिपूर्ति के भुगतान का उत्तरदायी होगा।

12.0 एनओसी का विस्तार

यदि प्रस्तावक वास्तविक कारणों से एनओसी की वैधता अवधि में कुएं (ओं) का निर्माण करने में असमर्थ रहता है तो प्रस्तावक को एनओसी के विस्तार के लिए आवेदन करना होगा। विस्तार के आवेदन में विलंब के कारणों को दस्तावेजों के आधार पर पुष्ट किया जाना चाहिए। एनओसी को विस्तार दिए जाने की अन्य शर्तें, नई एनओसी के समान ही होंगी।

एनओसी को अधिकतम दो वर्षों के लिए बढ़ाया जाएगा। इस बढ़ाई गई अवधि की समाप्ति के बाद इसमें कोई और विस्तार नहीं दिया जाएगा। ऐसी स्थिति में, आवेदक को एनओसी लेने के लिए नए सिरे से आवेदन करना होगा।

13.0 अवैध भूजल निकासी के खिलाफ शक्तियों का प्रत्यायोजन

केंद्रीय भूजल प्राधिकरण ने प्रत्येक राजस्व जिला/ सब डिविजनल के जिला मजिस्ट्रेटों/जिला कलेक्टरों/ सब डिविजनल मजिस्ट्रेटों को प्राधिकृत अधिकारी नियुक्त किया है, जिन्हें अवैध कुओं को सील करने, कुओं को मिलने वाली बिजली को काटने, उल्लंघन करने वालों के खिलाफ अभियोजन इत्यादि शुरू करने की शक्ति प्रदान की गई है, जिसमें उनके संबंधित अधिकारक्षेत्र में भूजल से संबंधित शिकायतों का निवारण शामिल है।

दिशा-निर्देशों के अनुसार निगरानी और अनुपालन तंत्र को और अधिक विकेंद्रीकृत और मजबूत बनाने के लिए, राज्यों/संघ राज्य क्षेत्रों के राजस्व और उद्योगों के संबंधित विभागों के अधिकारियों को राज्य/संघ राज्य क्षेत्रों की सरकारों के परामर्श से प्राधिकृत अधिकारी के रूप में नियुक्त किया जाएगा।

सीजीडब्ल्यूए द्वारा एनओसी एप्लीकेशन पोर्टल (एनओसीएपी) में जारी एनओसी की एक प्रति संबंधित जिला मजिस्ट्रेट/जिला कलेक्टर को भेजी जाएगी। केंद्रीय भूजल प्राधिकरण के निर्देशों के उल्लंघन और एनओसी में निर्धारित शर्तों को पूरा न करने की स्थिति में प्राधिकृत अधिकारी, पर्यावरण (संरक्षण) अधिनियम, 1986 की धारा 15 से 21 के तहत उचित याचिका/मूल आवेदन आदि उचित न्यायालयों में दायर करेंगे।

14.0 भूजल स्तर की निगरानी

भूजल स्तर की निगरानी के लिए सभी परियोजना प्रस्तावकों (10 सीयूएम/डी से अधिक भूजल निकासी) को अपने परिसर के भीतर अनिवार्य रूप से पाईजोमीटर (अवलोकन कुओं) का निर्माण करना पड़ता है। अनुपालन शर्तों की ऐसी व्यवस्था यह सुनिश्चित करने के लिए बनाई गई है जिससे कि हर महीने परियोजना क्षेत्र में भूजल स्तर की निगरानी और अवलोकन किया जा सके। इस संबंध में परियोजना प्रस्तावकों द्वारा पाईजोमीटर के माध्यम से जल स्तर की निगरानी के आवश्यक मानदंडों को तालिका 15.1 में दिया गया है।

निर्माण किए जाने वाले पीजोमीटर और जल स्तर निगरानी तंत्र के प्रकार की तालिका 15.1					
क्र.सं.	भूजल निकासी की मात्रा (सीयूएम/डी)	अपेक्षित पीजोमीटर की संख्या	निगरानी प्रणाली		
			मैनुअल	डीडब्ल्यूए लआर	डीडब्ल्यूएलआरके साथ टेलीमेटरी
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

पाईजोमीटर उपयुक्त ढंग से स्थापित किया जाएगा जिससे पाईजोमीटर में टैप किए गए जलभूत क्षेत्र की समानता पंपड कुएं के समान सुनिश्चित हो सके।

15.0 पर्यावरणीय क्षतिपूर्ति

उपयुक्त प्राधिकरण से वैध एनओसी लिए बिना उद्योगों, इंफ्रास्ट्रक्चर इकाइयों और खदान परियोजनाओं द्वारा व्यावसायिक उपयोग के लिए भूजल निष्कर्षण अवैध माना जाएगा और इस तरह के निकाय भूजल निकासी की मात्रा के लिए पर्यावरण क्षतिपूर्ति के भुगतान के लिए उत्तरदायी होंगे। नीचे उल्लिखित केंद्रीय प्रदूषण नियंत्रण बोर्ड (सीपीसीबी) द्वारा निर्धारित मानदंडों का उपयोग पर्यावरणीय क्षतिपूर्ति की गणना के लिए किया जाएगा:

ईसीजीडब्ल्यू = प्रतिदिन भूजल खपत x पर्यावरण क्षतिपूर्ति दर (ईसीआरजीडब्ल्यू) x दिन की संख्या x निवारण घटक

जहां भूजल खपत घन मीटर/ दिन और ईसीआरजीडब्ल्यू रु./ सीयूएम में है

15.1 पर्यावरणीय क्षतिपूर्ति की दरें:

मूल्यांकन इकाइयों की विभिन्न श्रेणियों में अलग-अलग उपयोगकर्ताओं की पर्यावरणीय क्षतिपूर्ति (ईसीआरजीडब्ल्यू) की दरें तालिका 15.1 से 15.3 में दी गई हैं।

तालिका 15.1 : पैकेज्ड पेयजल इकाइयों के लिए ईसीआरजीडब्ल्यू

क्र.सं.	क्षेत्र वर्गीकरण	जल की खपत (सीयूएम/दिन)			
		<200/	200 to <1000	1000 to <5000	5000 & above
		पर्यावरणीय क्षतिपूर्ति दर (ईसीआरजीडब्ल्यू) रु./घन मीमें .			
	सुरक्षित	12	18	24	30
2	अर्ध-गंभीर	24	36	48	60
3	गंभीर	36	48	66	90
4	अति-दोहित	48	72	96	120

टिप्पणी:-न्यूनतम ईसीजीडब्ल्यू 1,00,000/- रुपए से कम नहीं होगा।

तालिका 15.2: खनन/इंफ्रास्ट्रक्चर डि-वाटरिंग परियोजनाओं के लिए ईसीआरजीडब्ल्यू

क्र.सं.	क्षेत्र वर्गीकरण	जल खपत (सीयूएम/दिन)			
		<200	200 to <1000	1000 to <5000	5000 & above
		पर्यावरणीय क्षतिपूर्ति दर (ईसीआरजीडब्ल्यू) रु./घन मीमें .			
1	सुरक्षित	15	21	30	40
2	अर्ध-गंभीर	30	45	60	75
3	गंभीर	45	60	85	115
4	अति-दोहित	60	90	120	150

टिप्पणी:-न्यूनतम ईसीआरजीडब्ल्यू 1,00,000/- रुपए से कम नहीं होगा।

तालिका 15.3: औद्योगिक इकाइयों के लिए ईसीआरजीडब्ल्यू

क्र.सं.	क्षेत्र वर्गीकरण	जल की खपत (सीयूएम/दिन)			
		<200	200 to <1000	1000 to <5000	5000 & above
		पर्यावरणीय क्षतिपूर्ति दर (ईसीआरजीडब्ल्यू) रु./घन मीमें .			
1	सुरक्षित	20	30	40	50
2	अर्ध-गंभीर	40	60	80	100
3	गंभीर	60	80	110	150
4	अति-दोहित	80	120	160	200

टिप्पणी:-न्यूनतम ईसीआरजीडब्ल्यू 1,00,000/- रुपए से कम नहीं होगा।

15.2 नुकसान और पर्यावरणीय क्षति की भरपाई के लिए निवारक कारक (पैकेज्ड पेयजल यूनिट्स, खनन, उद्योग और इंफ्रास्ट्रक्चर से जुड़ी परियोजनाओं के लिए)

अवैध भूजल निष्कर्षण की अवधि के आधार पर निम्नलिखित निवारक कारकों को नुकसान और पर्यावरणीय क्षति की भरपाई का विवरण तालिका 15.4 में दिया गया है।

तालिका 15.4: भूजल निकासी की मात्रा और अवैध निकासी के वर्षों की संख्या के आधार पर निवारक कारक

क्र.सं.	जल की खपत	निवारक कारक		
		< 2 वर्ष	2-5 वर्ष	>5 वर्ष
1	<1000 केएलडी	1.00	1.00	1.25
2	1000-5000 केएलडी	1.00	1.00	1.50
3	>5000 केएलडी	1.00	1.25	2.00

टिप्पणी: केएलडी – किलोमीटर प्रतिदिन

16.0 दंड का प्रावधान

उपयुक्त प्राधिकारी द्वारा जारी एनओसी शर्तों का पालन न करने की स्थिति में प्रस्तावकों पर जुर्माना लगाया जाएगा। एनओसी की विभिन्न शर्तों का पालन नहीं करने की प्रस्तावित दंड की दरें तालिका 16.1 में दी गई हैं। जल शक्ति मंत्रालय में सक्षम प्राधिकारी के अनुमोदन से दंड की दरों की समय-समय पर समीक्षा की जाएगी।

तालिका 16.1: एनओसी शर्तों का अनुपालन न करने पर दंड का प्रावधान

क्र.सं.	मदें	शुल्क रुपए में
1	टेलीमेट्री सिस्टम के साथ स्थापित नहीं होना/ दोषपूर्ण डिजिटल वॉटर फ्लो मीटर।	200000
2	अतिरिक्त भूजल निष्कर्षण संरचनाओं का अप्रकटीकरण/निर्माण क) गैर-कार्यात्मक संरचनाएं। ख) अप्रचलित/ परित्यक्त टिप्पणी: दी गई दरें गैर-कार्यात्मक/अप्रचलित/ परित्यक्त संरचनाओं के लिए हैं। समेकित दंड के लिए इस तरह की संरचनाओं की कुल संख्या के साथ इसे गुणा किया जाएगा।	200000 100000
3	ताजे जल क्षेत्रों की रिपोर्टिंग आवेदन में त्रैकिश/लवणता क्षेत्र के रूप में।	200000
4	पाईज़ोमीटर को स्थापित नहीं किया जाना।	200000
5	दोषपूर्ण डीडब्ल्यूएलआर / टेलीमेट्री प्रणाली / स्थापित नहीं होना	100000
6	पुनर्भरण की अपर्याप्त क्षमता / जल संरक्षण संरचनाओं का निर्माण नहीं होना।	500000
7	पुनर्भरण संरचनाओं का रखरखाव न होना।	200000
8	शोधित / बिना शोधित जल को जलभूत प्रणाली में पहुंचाना। नोट: जुमनि के अलावा, प्रस्तावक पर्यावरण (संरक्षण) अधिनियम, 1886 के प्रावधानों के अनुसार जलभूत सुधार लागत वहन करेगा।	1000000
9	जल स्तर / जल गुणवत्ता डाटा को प्रस्तुत नहीं करना।	50000
10	भूजल की दैनिक निकासी/निष्कर्षण आंकड़ों की लॉग बुक का रखरखाव नहीं करना।	50000
11	पुनर्भरण संरचना (ओं) की तस्वीर न प्रस्तुत करना।	50000
12	अपनी अनुपालन रिपोर्ट प्रस्तुत न करना।	100000
13	प्राधिकृत/अपंजीकृत ड्रिलिंग रिग्स (प्रति संरचनाओं) द्वारा भूजल निष्कर्षण संरचनाओं का निर्माण।	100000
14	जलापूर्ति टैंकों का पंजीकरण न करना।	500000
15	गलत सूचना / वचन देना।	100000

मौजूदा जारी एनओसी पत्र में सुधार / संशोधन के लिए शुल्क का भुगतान भी करना होगा। ऐसे शुल्कों का विवरण तालिका 16.2 में दिया गया है।

तालिका 16.2: जारी मौजूदा एनओसी में सुधार / संशोधन के लिए प्रस्तावित शुल्क

क्र.सं.	मदें	शुल्क रुपए में
1	पुनर्भरण मात्रा में बदलाव	10000
2	उपयोगकर्ता आईडी में परिवर्तन।	5000
3	फर्म के नाम में बदलाव	5000
4	एनओसी को बढ़ाया जाना	5000
5	एनओसी को प्रतिरूप में जारी करना	5000
6	एनओसी के शुद्धिपत्र को जारी करना	5000
7	कोई अन्य मद / सुधार आदि	5000

17.0 अन्य महत्वपूर्ण शर्तें (सभी पर लागू):

- केंद्रीय भूजल बोर्ड/ राज्य भूजल प्राधिकरण से जारी होने वाली वैध एनओसी के बिना किसी व्यक्ति/एजेंसी को भूजल की बिक्री करने की अनुमति नहीं है।
- इंफ्रास्ट्रक्चर परियोजनाओं में भूजल समावेशन/भंडारण सुनिश्चित करने के लिए पक्के / पार्किंग क्षेत्र को इंटरलॉकिंग / छिद्रित टाइलों या अन्य उपयुक्त उपायों के साथ कवर किया जाना चाहिए।
- इंफ्रास्ट्रक्चर परियोजनाओं के मामले में, फर्म/संस्था, परियोजनाओं में दोहरी जलापूर्ति प्रणाली के कार्यान्वयन को सुनिश्चित करेगी। इसका अनुपालन वेब पोर्टल के माध्यम से प्रस्तुत किया जाएगा।
- एनओसी में उल्लिखित शर्तों का अनुपालन न करने पर प्रदान की गई एनओसी के रद्द होने / एनओसी के नवीकरण न होने का पर्याप्त कारण माना जा सकता है।
- संबंधित श्रेणियों में निर्दिष्ट पुख्ता दस्तावेजों के बिना किसी भी आवेदन पर विचार नहीं किया जाएगा।
- निष्कर्षण संरचना (ओं) को परियोजना संपत्ति परिसर के अंदर स्थित होना चाहिए।
- एनओसी में निर्धारित शर्तों का अनुपालन उपयोगकर्ताओं द्वारा सीजीडब्ल्यूए / राज्य भूजल प्राधिकरण के वेब पोर्टल में ऑनलाइन रिपोर्ट किया जाएगा।
- निर्धारित प्रसंस्करण शुल्क, यदि कोई हो, समय-समय पर विभिन्न सेवाओं के लिए, लिया जाएगा।

टिप्पणी:

- दिशानिर्देश समय-समय पर संशोधन के अधीन हैं।
- इस दस्तावेज में अनुलग्नक सहित हिंदी और अंग्रेजी संस्करणों के बीच किसी भी विसंगति के मामले में, बाद वाला मान्य होगा।

अनुलग्नक I**पेयजल और घरेलू उपयोग के लिए जल की आवश्यकताओं का अनुमान****(स्रोत: नेशनल बिल्डिंग कोड 2016, बीआईएस)**

क) आवासीय भवन:

आवास	आबादी
1 शयनकक्ष आवास इकाई	4
2 शयनकक्ष आवास इकाई	5
3 शयनकक्ष आवास इकाई	6
4 शयनकक्ष आवास इकाई और उससे अधिक	7

टिप्पणियां:

- उपरोक्त आंकड़े सहयोगी कार्मिकों सहित घरेलू परिवारों पर विचार करते हैं, जहां कहीं भी लागू हो।
- प्लॉट किए गए विकास में घरेलू परिवार इकाइयों की अपेक्षित संख्या और इनके प्रकार पर विचार करने के बाद आबादी का अनुमान लगाया जा सकता है।
- ईडब्ल्यूएस श्रेणी के तहत आवासीय इकाई में अपेक्षित आबादी 4 होगी और स्टूडियो अपार्टमेंट में अपेक्षित आबादी 2 होगी।

एक सामान्य नियम के अनुसार घरेलू और गैर-घरेलू जरूरतों के लिए प्रति व्यक्ति प्रति दिन निम्नलिखित दरों पर विचार किया जा सकता है:

क) 20,000 तक की आबादी वाले समुदायों के लिए:

1)	स्टैंड पोस्ट के माध्यम से जलापूर्ति:	40 एलपीएचडी (न्यूनतम)
2)	घरेलू सेवा के माध्यम से जलापूर्ति: कनेक्शन	70 से 100 एलपीएचडी

- ख) उन समुदायों के लिए: 100 से 135 एलपीएचडी
पूर्ण फ्लशिंग प्रणाली के साथ 20,000
से 100,000 की एक साथ आबादी
- ग) उन आबादी वाले समुदायों के लिए: 150 से 200 एलपीएचडी
पूर्ण फ्लशिंग प्रणाली के साथ 100,000
से अधिक आबादी के लिए

टिप्पणी - मौजूदा परिस्थितियों और जल की उपलब्धता पर निर्भरता को ध्यान में रखते हुए मध्यम आय समूह (एमआईजी) और निम्न आय वर्ग (एलआईजी) और आर्थिक रूप से कमजोर वर्ग (ईडब्ल्यूएस) के लिए घरों में प्रति दिन 150 से 200 लीटर प्रति व्यक्ति के हिसाब से की जाने वाली जलापूर्ति को प्रति दिन 135 लीटर तक घटाया जा सकता है। 150 से 200 लीटर प्रति दिन प्रति व्यक्ति में से 45 लीटर प्रति व्यक्ति जल की मात्रा फ्लशिंग और दूसरे घरेलू उद्देश्यों में प्रयोग की जा सकती है।

क. आवासीय इमारतों के अलावा अन्य भवनों में जल की आवश्यकता

क्र. सं.	भवन का प्रकार	घरेलू लीटर प्रति व्यक्ति प्रतिदिन	फ्लशिंग लीटर प्रति व्यक्ति प्रतिदिन	कुल खपत लीटर प्रति व्यक्ति प्रतिदिन
1.	कैंटीन सहित कारखाने जहां स्नानगृह उपलब्ध कराना आवश्यक है	30	15	45
2.	कैंटीन सहित कारखाने जहां स्नानगृह उपलब्ध कराना आवश्यक नहीं है	20	10	30
3.	अस्पताल (कपड़े धोना और रसोई को छोड़कर):			
	क) बिस्तरों की संख्या 100 से अधिक नहीं	230	110	340
	ख) बिस्तरों की संख्या 100 से अधिक	300	150	450
	ग) बाह्य रोगी विभाग (ओपीडी)	10	5	15
4.	नर्सों के घर और मेडिकल क्वार्टर	90	45	135
5.	हॉस्टल	90	45	135
6.	होटल (3 सितारा तक) कपड़े धोना, रसोई, कर्मचारियों और जल निकायों को छोड़कर	120	60	180
7.	होटल (4 सितारा और इससे अधिक) कपड़े धोना, रसोई, कर्मचारियों और जल निकायों को छोड़कर	260	60	320
8.	कार्यालय (कैंटीन सहित)	25	20	45
9.	रसोई के लिए अपेक्षित जल सहित रेस्तरां और फूड कोर्ट:			
	क) रेस्तरां	55 प्रति सीट	15 प्रति सीट	70 प्रति सीट
	ख) फूड कोर्ट	25 प्रति सीट	10 प्रति सीट	35 प्रति सीट
10.	क्लब हाउस	25	20	45
11.	स्टेडियम	4	6	10
12.	सिनेमा, कॉन्सर्ट हॉल, थियेटर और मल्टीप्लेक्स	5 प्रति सीट	10 प्रति सीट	15 प्रति सीट
13.	13. स्कूल / शैक्षणिक संस्थान :			
	क) बिना बोर्डिंग सुविधाओं के	25	20	45
	ख) बोर्डिंग सुविधाओं सहित	90	45	135

14.	खरीदारी और खुदरा (मॉल)			
	क) कर्मचारी	25	20	45
	ख) आगंतुक	5	10	15
15.	ट्रैफिक टर्मिनल स्टेशन			
	क) हवाई अड्डे	40	30	70
	ख) स्नान की सुविधा सहित रेलवे स्टेशन (जंक्शन)	40	30	70
	ग) बिना स्नान की सुविधा वाले रेलवे स्टेशन (जंक्शन)	30	15	45
	घ) स्नान की सुविधा सहित रेलवे स्टेशन (इंटरमीडिएट)	25	20	45
	ड) बिना स्नान की सुविधा वाले रेलवे स्टेशन (इंटरमीडिएट)	15	10	25
	च) अंतरराज्यीय बस टर्मिनल	25	20	45
छ) अंतरराज्यीय बस टर्मिनल/मेट्रो स्टेशन	10	5	15	

टिप्पणियां:

1. आगंतुकों के लिए जल की मांग की गणना प्रति दिन प्रति व्यक्ति 15 लीटर की खपत हो सकती है।
2. जल की मांग में रोगियों, परिचारकों, आगंतुकों और कर्मचारियों की आवश्यकता शामिल है। रसोई, कपड़े धोना और क्लीनिकल जल की अतिरिक्त मांग की गणना वास्तविक आवश्यकताओं के आधार पर की जाएगी।
3. कर्मचारियों और विक्रेताओं द्वारा प्रयोग की जा रही सुविधाओं पर विचार करते हुए स्टेशनों द्वारा नियंत्रित किए जाने वाले यात्रियों की औसत संख्या के आधार पर लोगों की संख्या का निर्धारण किया जाएगा।
4. औसत सीजनल पीक आवश्यकताओं पर विचार किया जाना चाहिए।
5. अस्पतालों को श्रेणी क (25 से 50 बिस्तर), श्रेणी ख (51 से 100 बिस्तर), श्रेणी ग (101 से 300 बिस्तर), श्रेणी घ (301 से 500) और श्रेणी ड (501 से 750 बिस्तर) में वर्गीकृत किया जा सकता है।

अनुलग्नक II

पाईजोमीटर के निर्माण और भूजल स्तर और गुणवत्ता की निगरानी के लिए दिशानिर्देश

पाईजोमीटर एक बोरवेल/ट्यूबवेल है जिसका उपयोग केवल टेप को घटाकर/साउंडर या स्वचालित / डिजिटली जल स्तर मापने वाले उपकरण के तौर पर किया जाता है। जब भी जरूरत होती है तो जल की गुणवत्ता के परीक्षण के लिए जल नमूना लेने के लिए भी इसका उपयोग किया जाता है। पाईजोमीटर को स्थापित करने के सामान्य दिशानिर्देश निम्नानुसार हैं:

- पंपिंग कुएं से 50 मीटर की न्यूनतम दूरी पर पाईजोमीटर को स्थापित/निर्माण किया जाना होता है जहां से भूजल निकाला जा रहा है। पाईजोमीटर का व्यास लगभग चार इंच से छह इंच होना चाहिए।
- पाईजोमीटर की गहराई पंपिंग कुएं से समान होनी चाहिए, जहां से भूजल निकाला जा रहा है। अगर, एक से अधिक पंपिंग कुओं का निर्माण एक्विफर्स को अलग-अलग गहराई पर करने के लिए किया जाता है, तो एक से अधिक पाईजोमीटरों को अलग-अलग एक्विफर्स को टैप करने वाले कुओं की तरह बनाने की आवश्यकता होगी।
- आसपास के ट्यूबवेल से पंपिंग को लगभग चार से छह घंटे के लिए रोक जाने के बाद ही पाईजोमीटर में जल स्तर की माप ली जानी चाहिए।

- उद्योगों और खनन द्वारा जल की निकासी के लिए प्री-मानसून (अप्रैल / मई) की अवधि के दौरान वर्ष में एक बार भूजल गुणवत्ता की निगरानी की जानी चाहिए। एनएबीएल मान्यता प्राप्त प्रयोगशाला से भूजल के नमूनों का विश्लेषण किया जाना चाहिए।
- मानदंडों और पहचान के लिए पाईजोमीटर / ट्यूबवेल की संख्या, गहराई और पाईजोमीटर / ट्यूबवेल ज़ोन टैप की जानकारी उपलब्ध कराने के लिए पाईजोमीटर / ट्यूबवेल साइट पर एक स्थायी डिस्प्ले बोर्ड स्थापित किया जाना चाहिए।
- मापन के लिए सुरक्षा और पहुंच के संबंध में किसी अन्य साइट की विशिष्ट आवश्यकताओं का ध्यान रखा जा सकता है।

अनुलग्नक III

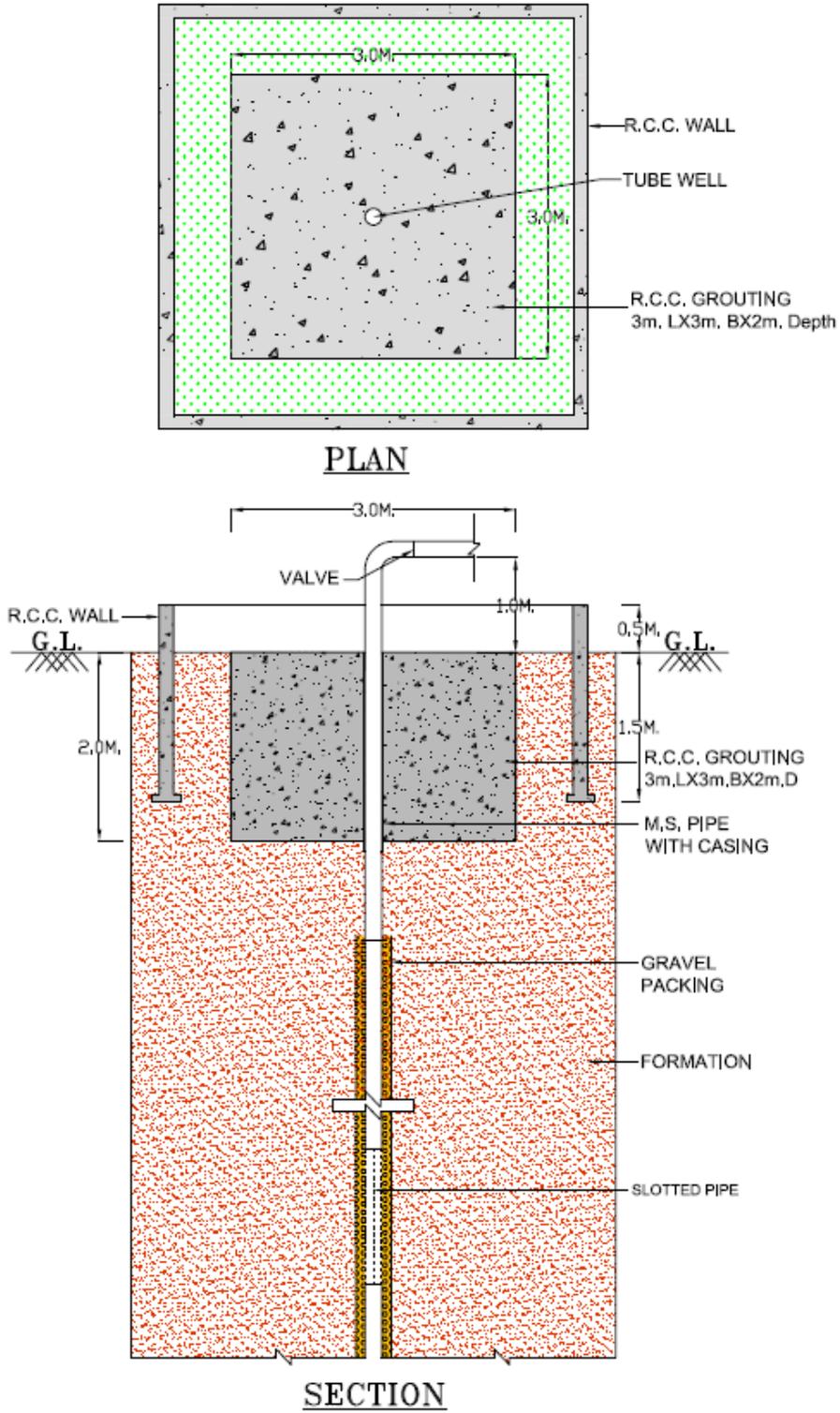
प्रदूषणकारी उद्योगों / परियोजनाओं के संयंत्र परिसर में प्रदूषण की रोकथाम को सुनिश्चित करने के लिए अपनाए जाने वाले उपाय

यह देखा गया है कि चर्मशोधन, स्लॉटर हाउस, डाई, केमिकल, कोलवाशरी, अन्य खतरनाक इकाइयों/आदि जैसे प्रदूषित उद्योगिक स्थलों में और इसके आसपास के क्षेत्रों में भूजल प्रदूषित होता है। भूजल की गुणवत्ता में और अधिक गिरावट को रोकने के लिए आवश्यक है कि इसको संरक्षित करने के सभी जरूरी उपाय किए जाएं। इस श्रेणी के अंतर्गत आने वाले सभी उद्योग / परियोजनाओं को मौजूदा और नई श्रेणी दोनों के तहत निम्नलिखित प्रक्रिया का पालन करने का निर्देश दिया जाता है।

1. किसी भी नलकूप / बोरवेल / कुएं का निर्माण प्रसंस्करण इकाई के आसपास के क्षेत्र में नहीं किया जाना चाहिए। नलकूप / बोरवेल का निर्माण उस स्थान पर किया जाना चाहिए जहां स्वच्छता हो।
2. असेंबली / केसिंग और पीवीसी (पॉली विनाइल क्लोराइड) के लिए केवल हल्के स्टील पाइप का उपयोग किया जाना चाहिए या इस तरह के अन्य पाइप का उपयोग नहीं किया जाना चाहिए। पीवीसी या इसी तरह के दूसरे पाइप वाले ट्यूबवेल / बोरवेल को छोड़ दिया जाना चाहिए और उसे भर देना चाहिए।
3. नलकूप / बोरवेल के आसपास, आरसीसी (प्रबलित कंक्रीट सीमेंट) 3 मीटर (लंबाई) x 3 मीटर (चौड़ाई) x 2 मीटर (गहराई) की ग्राउटिंग की जानी चाहिए। नलकूप / बोरवेल के पाइप को जमीन के स्तर (1 एमएजीएल) से 1 मीटर ऊपर उठाया जाना चाहिए। किसी भी सतही संदूषण को रोकने के लिए नलकूप / बोरवेल को 0.5 मीटर ऊंचाई और 1.5 मीटर गहराई की आरसीसी दीवार से घिरा होना चाहिए जिससे निर्माणाधीन ट्यूबवेल / बोरवेल में संदूषण को रोका जा सके। योजना / अनुभागीय आरेख को संदर्भ के लिए (परिशिष्ट 1 और 2) में संलग्न किया गया है।
3. नलकूप / बोरवेल में नॉन रिटर्न वॉल्व लगाया जाना चाहिए जिससे यह सुनिश्चित हो सके कि निर्मित नलकूप / बोरवेल का उपयोग केवल भूजल निष्कर्षण के लिए किया जाता है।
4. किसी भी समय निर्माणाधीन नलकूप / बोरवेल / पाईजोमीटर में जल या तरल पदार्थ नहीं जाना चाहिए।
5. इस श्रेणी के अंतर्गत आने वाले उद्योगों / परियोजनाओं को संयंत्र परिसर के भीतर किसी भी तरह के पुनर्भरण उपाय लागू नहीं करने चाहिए।
6. एसटीपी (सीवेज ट्रीटमेंट प्लांट) या ईटीपी (एफ्लुएंट ट्रीटमेंट प्लांट) के आसपास के क्षेत्र में स्थित किसी भी नलकूप / बोरवेल को छोड़ दिया जाना चाहिए और उसे भर देना चाहिए।
7. निगरानी के उद्देश्य से बनाए जाने वाले पाईजोमीटर में नलकूप / बोरवेल के निर्माण में अपनाई जाने वाली प्रक्रिया का पालन होना चाहिए।

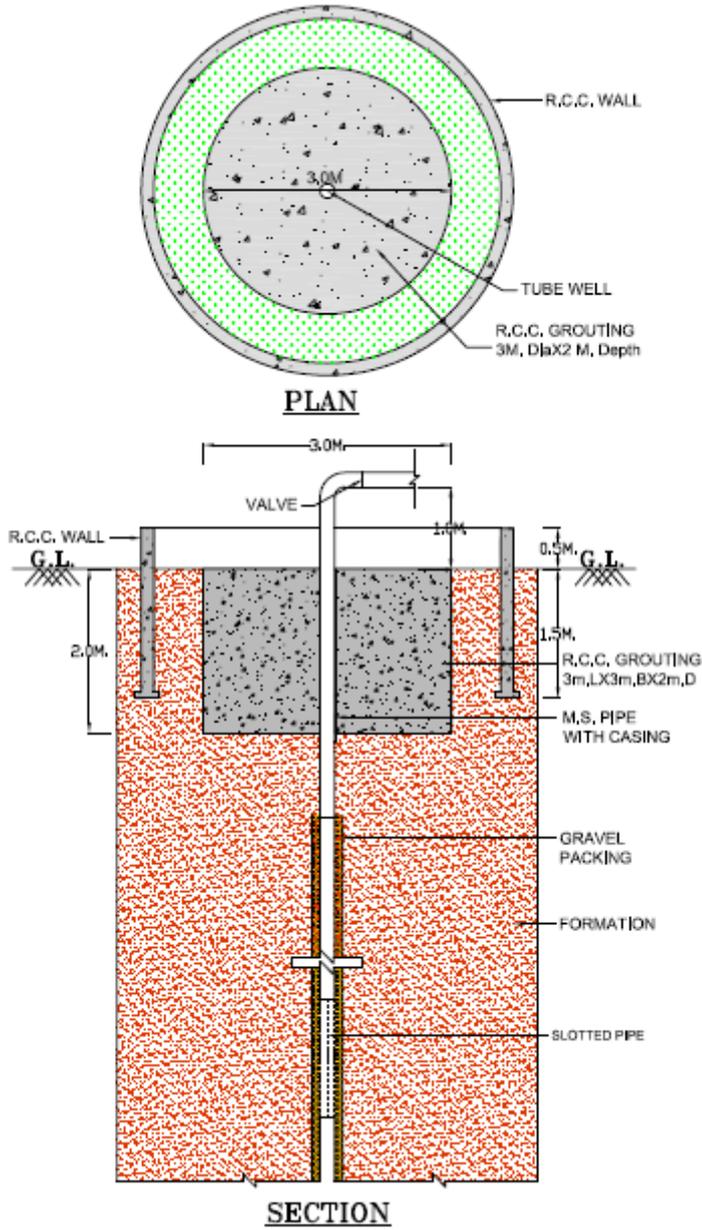
परिशिष्ट 1

कुएं की ऊपरी हिस्से को सुरक्षित करने की योजना / अनुभागीय आरेख



परिशिष्ट 2

कुएं की ऊपरी हिस्से को सुरक्षित करने की योजना / अनुभागीय आरेख



अनुबंध- IV

उद्योगों द्वारा एनओसी प्राप्त करने के लिए हाइड्रो-जियोलॉजिकल रिपोर्ट की रूपरेखा

1. प्रस्तावित परियोजना के बारे में परियोजना क्षेत्र का सीमांकन करते हुए इसकी जगह का विवरण, निर्देशांक, गूगल / टोपोशीट मानचित्र आदि का संक्षिप्त विवरण।
2. परियोजना और उसके आसपास के क्षेत्र में जल स्तर और इसकी गुणवत्ता के आंकड़ों एवं नक्शों सहित इससे जुड़े मुद्दों को शामिल करते हुए भूजल की स्थिति, यदि कोई हो। खदान के मामले में, कोर और बफर ज़ोन दोनों में भूजल स्थिति का वर्णन किया जाना चाहिए।
3. प्रस्तावित निर्माणाधीन ट्यूबवैल / बोरवेल का विवरण। इसमें ड्रिलिंग गहराई, व्यास, संभावित लिथोलॉजिकल लॉग, कम किए जाने वाले पंप का विवरण, पंप का एच.पी., नलकूपों / बोरवेलों की संभावित निकासी आदि को शामिल किया जाता है। जगहों को साइट योजना / मानचित्र पर चिह्नित किया जाना चाहिए। प्रस्तावित पाईजोमीटर की जगह।
4. परियोजना और उसके आसपास क्षेत्र में किए गए जियो-फिजिकल अध्ययनों का विवरण। परियोजना वाले ब्लॉक में भूजल संसाधन की गणना।
5. खदानों के मामले में स्वीकृत खदान योजना और खान / इंफ्रास्ट्रक्चर परियोजनाओं के मामले में विस्तृत डि-वाटरिंग परियोजनाएं।
6. खनन / इंफ्रास्ट्रक्चर डि-वाटरिंग परियोजनाओं के मामले में पंप किए गए जल का प्रस्तावित उपयोग।
7. परियोजना और उसके आसपास क्षेत्र में भूजल पर पड़ने वाले प्रभाव का व्यापक मूल्यांकन और इसके जोखिमों को उजागर करते हुए किसी भी महत्वपूर्ण पर्यावरणीय मुद्दों के समाधान के लिए प्रस्तावित प्रबंधन रणनीतियां।
8. लवणता युक्त जल निकालने वाले उद्योगों द्वारा अपशिष्ट जल के निपटान के लिए प्रस्तावित उपाय।
9. जल संरक्षण के लिए अपनाए जाने वाले उपायों में रि-साइक्लिंग, पुनः उपयोग, शोधन आदि उपाय शामिल हैं, इसमें फर्म द्वारा अपनाए जा रहे जल संतुलन चार्ट के साथ-साथ अपनाए जाने वाले जल संरक्षण के तरीके भी शामिल रहते हैं।
 - परियोजना के अंतर्गत मौजूदा / प्रस्तावित एसटीपी / ईटीपी / सीईपीटी की क्षमता और प्रवाह चार्ट का संक्षिप्त लेख।
 - भूजल बचाने के लिए अपनाए जाने वाले जल संरक्षण उपायों का विवरण।
 - विभिन्न प्रक्रियाओं में जल के उपयोग को दर्शाने वाला कुल जल संतुलन चार्ट।
10. परियोजना से संबंधित कोई अन्य विवरण।

अनुलग्नक-V

भूजल स्थितियों पर रिपोर्ट का फॉर्मेट

- परिचय
- परियोजना वर्णन
- पृष्ठ भूमि
- लक्ष्य और अवसर
- क्षेत्रीय व्यवस्था
- स्थान
- भूमि उपयोग
- जलवायु
- स्थालाकृति और जल निकास
- भूविज्ञान-क्षेत्रीय और स्थानीय

- सामान्य हाइड्रोज्योलॉजी (जलीय प्रकार, जलीय गहराई, जोन टेप- किया गया आदि) भूजल स्थिति (कोर और बफर जोन में)
भूजल गुणवत्ता के जल स्तर में स्थानिक और लैकिक भिन्नता (छिछला और गहरा जलभृत)
- स्थानीय भूजल पर भूजल निष्कर्षण का प्रभाव जल स्तर का जलारेख/निगरानी कुओं में दाबमापी ऐतिहासिक और जल स्तर के प्रचलन विश्लेषण शुद्ध विश्लेषण है। (भूजल के बहाव की दिशा)
अनुमोदित खनन योजना के अनुसार वर्षावार/बेंचवार खनन जल निष्कासन का अभिकलन
- निष्कर्ष

अनुलग्नक-VI

परियोजनाओं के आधारभूत संरचना का निर्देशात्मक सूची

वाणिज्यिक इमारतों सहित आवासीय नगर क्षेत्र

कार्यालय इमारत

विद्यालय कॉलेज

विश्वविद्यालय

सेज

मेट्रो स्टेशन

बस डिपो

हाइवे आधार भूत संरचना

दमकल केन्द्र

गोदाम

व्यापार प्लाजा

मॉल और मल्टीप्लेक्स

अस्पताल

नर्सिंग होम

रिजॉर्ट

होटल/रेस्टोरेन्ट/फुड प्लाजा

होलीडे होम/अतिथि गृह/छात्रावास

बैंकवेट हॉल/

मैरिज गार्डन

आईटी कॉम्प्लेक्स

आईटी कॉम्प्लेक्स

लॉजिस्टिक एण्ड कारगो

क्लबस

व्यापार केन्द्र

अनुलग्नक-VII

2009 के सिविल रिट याचिका में सुपरिम कोर्ट के आदेश में परिव्यक्त वेध कूपों और नल कूपों में उनके गिरने के कारण छोटे बच्चों के घातक दुर्घटनाओं के रोकथाम के लिए पैमाना जवाब में परिव्यक्त वेध कूपों और नल कूपों में उनके गिरने के कारण छोटे बच्चों के घातक दुर्घटनाओं के रोकथाम के लिए पैमाना भारतीय संघ और संगठन उत्तर देने वाला आदेश वर्तमान रिट याचिका में कुछ नहीं है, विषय में हल्के, इसके साथ न्यायालय के आदेश दिनांक 11 फरवरी, 2010के जारी किये गए आपेक्षित दिशा-निर्देश देखिए।

वह संशोधन इस प्रकार है:

- i) जमीन/परिसर के मालिक को वेध कूप/नल कूप बनाने के लिए कोई कदम उठाने से पहले क्षेत्र में संबंधित अधिकारी को लिखित में सूचना देना चाहिए, जो है, जिलाधिकारी, जिला मजिस्ट्रेट/ग्राम पंचायत के सरपंच/कोई अन्य सांघिक अधिकारी/भूजल विभाग के संबंधित अधिकारी/लोक स्वास्थ्य/नगर निगम, जैसा मामला हो सकता है, वेध कूप/नल कूल के निर्माण के लिए।
- ii) सभी ड्रिलिंग ऐजेंसियों का पंजीयन, मुख्यतः सरकारी/अर्द्ध सरकारी निजीइत्यादि जिला प्रशासन/वैधानिक अधिकारी जहां भी लागू हो के साथ अनिवार्य होना चाहिए।
- iii) निम्नलिखित विवरण के साथ कुएं के समीप निर्माण के समय पर सूचना पट्ट की स्थापना:-
 - (क) कुएं के सुधार/निर्माण के समय पर ड्रिलिंग ऐजेंसी का पूरा पता।
 - (ख) कुएं के मालिक/उपयोग करने वाले ऐजेंसी का पूरा पता
- iv) निर्माण के दौरान कुएं के चारों ओर कांटेदार तार घेराबंदी या कोई अन्य उपयुक्त घेरा का स्थापना।
- v) कुएं के चारों ओर के आवरण से (0.30 मीटर जमीन स्तर से ऊपर और 0.30 मीटर जमीन स्तर से नीचे) 0.50x0.50x0.60 मीटर की दूरी पर कोंक्रीट प्लेट फार्म/सिमेंट का निर्माण।
- vi) बोल्ट्स और नट्स के साथ पाइप के आवरण को फिक्स करने के लिए मजबूत कैप उपलब्ध कराते हुए स्टील की वेल्डिंग द्वारा कुएं के सज्जीकरण का कैपिंग।
- vii) पम्प मरम्मत के मामले में नल कूल को खुला नहीं छोड़ना चाहिए।
- viii) कार्य के पूरे होने के पश्चात् कीचड के गडेड और नाली को भरना।
- ix) परित्यक्त वेध कूपों को नीचे से जीमन स्तर तक मिट्टी/रेत/पत्थर/कंकड/ड्रिल कटिंग आदि से भरना।
- x) खास जगह पर ड्रिलिंग प्रचालन के पूरे होने पर, ड्रिलिंग के शुरू होने से पहले जमीन के स्थिति का मरम्मत करना।
- xi) जिलाधिकारी को सत्यापित करने अधिकार होना चाहिए कि उपरोक्त निशा-निर्देश को अनुसरण ओर उचितनिगरानी किया जा रहा है, केन्द्रीय सरकार ऐजेंसियों/संबंधित राज्य द्वारा नल कूपों/वेध गडडों की स्थिति के विषय में जांच का ख्याल रखा जा रहा है।
- xii) जिला स्तर पर जिला/प्रखण्ड/ग्राम-वार ड्रिल्ड नल कूपों/वेध कूपों की स्थिति जिला/प्रखण्ड/ग्राम-वार अर्थात् उपयोग में कूपों की संख्या, परित्यक्त वेध कूप/खूले पायेगए नल कूपों की संख्या, परित्यक्त वेध कूपों/जमीनी स्तर तक उचितसे भरे गए नल कूपों और परित्यक्त वेध कूपों/जमीनी स्तर तक भरे गये नल कूपों को बनाए रखा जाता है।
ग्रामीण क्षेत्रों में उपरोक्त निगरानी कृषि विभाग से कार्यपालक और ग्राम सरपंच द्वारा किया जाता है। गहरी क्षेत्र के मामले में, उपरोक्त निगरानी कनिष्ठ अभियंता और संबंधित भूजल विभाग से कार्यपालक/लोक स्वास्थ्य/नगर निगम आदि द्वारा किया जाता है।
- xiii) यदि कोई स्तर पर परित्यक्त वेध कूप/नल कूप है, तो संबंधित भूजल विभाग/लोक स्वास्थ्य/नगर निगम/निजी ठेकेदार आदि से एक प्रमाण पत्र पूर्व कथित ऐजेंसी द्वारा लेनी चाहिए कि परित्यक्त वेध कूल और नल कूप उचितरूप से जमीन स्तर तक भरा गया। संबंधित विभाग/ऐजेंसी के कार्यपालक द्वारा बिना सोचे समझे जांच किया जाना है। उपरोक्त ऐसी सभी आंकडों की सूचना राज्य के प्रखण्ड विकास कार्यालय/जिला अधिकारी के पास उपलब्ध होनी है।

हमें सूचना दिया गया कि दिनांक 11 फरवरी, 2010 के पहले आदेश का अंतिम पैराग्राफ से संबंधित पब्लिसिटी का विधिवत अनुपालन किया गया है।

उपरोक्त के अधिन, रिट याचिका का निपटारा किया गया है।

.....सीजेआई

[एस.एच.कपाडिया]

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के.एस. राधाकृष्णन

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स्वतंत्र कुमार

नई दिल्ली,

06 अगस्त, 2010

अनुलग्नक-VIII

सीजीडब्ल्यूए द्वारा राज्यों/संघीय प्रदेशों की सूची जहां भूजल निकर्षण नियंत्रित किया जाता है-

1. अंडमान और निकोबार
2. असम
3. अरुणाचल प्रदेश
4. बिहार
5. छत्तीसगढ़
6. दादर और नगर हवेली और दमन और द्वीव
7. गुजरात
8. हरियाणा
9. झारखंड
10. मध्य प्रदेश
11. महाराष्ट्र
12. मणीपुर
13. मेघालय
14. मिजोरम
15. नागालैंड
16. ओडिशा
17. पंजाब
18. राजस्थान
19. सिक्किम
20. त्रिपुरा
21. उत्तर प्रदेश
22. उत्तराखंड
23. आंध्र प्रदेश (केवल खनन परियोजनाएं)
24. तेलंगाना (केवल खनन परियोजनाएं)

अनुलग्नक-IX

प्रयुक्त तकनीकी शब्दों के शब्दावली

- 1) **सुरक्षित क्षेत्र:** सीजीडब्ल्यूबी और राज्य भूजल संगठनों द्वारा संयुक्त रूप से किए गये नवीनतक भूजल संसाधनों के आकलन के आधार पर भूजल संसाधनों की दृष्टिकोण से सुरक्षित के रूप में वर्गीकृत किया गया है। एनओसीएपी और सीजीडब्ल्यूबी के वेबसाइट पर विवरण उपलब्ध है।
- 2) **अर्द्ध-नाजुक क्षेत्र:** सीजीडब्ल्यूबी और राज्य भूजल संगठनों द्वारा संयुक्त रूप से किए गये नवीनतम भूजल संसाधनों के आकलन के आधार पर भूजल संसाधनों की दृष्टिकोण और सीजीडब्ल्यूबी के वेबसाइट पर विवरण उपलब्ध है।
- 3) **नाजुक क्षेत्र:** सीजीडब्ल्यूबी और राज्य भूजल संगठनों द्वारा संयुक्त रूप से किये गये नवीनतम भूजल संसाधनों के आकलन के आधार पर भूजल संसाधनों की दृष्टिकोण से नाजुक के रूप में वर्गीकृत किया गया है। एनओसीएपी और सीजीडब्ल्यूबी के वेबसाइट पर विवरण उपलब्ध है।
- 4) **अतिदोहित क्षेत्र:** सीजीडब्ल्यूबी और राज्य भूजल संगठनों द्वारा संयुक्त रूप से किये गये नवीनतम दृष्टिकोण से अतिदोहित के रूप में वर्गीकृत किया गया है। एनओसीएपी और सीजीडब्ल्यूबी के वेबसाइट पर विवरण उपलब्ध है।
- 5) **जलभृत:** भूवैज्ञानिक संरचना भूजल संचारण और भंडारण के लिए सक्षम है।
- 6) **गहरा जलभृत:** बहुधा जलभृत प्रणाली के क्षेत्र में ऊपर वाले जलभृत के नीचे जलभृत घटित हुई।
- 7) **कुंआ:** भूजल के निष्कर्षण के लिए उपयोग किया जाने वाला कोई भी ढांचा, जिसमें खुले कुएं, खोदे गए कुएं, बोरवेल, खोदने वाले कुएं, नल कूल, फिल्टर प्वाइंट, कलेक्टर कुएं, घुसपैठ गैलरियां, रिचार्ज कुएं या उनके किसी भी संयोजन या विविधताएं शामिल हैं।
- 8) **सरकारी ऐजेंसी:** केन्द्रीय या राज्य सरकार का निकाय हो सकता है।
- 9) **आपूर्तिकर्ता:** सरकार/सरकार ने जल आपूर्ति ऐजेंसी को मंजूरी दी।
- 10) **खनन:** खनन के पश्चात् परित्यक्त क्षेत्र या क्षेत्र जहां खनन गतिविधियां चल रही हैं।
- 11) **गैर कानूनी भूजल निष्कर्षण संरचना:** केन्द्रीय जल प्राधिकरण से ठोस एनओसी के बिना भूजल को निकालने के लिए प्रयोग किया जा रहा है जो कोई ऊर्जावान निष्कर्षण संरचना है अर्थात् डगवेल, नलकूप, वैध कूप।
- 12) **वर्षाजल संचयन:** भूजल के रिचार्ज के लिए या भविष्य के उपयोग के लिए रूफ-टॉप संचयन को शामिल करते हुए सूक्ष्म जल विभाजक पैमाने पर वर्षाजल के भंडारण और जमाव की प्रणाली और तकनीक।
- 13) **खनन परियोजना:** परियोजना जो खनन गतिविधि को शामिल करती है या तो खुली कास्ट या भूमिगत या दोनों।
- 14) **भूजल प्रारूप:** भूजल निकासी का अपेक्षित मात्रा।
- 15) **लवणीय जल:** 25° से. पर 2500M साइमेन्स/से.मी. की अधिकता में लवणता वाला जल युक्त जल।
- 16) **वाटर टेबल इंटरसेक्शन:** खनन या अन्य गतिविधियों के कारण ऑवर लेईंग सामग्री की खुदाई पर जल वाटर टेबल इंटरसेक्शन।
- 17) **पेय और घरेलू उपयोग:** पेय और घरेलू उपयोग के अलावा, यह श्रेणी अस्पताल, होटल, मॉल और मल्टीप्लेक्स संस्थाने, कार्यालय बैंकेट हॉल, फायर स्टेशन, मेट्रो स्टेशन, रेलवे स्टेशन, हवाई अड्डा, बंदगाह, स्टेडियम आदि औद्योगिक प्रक्रिया के लिए आवश्यक जल नहीं बल्कि औद्योगिक के पेय जरूरतों को कवर करेगी।
- 18) **रिसाइकल/पुनः उपयोग:** विभिन्न उद्देश्यों के लिए ट्रिटेड वेस्ट जल का उपयोग/बहुल उपयोग के लिए जल को रखना।
- 19) **सरकारी विभाग:** केन्द्रीय या तो राज्य।
- 20) **नगरपालिका:** नगरपालिका, नगर निगमया अन्य दूसरे नाम द्वारा स्थानीय शहरी शासन का समान निकाय।

- 21) **भूजल** : पानी जो संतृप्ति के क्षेत्र में सतह के नीचे मौजूद है और कुओं या किसी अन्य माध्यम से निकाला जा सकता है या झरनों और नदियों में झरनों और आधार प्रवाह के रूप में उभरता है।
- 22) **बीजीएल** : जमीनी स्तर के नीचे।
- 23) **बीसएम** : बिलियन क्यूबिक मीटरस्।
- 24) **भूजल निष्कर्षण संरचना** : भूजल निकासी के लिए प्रयुक्त संरचना जैसे वैध कूल/नल कूप/डगवेल/डग कम बोर वेल/सुरंग कुआं।
- 25) **अवलोकन कुआं या पीजोमीटर** : एक बोरवेल/जल स्तर मापने के लिए केवल प्रयुक्त नल कूप/पाईजोमेट्रिक हेड और समय-समय पर पानी का नमूना लेने के किया जाता है, लेकिन भूजल पृथक्करण के लिए इसका उपयोग नहीं किया जाता है।
- 26) **वाटर ऑडिट** : पानी के उपयोग को कम करने और अक्सर अनावश्यक पानी के उपयोग पर पैसे बचाने के उद्देश्य से सरल या जटिल प्रणालियों में पानी की उपयोग की मात्रा निर्धारित करने की एक विधि।
- 27) **भूजल प्रदूषण** : यदि भूजल में किसी भी पैरामीटर की सांद्रता भारतीय मानक ब्यूरो द्वारा निर्धारित पेयजल की अधिकतम अनुज्ञेय सीमा से अधिक है।
- 28) **सहकारी समूह हाउसिंग सोसायटी/बिल्डर फ्लैट** : एक हाउसिंग सोसायटी एक आवासीय परिसर के भीतर घर के मालिकों द्वारा गठित एक सोसायटी है। गठित हाउसिंग सोसायटी को औपचारिक रूप से सहकारी समितियों के रजिस्ट्रार के साथ पंजीकृत होना चाहिए।
- 29) **केएलडी** - प्रतिदिन कि.मी
- 30) **ईसीजीडब्ल्यू** - अवैध भूजल निकासी के लिए पर्यावरण क्षतिपूर्ति।
- 31) **ईसीजीडब्ल्यूआर** - अवैध भूजल निकासी के लिए पर्यावरण क्षतिपूर्ति दर।

अनुलग्नक-X

उद्योगों द्वारा वार्षिक वाटर ऑडिट (स्रोत-(11))

वाटर ऑडिट उद्देश्यपूर्ण तरीके से वितरण प्रणाली के माध्यम से जल की निकासी या उपचार के स्थल से जल के प्रवाह को मापकर और इसका उपयोग किये जाने वाले क्षेत्रों में और अंततः छोड़ दिया जाता है। वाटर ऑडिट आयोजित करने में जलके संतुलन की गणना, जल का उपयोग और जल का बचत के तरीकों की पहचान करना शामिल है।

वाटर ऑडिट में प्रारंभिक जल सर्वेक्षण और विस्तृत जल लेखा शामिल है। प्रारंभिक जल सर्वेक्षण संयंत्र गतिविधियों, जल की खपत और जल निर्वहन पैटर्न और जल बिलिंग, दरों और जल उपकरण के बोर में पृष्ठभूमि की जानकारी एकत्र करने के लिए किया जाता है। उद्योग से एकत्र किए गए माध्यमिक आंकड़ों के विश्लेषण के बाद, विस्तृत जल ऑडिट आयोजित की जाती है, जिसमें निम्नलिखित चरण शामिल है:-

- साइट पर प्रशिक्षण और सुविधा प्रबंधक और कर्मियों के साथ चर्चा
- जल प्रणाली विश्लेषण
- आधारभूत जल मानचित्र का परिमाण
- दबाव और प्रवाह मीटर और विभिन्न अन्य उपकरणों का उपयोग करके निगरानी और माप
- अक्षमताओं और लीक की मात्रा
- पानी की गुणवत्ता लोड और निर्वहन की मात्रा

- प्रवाह और गुणवत्ता मानकों में परिवर्तनशीलता की मात्रा
- जल उपचार और पुनः उपयोग का प्रत्यक्ष उपयोग के लिए रणनीतियां।

एक विस्तृत जल संतुलन आखिरकर विकसित होता है। विभिन्न विभिन्न उपयोगकर्ता क्षेत्रों में पानी की गुणवत्ता की आवश्यकता गैप की गई है, जो रीसाइकल और पुनः उपयोग के अवसरों को विकसित करने में मदद करता है।

विस्तृत वाटर ऑडिट रिपोर्ट में निम्नलिखित शामिल हैं:

- पानी की खपत और अपशिष्ट जल उत्पादन पैटर्न
- विशिष्ट जल का उपयोग संरक्षण
- सुविधाका पूर्ण जल संतुलन
- जल के बचत के अवसर
- प्रस्तावों को लागू करने की विधि
- पूर्ण विवरण और आंकड़ें
- निवेश की आवश्यकता

जल संरक्षण के लिए उद्योग निम्नलिखित उपाय कर सकते हैं:-

- जल बजट के लिए मानदंड स्थापित करना
- जल के खपत को कम करने के लिए औद्योगिक प्रक्रिया का आधुनिकीकरण
- पुनः परिसंचारी शीतलन प्रणाली के साथ पुनर्चक्रित जल
- ओजोनेशन कूलिंग वाटर एप्रोच जिसके परिणाम स्वरूप पारंपरिक रासायनिक उपचार की तुलना में पांच गुना कमी हो सकती है।
- कुल प्लेनम फ्लश को समाप्त करके डी आयोनाइज्ड जल के पुनः उपयोग में कभी, निरंतर प्रवाह से एक आंतरिक प्रवाह प्रणाली में परिवर्तन करना और उपयोग पर नियंत्रण में सुधार करना
- बागवानी के लिए अपशिष्ट जल का उपयोग
- निपटान के मानदंडों का पालन करने के लिए अपशिष्टों का उचित प्रसंस्करण।

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 14th 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 15th 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 09th 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 13th 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 28th 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 11th 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 12th December, 2018;

AND WHEREAS, the aforesaid Hon'ble Tribunal vide order dated the 03rd January 2019 in the OA No. 176 of 2015 directed that the above mentioned notification dated the 12th 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 11th 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 16th March, 2020;

AND WHEREAS, the above said Hon'ble Tribunal vide order dated the 20th 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 12th 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 III: Measures to be adopted to ensure prevention from pollution in the plant premises of polluting industries/ projects.
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- 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.
- 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 14th 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 m³/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 m³/ 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 m³/ 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 m³/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 m³/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 m³/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 m³/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 m³/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 m³/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 m³/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 ³ /month)	Rate of ground water abstraction charges (Rs. per m ³)
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 m³.

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 m³)

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal				
		Up to 50m ³ /day	51 to <200 m ³ /day	200 to <1000 m ³ /day	1000 to <5000 m ³ /day	5000 m ³ /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 m³)

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal				
		Up to 50 m ³ /day	51 to <200 m ³ /day	200 to <1000 m ³ /day	1000 to <5000 m ³ /day	5000 m ³ /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 m³)

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m ³ /day	200 to <1000 m ³ /day	1000 to <5000 m ³ /day	5000 m ³ /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 m³)

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m ³ /day	200 to <1000 m ³ /day	1000 to <5000 m ³ /day	5000 m ³ /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 m³)

S.No.	Category of area ↓ Ground water use →	Quantum of ground water withdrawal			
		< 200 m ³ /day	200 to <1000 m ³ /day	1000 to <5000 m ³ /day	5000 m ³ /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 m³)

S.No.	Category of area Ground water use	Quantum of ground water withdrawal			
		< 200 m ³ /day	200 to <1000 m ³ /day	1000 to <5000 m ³ /day	5000 m ³ /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 ³ (in Rs.)
Safe	10
Semi Critical	20
Critical	25

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

Category	Rate per m ³ (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 m³/day and ECR_{GW} in Rs./ cum

15.1 Rates of Environmental Compensation:

Rates of Environmental Compensation (ECR_{GW}) for various types of users in different categories of assessment units are given in Table 15.1 to 15.3.

Table 15.1 : ECR_{GW} 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 _{GW}) in Rs./m ³			
	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 EC_{GW} shall not be less than Rs 1,00,000/-

Table 15.2: ECR_{GW} 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 _{GW}) in Rs./m ³			
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_{GW} shall not be less than Rs 1,00,000/-

Table 15.3: ECR_{GW} for Industrial units

S.No.	Area Category	Water Consumption (cum/day)			
		<200	200 to <1000	1000 to <5000	5000 & above
		Environmental Compensation Rate (ECR _{GW}) in Rs./m ³			
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_{GW} 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

12.	Cinemas, concert halls and theatres and multiplex	5 per seat	10 per seat	15 per seat
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

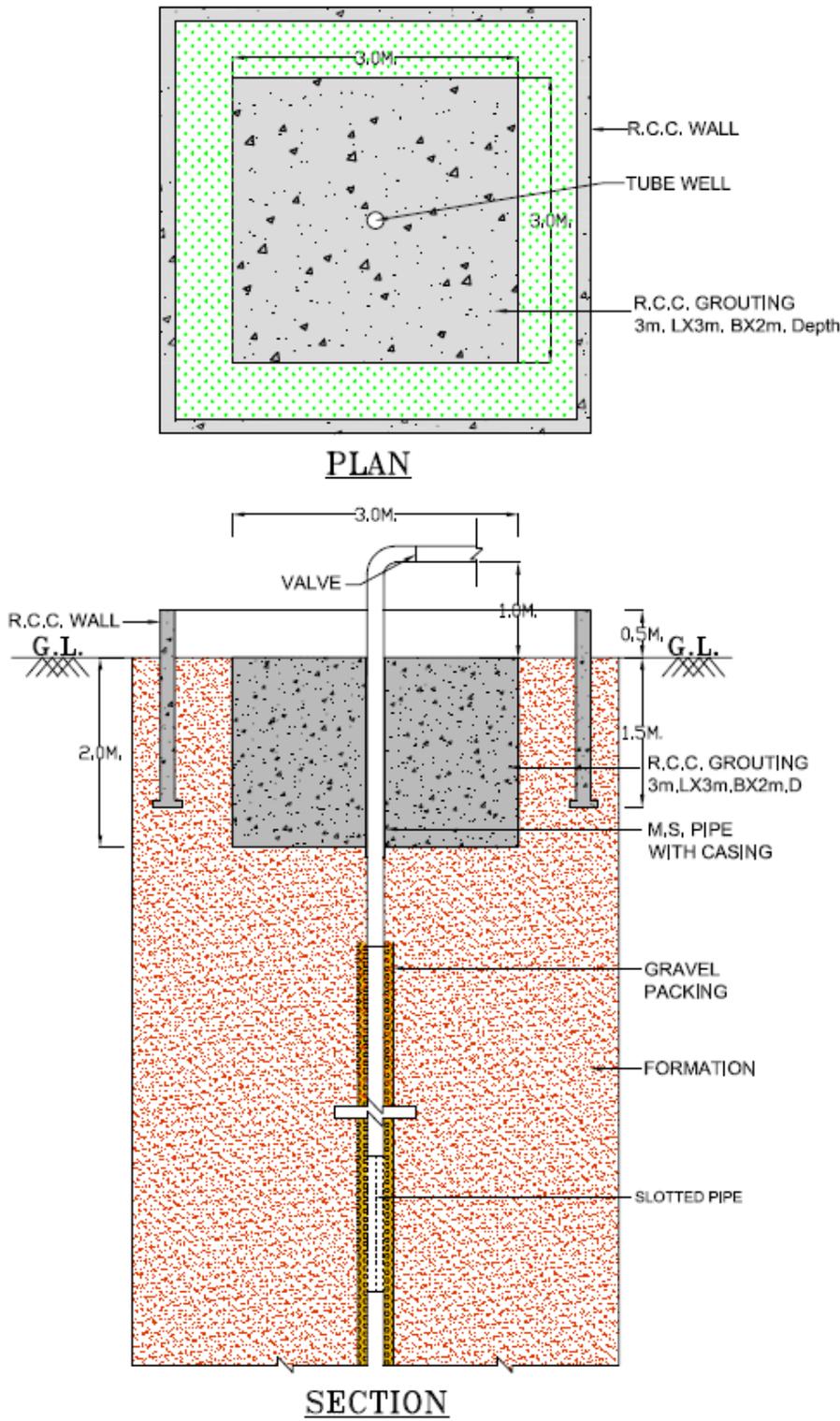
Measures to be adopted to ensure prevention from pollution in the plant premises of polluting industries/ projects

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.

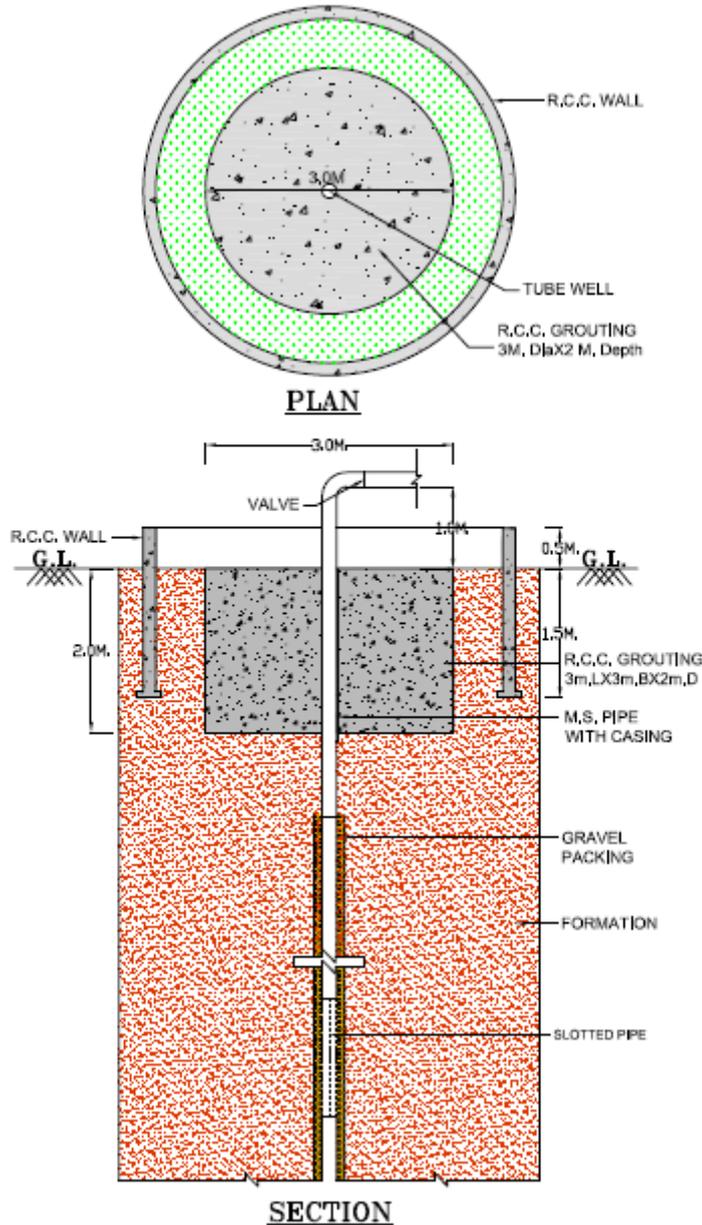
1. No tube well/ bore well / dug well should be constructed in the vicinity of the processing unit. Tube well/ bore well should be constructed at the place which is hygienically maintained.
2. Only Mild Steel pipe should be used for assembly/ casing and PVC (Poly Vinyl Chloride) or similar pipes should 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



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.

.....CJL.
[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 μ siemens/cm at 25⁰C.
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_{GW}** - Environmental compensation for drawing illegal ground water.
31. **EC_{GWR}** - 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.



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जल शक्ति मंत्रालय

(जल संसाधन, नदी विकास और गंगा संरक्षण विभाग)

(केंद्रीय भूमिजल प्राधिकरण)

अधिसूचना

नई दिल्ली, 29 मार्च, 2023

का.आ. 1509(अ).—पर्यावरण (संरक्षण) अधिनियम, 1986 (1986 का 29) की धारा 5 के साथ पठित धारा 3 की उप-धारा (3) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए जल संसाधन, नदी विकास और गंगा संरक्षण विभाग एतद द्वारा भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में अधिसूचना संख्या एस.ओ. 3289 (अ) 24 सितंबर, 2020, में भूजल के निष्कर्षण को विनियमित और नियंत्रित करने के लिए प्रकाशित दिशानिर्देशों में निम्नलिखित संशोधन करता है अर्थात्:-

उक्त अधिसूचना में अनुसूची के लिए अनुसूची में निम्नलिखित परिवर्तनों को प्रतिस्थापित/जोड़ा जाएगा, अर्थात्:-

"अनुसूची

1. भारत में भूजल निकासी को विनियमित और नियंत्रित करने के लिए दिशानिर्देश, 2020 में-

(क) इंडेक्स में मद संख्या 16.0 में, "दंड का प्रावधान" शब्दों के लिए "एनओसी में सुधार/संशोधन के लिए दंड और शुल्क का प्रावधान" शब्दों को प्रतिस्थापित किया जाएगा।

(ख) इंडेक्स में, अनुलग्नक में, "अनुबंध VI: आधारभूत परियोजनाओं की सांकेतिक सूची", शब्दों के स्थान पर, "अनुबंध VI: स्थान विशिष्ट आधारभूत परियोजनाओं की सांकेतिक सूची" शब्दों को प्रतिस्थापित किया जाएगा।

(ग) इंडेक्स में, अनुलग्नक में, "अनुबंध X: उद्योगों द्वारा वार्षिक जल लेखा परीक्षा", शब्दों के स्थान पर, "अनुबंध X: उद्योगों द्वारा जल लेखा परीक्षा" शब्दों को, प्रतिस्थापित किया जाएगा।

2. उक्त दिशानिर्देशों में पैरा 1.0 में, खंड (v) के बाद, खंड (vi), (vii) को जोड़ा जाएगा, अर्थात्: -

"(vi) सभी आकलन इकाइयों में केवल पीने/घरेलू प्रयोजनों के लिए 5 घन मीटर/दिन तक भूजल की निकासी करने वाले सभी उद्योग/खनन परियोजनाएं/अवसंरचना परियोजनाएं।

(vii) आवासीय अपार्टमेंट और ग्रुप हाउसिंग सोसाइटी:

(क) दिशानिर्देशों के पैरा 2.0 में उल्लिखित शर्तों के अधीन पेय जल और घरेलू उपयोग के लिए 20 घन मीटर /दिन तक भूजल की निकासी।

(ख) सरकारी योजनाओं के तहत आर्थिक रूप से कमजोर वर्गों (ईडब्ल्यूएस) के लिए आवास इकाइयां"।

3. उक्त दिशा-निर्देशों के पैरा 2.0 में:-

(i). उप-पैरा 2 जोड़ा जाएगा अर्थात्:-

" सभी आवासीय अपार्टमेंट और ग्रुप हाउसिंग सोसाइटी के लिए सभी निष्कर्षण संरचना (ओं) में डिजिटल जल प्रवाह मीटर (बीआईएस / आईएस मानकों के अनुरूप) की संस्थापना अनिवार्य होगी। ऐसे सभी आवासीय अपार्टमेंट और ग्रुप हाउसिंग सोसाइटी, जिनमें स्विमिंग पूल हैं और भूजल की निकासी की जा रही है, के लिए अनापत्ति प्रमाण पत्र प्राप्त करना अनिवार्य होगा।"

(ii). खंड (घ) के लिए निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्: -

"घ) खारे भूजल के निष्कर्षण के मामले में, किसी भी नेशनल अक्रेडीशन बोर्ड फॉर टेस्टिंग एंड कैलिब्रेशन लैबोरेटरी (एनएबीएल) से मान्यता प्राप्त प्रयोगशाला या सरकार द्वारा स्वीकृत प्रयोगशाला से मौजूदा बोरवेल / नलकूप / खोदे गए कुएं का भूजल गुणवत्ता डेटा।

नोट: नई परियोजनाओं के मामले में खारे भूजल की निकासी के लिए उपर्युक्त प्रयोगशालाओं से निकटवर्ती मौजूदा कुओं के जल की गुणवत्ता के आंकड़े/ की रिपोर्ट प्रस्तुत की जाए।

(iii) खंड (ङ) के लिए निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"ङ) आवेदक द्वारा सरकारी एजेंसी को प्रस्तुत वर्षा जल संचयन योजना की प्रति अथवा आवास और शहरी मामलों के मंत्रालय, भारत सरकार द्वारा जारी मॉडल बिलडिंग उपनियमों के अनुसार परियोजना परिसर में वर्षा जल संचयन/पुनर्भरण के लिए प्रस्ताव।"

(iv). पैरा 2.0 में, खंड (ड) के बाद, एक और खंड (च) अंतःस्थापित / जोड़ा जाएगा, अर्थात्:-

"च) सभी नई परियोजनाओं के लिए, परियोजना के पूरा होने की तारीख के उल्लेख सहित एक स्वतः घोषणा/शपथ पत्र (विधिवत नोटरीकृत) अनिवार्य होगा।"

4. पैरा 4.0 में उप पैरा 3 के स्थान पर निम्नलिखित उप पैरा प्रतिस्थापित किया जाएगा, अर्थात्:-

"भूजल का निष्कर्षण करने वाली वाणिज्यिक संस्थाओं को प्रासंगिक धाराओं में उल्लिखित अनुसार जल के उपयोग के लेखापरीक्षा सहित ऑनलाइन जल लेखापरीक्षा रिपोर्ट जमा करनी होगी। सीजीडब्ल्यूए/राज्य भूजल प्राधिकरण (एसजीडब्ल्यूए) ऐसी सभी ऑडिट रिपोर्ट को ऑनलाइन प्रकाशित करेगा।

5. पैरा 4.1 में:-

(i). खंड (iii) के स्थान पर निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(iii) 100 घनमीटर/दिन से अधिक भूजल का निष्कर्षण करने वाले सभी उद्योगों को सीजीडब्ल्यूए द्वारा अनुमोदित एजेंसियों के प्रमाणित लेखा परीक्षकों के माध्यम से द्विवार्षिक (दो वर्ष में एक बार) जल लेखा परीक्षा करनी होगी और इसके पूरा होने के तीन माह के भीतर सीजीडब्ल्यूए को लेखापरीक्षा रिपोर्ट प्रस्तुत करनी होगी। पहले दी गई रिपोर्टों के अनुपालन की जाँच एक वर्ष के बाद प्रमाणित जल लेखा परीक्षकों द्वारा की जाए और इस संबंध में रिपोर्ट सीजीडब्ल्यूए के साथ साझा की जाए।

ऐसे सभी उद्योगों को उपयुक्त उपायों के माध्यम से अगले तीन वर्षों में अपने भूजल के उपयोग में कम से कम 20% तक कटौती करनी होगी।"

(ii) खंड (iv) के लिए निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(iv). औद्योगिक क्षेत्रों (केंद्रीय/राज्य सरकार द्वारा निर्दिष्ट या अधिसूचित) में, केंद्रीय भूमि जल बोर्ड (सीजीडब्ल्यूबी) स्थानीय जल-भूवैज्ञानिक स्थितियों के अनुसार आवश्यकता-आधारित पीजोमीटर का निर्माण करेगा और जल स्तर की मॉनिटरिंग करेगा।

ऊपर उल्लिखित औद्योगिक क्षेत्रों के अतिरिक्त हार्ड रॉक एक्विफर प्रकार के लिए 100 घन मीटर /दिन से अधिक और एल्यूवियम एक्विफर प्रकार के लिए 500 घन मीटर /दिन से अधिक भूजल की निकासी के लिए परिसर के भीतर प्रेक्षण कुओं/(पीजोमीटर) का निर्माण और धारा 14 में उल्लिखित उपयुक्त जल स्तर मॉनिटरिंग तंत्र की स्थापना उद्योगों/अवसंरचना निकासी / निकासी के प्रस्ताव के लिए अनिवार्य होगी। इन क्षेत्रों में जल स्तर की मॉनिटरिंग परियोजना प्रस्तावकों द्वारा की जाएगी। यदि टैप किया गया जलभृत कठोर चट्टानी है तो निष्कर्षण संरचना और पीजोमीटर के बीच न्यूनतम दूरी 15 मीटर होगी और यदि जलभृत जलोढ है तो यह दूरी 50 मीटर होगी। पीजोमीटर में टैप की गई गहराई और जलभृत क्षेत्र पम्पिंग कुएं/कुओं के समान होंगे। पीजोमीटर के डिजाइन और निर्माण के लिए विस्तृत दिशा-निर्देश अनुबंध II में दिए गए हैं। वेब पोर्टल के माध्यम से सीजीडब्ल्यूए को मासिक जल स्तर डेटा प्रस्तुत किया जाएगा।"

(iii) खंड (ग) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(ग). खारे भूजल के निष्कर्षण के मामले में, किसी भी एनएवीएल मान्यता प्राप्त प्रयोगशाला या सरकार द्वारा अनुमोदित प्रयोगशाला से मौजूदा बोरवेल/ट्यूबवेल/कुएं के भूजल गुणवत्ता डेटा।

नोट: नई परियोजनाओं के मामले में खारे भूजल की निकासी के लिए उपर्युक्त प्रयोगशालाओं से जल की गुणवत्ता के आंकड़े/निकटवर्ती मौजूदा कुओं की रिपोर्ट प्रस्तुत की जा सकती है।

(iv) खंड (घ) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(घ) सभी नई परियोजनाओं के लिए नई स्थापना/प्रचालन के आरंभ के प्रमाण के रूप में दस्तावेज अर्थात् स्थापना के लिए सहमति/पर्यावरणीय मंजूरी/किसी वैधानिक एजेंसी से कोई अन्य दस्तावेज।

(v) खंड (ङ) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(ङ) आवेदक द्वारा सरकारी एजेंसी को प्रस्तुत वर्षा जल संचयन योजना की प्रति अथवा आवास और शहरी मामलों के मंत्रालय, भारत सरकार द्वारा जारी प्रचलित मॉडल बिल्डिंग उपनियमों के अनुसार परियोजना परिसर में वर्षा जल संचयन / पुनर्भरण का प्रस्ताव।

(vi) खंड (च) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(च)प्रभाव आकलन रिपोर्ट: अति-दोहित, गंभीर और अर्ध-महत्वपूर्ण क्षेत्रों में 100 घन मीटर/दिन से अधिक और गैर-जलोढ़ आच्छादित क्षेत्रों में 500 घन मीटर/दिन से अधिक और सुरक्षित आकलन इकाइयों में जलोढ़ क्षेत्रों में 2000 घन मीटर/दिन से अधिक भूजल निकालने वाली सभी परियोजनाओं को अनिवार्य रूप से मान्यता प्राप्त सलाहकारों द्वारा तैयार परियोजना स्थल के आसपास के 5 किमी त्रिज्या क्षेत्र को शामिल करते हुए भूजल प्रणाली पर मौजूदा / प्रस्तावित भूजल निकासी के प्रभाव मूल्यांकन रिपोर्ट और भूजल मॉडलिंग अध्ययन को अनिवार्य रूप से प्रस्तुत करना होगा। रिपोर्ट का प्रपत्र अनुबंध IV में दिया गया है।"

6. पैरा 4.2 में,

(i). खंड (ii) के स्थान पर निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"ii) 100 घन मीटर/दिन से अधिक भूजल निकालने/प्रस्तावित करने वाले खानों के लिए के लिए मासिक भूजल स्तर की मॉनिटरिंग के लिए परिसर में परिधि के साथ प्रेक्षण कुएं (पीजोमीटर) का निर्माण अनिवार्य होगा। पीजोमीटर में टैप की गई गहराई और जलभृत क्षेत्र बफर क्षेत्र में सिंचाई/ पेय जल के लिए उपयोग किए जाने वाले जलभृत के अनुरूप होगा। पीजोमीटर के डिजाइन और निर्माण के लिए विस्तृत दिशा-निर्देश अनुबंध II में दिए गए हैं।"

(ii). खंड (ख) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्: -

"(ख) आवेदक द्वारा सरकारी एजेंसी को प्रस्तुत वर्षा जल संचयन योजना की प्रति अथवा आवास और शहरी मामलों के मंत्रालय, भारत सरकार द्वारा जारी प्रचलित मॉडल भवन उपनियमों के अनुसार परियोजना परिसर में वर्षा जल संचयन / पुनर्भरण के लिए प्रस्ताव अथवा जैसा कि खान के परिसर में व्यवहार्य है और जैसा कि सीजीडब्ल्यूए/राज्य एजेंसियों द्वारा अनुमोदित है।"

(iii). खंड (ग) के बाद, एक और खंड (घ) अंतःस्थापित किया जाएगा, अर्थात्:-

"(घ) सभी नई परियोजनाओं के लिए नई परियोजना/प्रचालन की शुरुआत के प्रमाण के रूप में दस्तावेज अर्थात् स्थापना के लिए सहमति/पर्यावरणीय मंजूरी/किसी वैधानिक एजेंसी से कोई अन्य दस्तावेज।"

7. पैरा 4.3 में:-

(i). उप पैरा 3 में, "आधारभूत परियोजनाओं की सांकेतिक सूची अनुलग्नक VI में दी गई है" शब्दों के स्थान पर, "पेय /घरेलू उपयोग के लिए भूजल की आवश्यकता वाले वाणिज्यिक आधारभूत परियोजनाओं को भी इस श्रेणी के अंतर्गत शामिल किया जाएगा"। इसके अतिरिक्त स्थान विशिष्ट आधारभूत परियोजनाओं की सांकेतिक सूची अनुबंध VI में दी गई है" को इसके बाद दिए गए संशोधित अनुबंध VI द्वारा प्रतिस्थापित किया जाएगा।

(ii). खंड (v) के बाद, एक और खंड (vi) जोड़ा जाएगा, अर्थात्:-

"(vi) सभी स्टेडियम, क्रिकेट मैदान और अन्य खेल मैदान/कोर्ट, गोल्फ कोर्स आदि भूजल के कृत्रिम पुनर्भरण/वर्षा जल संचयन के लिए उपयुक्त प्रणाली तंत्र का निर्माण/स्थापना करेंगे।

(iii). खंड (क) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(क) ऐसे मामलों में जहां डीवाटरिंग शामिल है, मान्यता प्राप्त सलाहकार द्वारा क्षेत्र में भूजल की स्थिति पर 5 किमी के दायरे में भूजल मॉडलिंग सहित प्रभाव आकलन रिपोर्ट प्रस्तुत करना, जिसमें पंपिंग की विस्तृत योजना, पंप किए गए जल के प्रस्तावित उपयोग और व्यापक भूजल व्यवस्था के प्रभाव का आकलन अनिवार्य होगा। इस रिपोर्ट में किसी भी प्रकार के महत्वपूर्ण पर्यावरणीय मुद्दों जैसे भूजल स्तर में गिरावट, भूस्खलन आदि को दूर करने के लिए पर्यावरणीय जोखिमों और प्रस्तावित प्रबंधन कार्यनीतियों को उजागर करना होगा।

(iv). खंड (ड) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्: -

"(ड) आवेदक द्वारा सरकारी एजेंसी को प्रस्तुत वर्षा जल संचयन योजना की प्रति या आवास और शहरी मामलों के मंत्रालय, भारत सरकार द्वारा जारी प्रचलित मॉडल बिल्डिंग उपनियमों के अनुसार परियोजना परिसर में वर्षा जल संचयन / पुनर्भरण के लिए प्रस्ताव।"

(v). खंड (छ) के बाद, एक और खंड (ज) अंतःस्थापित किया जाएगा, अर्थात्: -

"(छ) सभी नई परियोजनाओं के लिए भवन योजना अनुमोदन या किसी वैधानिक एजेंसी से नई परियोजना के प्रमाण के रूप में कोई अन्य प्रासंगिक दस्तावेज।"

8. पैरा 5.1 के तहत खंड 1 में, तालिका 5.1 के स्थान पर, निम्नलिखित तालिका 5.1 को प्रतिस्थापित किया जाएगा, अर्थात्:

तालिका 5.1 पेय और घरेलू उपयोग के लिए भूजल निकासी शुल्क

भूजल निकासी की मात्रा (घन मीटर /दिन)	भूजल निकासी शुल्क की दर (रु. प्रति घन मीटर)
0-25	कोई शुल्क नहीं
> 25- < 200	1.00
200 और अधिक	2.00

पेय /घरेलू उपयोग के लिए जल की आपूर्ति करने वाली सरकारी/सरकार द्वारा अधिकृत एजेंसियां तथा सरकारी आधारभूत परियोजनाओं को भूजल निकासी की मात्रा पर विचार किए बिना भूजल निकासी शुल्क @ 0.50 रुपये प्रति घन मीटर का भुगतान करना होगा।"

9. पैरा 6.0, उप पैरा 2 में निम्नलिखित को प्रतिस्थापित किया जाएगा, अर्थात्:-

"ऐसे सभी उपयोगकर्ता जिनके द्वारा भूजल की निकासी की जा रही है और निजी टैंकों के माध्यम से थोक जल आपूर्ति के उद्देश्य से इसका उपयोग किया जा रहा है, उन्हें सीजीडब्ल्यूए द्वारा समय-समय पर जारी और अद्यतन किए गए थोक जल आपूर्तिकर्ताओं के दिशानिर्देशों के अनुसार अनिवार्य रूप से भू-जल निकासी के लिए अनापत्ति प्रमाण पत्र प्राप्त करना होगा।"

10. पैरा 7.0, उप पैरा 3 में निम्नलिखित को प्रतिस्थापित किया जाएगा, अर्थात्:-

"खारे भूजल का निष्कर्षण सीजीडब्ल्यूए द्वारा खारे भूजल निकासी के लिए समय-समय पर जारी और अद्यतन दिशानिर्देशों के अनुसार होगा।"

11. पैरा 8.0 में,

उप पैरा 2 में निम्नलिखित को प्रतिस्थापित किया जाएगा, अर्थात्:-

"सीमांकित आर्द्र-भूमि क्षेत्रों की परिधि से 500 मीटर के भीतर आने वाली परियोजनाओं को अनिवार्य रूप से विस्तृत प्रस्ताव प्रस्तुत करना होगा, जिसमें यह उल्लेख किया गया हो कि परियोजना प्रस्तावक द्वारा भूजल निकासी से किसी भी संरक्षित आर्द्रभूमि क्षेत्र पर विपरीत प्रभाव नहीं पड़ रहा है। इसके अतिरिक्त सीजीडब्ल्यूए से अनुमति लेने से पूर्व परियोजनाओं को क्षेत्र में अपनी परियोजनाओं को स्थापित करने के लिए उपयुक्त आर्द्रभूमि प्राधिकरण/राज्य प्राधिकरण या किसी अन्य उपयुक्त स्थानीय सरकारी प्राधिकरण से सहमति/अनुमोदन लेना होगा।"

12. पैरा 9.0 में:-

(i). खंड (i) के स्थान पर निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"(i). अनापत्ति प्रमाण पत्र का आवेदन करने वाले सभी उपयोगकर्ताओं के लिए एबस्ट्रेक्शन स्ट्रक्चर में टेलीमेट्री सिस्टम सहित टैम्पर प्रूफ डिजिटल वाटर फ्लो मीटर/प्री पेड मीटर (एस) (बीआईएस/आईएस मानकों के अनुरूप) की संस्थापना अनिवार्य होगी और अनापत्ति प्रमाण पत्र प्रदान करने के 30 दिनों के भीतर इसकी संस्थापना के विषय में वेब-पोर्टल के माध्यम से सीजीडब्ल्यूए को सूचित किया जाए।"

यदि भूजल निष्कर्षण एक ही परिसर के भीतर कई बोर/नलकूपों से होता है, तो टैम्पर-प्रूफ डिजिटल जल प्रवाह मीटर/ टेलीमेट्री के साथ प्री पेड मीटर को सामान्य आउटलेट बिंदु पर स्थापित किया जा सकता है।

(ii). खंड (iv) के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"iv. प्रस्तावक द्वारा धारा 5 में दी गई दरों के अनुसार भूजल निकासी की मात्रा के आधार पर भूजल निकासी / बहाली शुल्क का भुगतान किया जाएगा।

(iii). खंड (v) के स्थान पर निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्:-

"v. भूजल स्तर की मॉनिटरिंग के उद्देश्य से निर्मित प्रेक्षण कुएं (पीजोमीटर) धारा 14 के अनुसार संस्थापित किए जाएंगे। जल स्तर के आंकड़े वेब पोर्टल के माध्यम से सीजीडब्ल्यूए को उपलब्ध कराए जाएंगे। पीजोमीटर के निर्माण के लिए विस्तृत दिशा-निर्देश अनुबंध-II में दिए गए हैं।"

(iv). खंड IX के लिए, निम्नलिखित खंड को प्रतिस्थापित किया जाएगा, अर्थात्: -

"ix. स्वामित्व में परिवर्तन के मामले में, परिसर के नए मालिक को परिसर का कब्जा लेने के 60 दिनों के भीतर दस्तावेजी प्रमाण के साथ अनापत्ति प्रमाण पत्र में आवश्यक परिवर्तन शामिल करने के लिए आवेदन करना होगा।"

13. पैरा 14.0 में,

(i). उप पैरा 1 के स्थान पर निम्नलिखित को प्रतिस्थापित किया जाएगा, अर्थात्:-

"इसके पश्चात उल्लिखित औद्योगिक क्षेत्रों के अतिरिक्त, सभी परियोजना प्रस्तावकों (हार्ड रॉक एक्विफर प्रकार के लिए 100 घन मीटर /दिन से अधिक और एल्यूवियम एक्विफर प्रकार के लिए 500 घन मीटर /दिन से अधिक भूजल की निकासी के लिए) को अनिवार्य रूप से भूजल स्तर की मॉनिटरिंग के लिए अपने परिसर के भीतर पीजोमीटर (प्रेक्षण कुएँ) का निर्माण करना होगा। इसके अतिरिक्त औद्योगिक क्षेत्रों में (केंद्र / राज्य सरकार द्वारा निर्दिष्ट या अधिसूचित), केंद्रीय भूमि जल बोर्ड (सीजीडब्ल्यूबी) स्थानीय भूगर्भीय स्थितियों और जल स्तर की मॉनिटरिंग के अनुसार आवश्यकता-आधारित पीजोमीटर का निर्माण करेगा। परियोजना क्षेत्र में भूजल स्तर की नियमित मॉनिटरिंग को सुनिश्चित करने के उद्देश्य से ऐसा अनुपालन तंत्र बनाया गया है। इस संबंध में परियोजना प्रस्तावकों द्वारा पीजोमीटर के माध्यम से जल स्तर की मॉनिटरिंग के लिए आवश्यक मानदंड तालिका 14.1 में दिए गए हैं।"

(ii). तालिका 14.1 के लिए निम्नलिखित तालिका को प्रतिस्थापित किया जाएगा, अर्थात्: -

तालिका 14.1 डिजिटल वाटर लेवल रिकॉर्डर (डीडब्ल्यूएलआर)और टेलीमेट्री के साथ निर्माण किए जाने वाले पीजोमीटर की संख्या और जल स्तर मॉनिटरिंग तंत्र के प्रकार		
क्र. सं .	भूजल निकासी की मात्रा (घन मीटर /दिन)	पीजोमीटर की संख्या (डीडब्ल्यूएलआर और टेलीमेट्री की सहित)
1.	0-100	0
2.	>100 (औद्योगिक क्षेत्रों के अतिरिक्त में हार्ड रॉक एक्विफर)	1
3.	>500 (औद्योगिक क्षेत्रों के अतिरिक्त में जलोढ जलभृत)	1

14. पैरा 16.0 में तालिका 16.1 में,

(i). क्रम संख्या 2, अर्थात् "गैर प्रकटीकरण / अतिरिक्त भूजल निष्कर्षण संरचनाओं का निर्माण

ए) गैर-कार्यात्मक संरचनाएं।

बी) अप्रचलित / परित्यक्त

नोट: दी गई दरें गैर-कार्यात्मक/अप्रचलित /परित्यक्त संरचनाओं के लिए हैं। समेकित जुमाने के आंकड़े के लिए इसे ऐसी कुल संरचनाओं से गुणा किया जाएगा ।

को निम्नलिखित से प्रतिस्थापित किया जाएगा

"अतिरिक्त भूजल निष्कर्षण संरचनाओं का गैर-प्रकटीकरण/निर्माण

क) कार्यात्मक / गैर-कार्यात्मक संरचनाएं।

बी) अप्रचलित / परित्यक्त

नोट: दी गई दरें कार्यात्मक/गैर-कार्यात्मक/अप्रचलित /परित्यक्त संरचनाओं के लिए हैं। समेकित जुमाने के आंकड़े के लिए इसे ऐसी कुल संरचनाओं से गुणा किया जाएगा ।

(ii). क्रम संख्या 7 के तहत, "पुनर्भरण संरचनाओं का रखरखाव न होना" शब्दों के स्थान पर "जल संरक्षण संरचनाओं/पुनर्भरण संरचनाओं का रखरखाव न होना" शब्दों को प्रतिस्थापित किया जाएगा।

(iii). पैरा 16.0 में उप पैरा 2 को प्रतिस्थापित किया जाएगा, अर्थात्:

" नए एनओसी / एनओसी के नवीनीकरण के लिए आवेदन शुल्क समय-समय पर सीजीडब्ल्यूए द्वारा निर्धारित दरों के अनुसार लिया जाएगा और इसे आधिकारिक वेब पोर्टल के माध्यम से सूचित किया जाएगा। मौजूदा जारी किए गए अनापत्ति प्रमाण पत्र में सुधार/संशोधन के लिए भी शुल्क देय होगा।".

(iv). तालिका 16.2 में,

i. तालिका के शीर्षक/शीर्षक के अंतर्गत, "प्रस्तावित शुल्क" शब्दों के स्थान पर "शुल्क" शब्द प्रतिस्थापित किया जाएगा ।

ii. क्रम. संख्या 1 (अर्थात् शब्द "लागू शुल्क सहित रिचार्ज मात्रा में परिवर्तन") का लोप किया जाएगा।

15. अनुलग्नक II में बुलेट बिंदु 1 के स्थान पर निम्नलिखित बुलेट बिंदु प्रतिस्थापित किया जाएगा, अर्थात्:-

यदि टैप किए जाने वाला जलभृत कठोर चट्टान है तो भूजल निकाले जाने वाले पम्पिंग कुएं से पीज़ोमीटर को 15 मीटर की न्यूनतम दूरी पर संस्थापित / निर्मित किया जाना है। यदि जलभृत जलोढ है तो यह दूरी 50 मीटर होगी। पीज़ोमीटर का व्यास लगभग चार इंच से छह इंच होना चाहिए।

16. उक्त दिशा-निर्देशों में, अनुलग्नक VI को निम्नलिखित अनुसार प्रतिस्थापित किया जाएगा:

"अनुबंध VI

स्थान विशिष्ट अवसंरचना परियोजनाओं की सांकेतिक सूची

क्र. सं.	अवसंरचनात्मक परियोजनाएं
1.	विशेष आर्थिक क्षेत्र
2.	मेट्रो स्टेशन/रेलवे स्टेशन और बस डिपो
3.	हवाई अड्डे, बंदरगाह, लॉजीस्टिक, कार्गो और गोदाम

4.	हाईवे इंफ्रास्ट्रक्चर
5.	अग्निशमन केंद्र
6.	अस्पताल और नर्सिंग होम
7.	स्कूल, कॉलेज, विश्वविद्यालय, कोचिंग संस्थान, प्रशिक्षण केंद्र/कौशल विकास केंद्र सहित शैक्षणिक संस्थान

नोट:- भूजल उपयोग के लिए एनओसी की आवश्यकता में पेयजल/घरेलू उपयोग के लिए जल की आवश्यकता भी शामिल है।

17. उक्त दिशा-निर्देशों में अनुलग्नक VIII को निम्नलिखित अनुसार प्रतिस्थापित किया जाएगा:

"अनुबंध VIII

ऐसे राज्यों/केंद्र शासित प्रदेशों की सूची जहां केंद्रीय भूजल प्राधिकरण द्वारा भूजल निकासी का विनियमन किया जा रहा है

1.	अंडमान और निकोबार
2.	असम
3.	अरुणाचल प्रदेश
4.	बिहार
5.	छत्तीसगढ़
6.	दादरा और नगर हवेली एवं दमन और दीव
7.	गुजरात
8.	झारखंड
9.	मध्य प्रदेश
10.	महाराष्ट्र
11.	मणिपुर
12.	मेघालय
13.	मिजोरम
14.	नागालैंड
15.	ओडिशा
16.	राजस्थान
17.	सिक्किम
18.	त्रिपुरा
19.	उत्तराखंड

नोट: उपरोक्त सूची परिवर्तनशील है और इसमें किसी भी प्रकार के जोड़/लोप को सीजीडब्ल्यूए द्वारा अपने आधिकारिक वेब पोर्टल के माध्यम से राज्यों/संघ शासित प्रदेशों, परियोजना प्रस्तावकों सहित उद्योगों को सूचित किया जाएगा।

18. अनुलग्नक IX (प्रयुक्त तकनीकी शब्दों की शब्दावली) में क्रम संख्या 17 के तहत, "पेय और घरेलू उपयोग: पेय और घरेलू उपयोग के अलावा, यह श्रेणी अस्पताल, होटल, मॉल और मल्टीप्लेक्स, संस्थानों, कार्यालय, बैंकेट हॉल, फायर स्टेशन, मेट्रो स्टेशन, रेलवे स्टेशन, हवाई अड्डा, बंदरगाह, स्टेडियम आदि औद्योगिक प्रक्रिया के लिए आवश्यक जल नहीं बल्कि औद्योगिक के पेय जरूरतों को कवर करेगी" शब्दों के स्थान पर " पेय और घरेलू उपयोग: स्वच्छ उद्देश्यों यथा खाना पकाने, स्नान, सफाई/ धुलाई, स्वच्छता आदि सहित दैनिक घरेलू गतिविधियों के लिए आवश्यक जल। पेय और घरेलू उपयोग के अलावा, यह श्रेणी अस्पताल, होटल, मॉल और मल्टीप्लेक्स, संस्थानों, कार्यालय, बैंकेट हॉल, फायर स्टेशन, मेट्रो

स्टेशन, रेलवे स्टेशन, हवाई अड्डा, बंदरगाह, स्टेडियम आदि औद्योगिक प्रक्रिया के लिए आवश्यक जल नहीं बल्कि औद्योगिक के पेय जरूरतों को कवर करेगी" प्रतिस्थापित किया जाएगा।

19. अनुलग्नक X में, शीर्षक के अंतर्गत, "उद्योगों द्वारा वार्षिक वाटर ऑडिट (स्रोत-CII)" शब्दों के स्थान पर, "उद्योगों द्वारा जल ऑडिट" शब्दों को प्रतिस्थापित किया जाएगा। "

[फा. सं. 23014/29/2021-समन्वय अनुभाग-भाग(2)]

आशीष कुमार, निदेशक

नोट: 'भारत के भूजल निकासी को विनियमित और नियंत्रित करने के दिशानिर्देश' भारत के राजपत्र, असाधारण, भाग II, खंड 3, उप-खंड (ii) में एस.ओ. 3289 (ई) द्वारा दिनांक 24 सितंबर, 2020 को प्रकाशित किए गए थे।

MINISTRY OF JAL SHAKTI

(Department of Water Resources, River Development and Ganga Rejuvenation)

(CENTRAL GROUND WATER AUTHORITY)

NOTIFICATION

New Delhi, the 29th March, 2023

S.O. 1509(E).— In exercise of 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 makes the following amendments to the guidelines to regulate and control groundwater extraction in India, published in the Gazette of India, Extraordinary, Part II, section 3, sub-section (ii), vide Notification number S.O. 3289 (E) 24th September, 2020, namely:-

In the said notification, for the Schedule, the following changes in the Schedule shall be substituted/added, namely:-

“Schedule

1. In the Guidelines to regulate and control groundwater extraction in India, 2020 -

(a) in the Index, Item no. 16.0, for the words “Provisions of Penalty” the words “Provision of Penalty and Charges for correction/modifications in NOCs” shall be substituted.

(b) in the index, in the Annexures, for the words, “Annexure VI : Indicative list of Infrastructure projects”, the words, “Annexure VI : Indicative list of location specific Infrastructure projects” shall be substituted.

(c) in the index, in the Annexures, for the words, “Annexure X : Annual water audits by the industries” , the words, “Annexure X : Water audits by the industries” shall be substituted.

2. In the said guidelines, in the paragraph 1.0, after clause (v), clauses (vi),(vii) shall be added namely:-

“(vi) All industries/ mining projects/ infrastructure projects drawing ground water only for drinking/ domestic purposes up to 5 Cum /day in all assessment units.

(vii) Residential Apartments and Group Housing Societies:

(a) For drinking water and domestic uses, drawing ground water upto 20 m³/day subject to the conditions mentioned in Para 2.0 of the guidelines.

(b) Dwelling units for Economically Weaker Sections (EWS) under Government schemes.”.

3. In the said guidelines, in the paragraph 2.0:-

(i). Sub-para 2 shall be added namely:-

“Installation of digital water flow meter (conforming to BIS/ IS standards) in all abstraction structure(s) shall be mandatory for all Residential Apartments and Group Housing Societies. All Residential Apartments and Group Housing Societies having swimming pools drawing ground water shall be mandatorily required to seek No Objection Certificate.”

(ii). for the clause (d), the following clause shall be substituted, namely:-

“d) In case of saline ground water extraction, 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.

Note: In case of new projects, water quality data/report of nearby existing wells from above-mentioned laboratories may be submitted for saline ground water extraction.”.

(iii). for the clause (e), the following clause shall be substituted, namely:-

“e) Copy of Rain Water Harvesting Plan submitted to Government agency by the applicant or a proposal for rain water harvesting/ recharge in the project premises as per the prevailing Model Building Bye Laws issued by Ministry of Housing & Urban Affairs, Government of India.”.

(iv). in the paragraph 2.0, after the clause (e), one more clause (f), shall be inserted/added, namely:-

“f) For all New projects, a self declaration/ affidavit (duly notarized) indicating date of completion of project shall be required.”.

4. In the paragraph 4.0, for sub para 3, the following sub para shall be substituted, namely:-

“Commercial entities extracting ground water shall be required to submit online 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.”.

5. In the paragraph 4.1:-

(i). for clause (iii), the following clause shall be substituted, namely:-

“(iii). All industries abstracting ground water in excess of 100 m³/day shall be required to undertake biennial (once in two years) water audit through certified auditors of agencies as approved by CGWA and submit audit reports within three months of completion of the same to CGWA. Compliance of the earlier given reports may be checked by certified water auditors after one year and the report in this regard may be shared with 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.”.

(ii). for clause (iv), the following clause shall be substituted, namely:-

“(iv). In industrial areas (as designated or, notified by Central/State Government), Central Ground Water Board (CGWB) shall construct need-based piezometers as per local hydro-geological conditions and further monitor water levels.

In other than industrial areas as mentioned above, construction of observation well(s)/(piezometer)(s) within the premises and installation of appropriate water level monitoring mechanism as mentioned in Section 14 shall be mandatory for industries/Infrastructure drawing/ proposing to draw more than 100 m³ /day of ground water for Hard rock aquifer type and more than 500 m³ /day of ground water for Alluvium aquifer type. Monitoring of water levels in these areas shall be done by the project proponents. Minimum distance between the abstraction structure and piezometer will be 15 m if the aquifer tapped is hard rock and 50 m if the aquifer is alluvium. 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.”.

(iii). for clause (c), the following clause shall be substituted, namely:-

“(c). In case of saline ground water extraction, ground water quality data of existing bore well/ tube well/ dug well from any NABL accredited laboratory or Government approved laboratory.

Note: In case of new projects, water quality data / report of nearby existing wells from above-mentioned laboratories may be submitted for saline ground water extraction.”.

(iv). for clause (d), the following clause shall be substituted, namely:-

“(d). For all new projects, document as proof of new establishment / commencement of operation i.e. Consent to Establish/ Environmental Clearance/ any other document from a statutory agency.”.

(v). for clause (e), the following clause shall be substituted, namely:-

“(e). Copy of Rain Water Harvesting Plan submitted to Government agency by the applicant or a proposal for rain water harvesting/ recharge in the project premises as per the prevailing Model Building Bye Laws issued by Ministry of Housing & Urban Affairs, Government of India.”.

(vi). for clause (f), the following clause shall be substituted, namely:-

“(f). **Impact Assessment report:** All projects extracting/proposing to extract ground water in excess of 100 m³/day in Over-exploited, Critical and Semi-critical areas and in excess of 500 m³/day in areas underlain by non-alluvium and 2000 m³/day in areas underlain by alluvium in Safe assessment units shall have to mandatorily submit impact assessment report and ground water modeling study of existing/ proposed ground water withdrawal on the ground water regime covering 5 KM radius area around the project site prepared by accredited consultants. Pro-forma for the report is given in Annexure IV.”.

6. In the paragraph 4.2,

(i). for clause (ii), the following clause shall be substituted, namely:-

“(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 100 m³/day of ground water. Depth and aquifer zone tapped in the piezometer shall be commensurate with aquifer used for irrigation/drinking water in the buffer area. Detailed guidelines for design and construction of piezometers are given in Annexure II.”.

(ii). for clause (b), the following clause shall be substituted, namely:-

“(b) Copy of Rain Water Harvesting Plan submitted to Government agency by the applicant or a proposal for rain water harvesting/ recharge in the project premises as per the prevailing Model Building Bye Laws issued by Ministry of Housing & Urban Affairs, Government of India or as feasible in the mine premises and as approved by CGWA/State agencies”.

(iii). after clause (c), one more clause (d) shall be inserted, namely:-

“(d) For all New projects, document as proof of new project / commencement of operation i.e. Consent to Establish/ Environmental Clearance / any other document from a statutory agency.”.

7. In the paragraph 4.3:-

(i). in the sub para 3, for the words “Indicative list of Infrastructure projects is given in Annexure VI”, the words “Commercial infrastructure projects requiring ground water for drinking /domestic use shall also be covered under this category. Further, the Indicative list of location specific Infrastructure projects is given in Annexure VI” shall be substituted by revised Annexure VI given hereafter.

(ii). after clause (v), one more clause (vi) shall be inserted, namely:-

“(vi) All stadiums, cricket grounds, and other sports grounds/courts, golf courses etc shall construct/install appropriate mechanism for artificial recharge of ground water / rain water harvesting.

(iii). for clause (a), the following clause shall be substituted, namely:-

“(a) In cases where dewatering is involved, submission of impact assessment report along with groundwater modelling in 5 km radius 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.”.

(iv). for clause (e), the following clause shall be substituted, namely:-

“(e) Copy of Rain Water Harvesting Plan submitted to Government agency by the applicant or a proposal for rain water harvesting/ recharge in the project premises as per the prevailing Model Building Bye Laws issued by Ministry of Housing & Urban Affairs, Government of India.”.

(v). after clause (g), one more clause (h) shall be inserted, namely:-

“(h) For all New projects, building plan approval or any other relevant document as proof of new project from a statutory agency.”.

8. In the Section I under paragraph 5.1, for the table 5.1, the following table 5.1 shall be substituted, namely:-

“Table 5.1 Ground Water Abstraction charges for Drinking & Domestic use

Quantum of Groundwater withdrawal (m³/day)	Rate of ground water abstraction charges (Rs. per m³)
0-25	No Charge
> 25- < 200	1.00
200 and above	2.00

Government/ Government authorized agencies supplying water for drinking/ domestic use and Government infrastructure projects shall pay ground water abstraction charges @ Rs. 0.50 per m³ irrespective of quantum of ground water abstraction.”.

9. In the paragraph 6.0, sub para 2, the following shall be substituted, namely:-

“All those users abstracting ground water and using it for supply as bulk water supplies through private tankers shall mandatorily seek No Objection Certificate for ground water abstraction as per Guidelines for Bulk water suppliers as issued and updated by CGWA from time to time.”.

10. In the paragraph 7.0, sub para 3, the following shall be substituted, namely:-

“Abstraction of saline ground water shall be according to the Guidelines for Saline Ground Water Abstraction as issued and updated by CGWA from time to time.”.

11. In the paragraph 8.0,

In the sub para 2, the following shall be substituted, namely:-

“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 Authority/ State Authority or any other appropriate local government authority to establish their projects in the area.”.

12. In the paragraph 9.0:-

(i). for clause (i), the following clause shall be substituted, namely:-

“(i). Installation of tamper proof digital water flow meter/ Pre Paid Meter (s) (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.

In case the ground water extraction is from multiple bore/tube wells within the same premises, tamper-proof digital water flow meter(s)/Pre Paid Meter (s) with telemetry can be installed at common outlet point(s).”.

(ii). for clause (iv), the following clause shall be substituted, namely:-

“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 5.”.

(iii). for clause (v), the following clause shall be substituted, namely:-

“v. Purpose-built observation wells (piezometers) for ground water level monitoring shall be installed as per Section 14. Water level data shall be made available to CGWA through web portal. Detailed guidelines for construction of piezometers are given in Annexure-II.”.

(iv). for clause ix, the following clause shall be substituted, namely:-

“ix. In case of change of ownership, new owner of the premises 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.”.

13. In the paragraph 14.0,

(i). for sub para 1, the following shall be substituted, namely:-

“In other than industrial areas as mentioned hereafter, all the project proponents (drawing ground water more than 100 m³ /day of ground water for Hard rock aquifer type and more than 500 m³ /day of ground water for Alluvium aquifer type have to mandatorily construct Piezometers (observation wells) within their premises for monitoring of the ground water levels. Further, in industrial areas (as designated or notified by Central/State Government), Central Ground Water Board (CGWB) shall construct need-based piezometers as per local hydro-geological conditions and further monitor water levels. Such a mechanism of compliance conditions has been made to ensure regular monitoring of ground water level in the project area. In this regard the necessary criteria for monitoring of water levels through piezometers by the project proponents is given in Table 14.1.”.

(ii). for Table 14.1, the following Table shall be substituted, namely:-

Table 14.1 No. of Piezometers with Digital Water Level Recorder (DWLR) and telemetry to be constructed & Type of Water Level Monitoring Mechanism		
Sl. No.	Quantum of Ground water withdrawal (cum/day)	No. of piezometer(s) (with DWLR and telemetry required)
1.	0-100	0
2.	>100 (Hard rock aquifer type in other than industrial areas)	1
3.	>500 (Alluvium aquifer type in other than industrial areas)	1

14. In the paragraph 16.0, in the Table 16.1,

(i). Serial no. 2, i.e. “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”,

shall be substituted with

“Non disclosure/ construction of additional groundwater abstraction structures

a) Functional / Non-functional Structures.

b) Defunct / Abandoned

Note: Given rates are for unit Functional/non-functional/ defunct/ abandoned structures. This shall be multiplied with total such structures to arrive at consolidated penalty.”

(ii). under the serial no. 7, for the words, “Non maintenance of Recharge structures”, the words “Non maintenance of water conservation structures/ recharge structures” shall be substituted.

(iii). in the paragraph 16.0, the sub para 2 shall be substituted, namely:-

“Application fee for fresh/ renewal of NOC shall be charged as per the rates prescribed by CGWA from time to time and intimated through the official web portal. Fee shall also be payable for correction/ modification in the existing issued No Objection Certificate letter.”.

(iv). in the Table 16.2,

- i. under the heading/heading of the table, for the words “Proposed Charges” the words “Charges” shall be substituted.
- ii. the serial no. 1 (i.e the words " Change in recharge quantum including applicable charges") shall be deleted.

15. In the Annexure II, for bullet point 1, the following bullet point shall be substituted, namely:-

“The piezometer is to be installed / constructed at the minimum distance of 15 m if the aquifer tapped is hard rock and 50 m if the aquifer is alluvium from the pumping well through which ground water is being withdrawn. The diameter of the piezometer should be about four inches to six inches.”.

16. In the said guidelines, **Annexure VI** shall be substituted as given hereafter:

“Annexure VI

Indicative list of location specific Infrastructure Projects

Sl. No.	Infrastructure Projects
1.	Special Economic Zone
2.	Metro Station/Railway Station & Bus Depot
3.	Airport, Seaport, Logistics, Cargo & Warehouse
4.	Highway Infrastructure
5.	Fire station
6.	Hospitals & Nursing Homes
7.	Educational Institutions including schools, colleges, universities, coaching institutes, Training Centres/ Skill development centres

Note:- The requirement of NOC for Groundwater use may include the water requirement for drinking water/domestic uses also.

17. In the said guidelines, **Annexure VIII** shall be substituted as given hereafter:

“Annexure VIII

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

1.	Andaman & Nicobar
2.	Assam
3.	Arunachal Pradesh
4.	Bihar
5.	Chhattisgarh
6.	Dadra and Nagar Haveli and Daman & Diu
7.	Gujarat
8.	Jharkhand
9.	Madhya Pradesh
10.	Maharashtra

11.	Manipur
12.	Meghalaya
13.	Mizoram
14.	Nagaland
15.	Odisha
16.	Rajasthan
17.	Sikkim
18.	Tripura
19.	Uttarakhand

Note: The above list is dynamic in nature and any addition/deletion in this regard shall be communicated to the States/UTs, project proponents including industries by CGWA through its official web portal.”

18. In the **Annexure IX (Glossary of technical terms used)**, under the serial no. 17, for the words “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.”, the words, “**Drinking and domestic use:** Water required for daily household activities including hygienic purposes, such as cooking food, bathing, cleaning / washing, sanitation etc. 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.” shall be substituted.”

19. In the **Annexure X**, under the heading, for the words “Annual water audits by the industries (Source-CII)”, the words, “Water audits by the industries” shall be substituted. ”

[F. No. 23014/29/2021-Coordination Section- Part(2)]

ASHISH KUMAR, Director

Note: he ‘Guidelines to control and regulate ground water extraction in India’ were published in Gazette of India, Extraordinary, Part II, section 3, sub-section (ii) vide S.O. 3289 (E) dated 24th September, 2020.

STANDARD OPERATING PROCEDURE FOR IMPLEMENTATION OF MOJS GUIDELINES AND AMENDMENTS THEREOF

(Version 9.1)



**Central Ground Water Authority
Jamnagar House, New Delhi
Ministry of Jal Shakti
Department of Water Resources,
River Development & Ganga Rejuvenation**

May, 2023

Ministry of Jal Shakti

Department of Water Resources, River Development & Ganga Rejuvenation
 Central Ground Water Authority
 Notification of Guidelines dated 24th September 2020
 & Amendments dated 29th March 2023

Standard Operating Procedure for Implementation of Guidelines

Date: 14-05-2023

Version: 9.1, Author: CGWA

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Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation
Central Ground Water Authority
Notification of Guidelines dated 24th September 2020

Standard Operating Procedure (SOP)

Executive Summary

Revised guidelines 2020 have been notified in the Gazette of India vide No. CG-DL-E-24092020-221952 New Delhi, 24.09.2020 for obtaining/renewal of No Objection Certificate (NOC) to regulate and control groundwater extraction in the country in supersession of all the earlier guidelines issued by Central Ground Water Authority, Ministry of Jal Shakti. Recently, amendment to guidelines have been notified vide SO 1509(E), dated 29.03.2023.

In order to overcome the difficulties faced by applicants as well as evaluating officers for processing/ issuance of No Objection Certificate (NOC) for groundwater extraction/de-watering in the country, the Standard Operating Procedures (SOP) has been prepared. The SOP will act as a guiding document for workflow and fast tracking the process of issuance of NOC.

Various chapters given in present SoP describe the details about the procedures for processing the applications, eligibility, timeline, various charges and checklist of mandatory documents required for existing/ fresh and renewal applications. Moreover, in the SoP an attempt has also been made to elaborate the procedure to be adopted for imposition of Environmental Compensation and Penalty for illegal withdrawal of groundwater.

WHAT IS NEW

A) Guidelines Amendments dated 29.03.2023

Please go through guidelines amendment dated vide SO 1509(E), 29.03.2023

B) Option for Revival of Rejected Application - Please refer to Public Notice dated 13.10.2022 and corrigendum thereof dated 03.11.2022 (**Annexure-1**).

C) Online Modification Request Facility (Application/ NOC) presently for expansion of industries (quantum increase)

D) Date of Validity for Different Type of Applications (Fresh New, Fresh Existing, Renewal)

- Fresh New (Proposed) Project – Validity starts from Date of issuance of NOC
- Fresh Existing Project – Validity starts from date of submission of application (to be extended in case of very old application where validity may end within next 6 months).
- Renewal Applications – Month and Date remains same as previous NOC, only year will change (presently in practice)

About Accreditation Institutes:

SI No	Accreditation Institute	Location	For Institution/ Individuals	Authorized for Accreditation From
1	RAJIV GANDHI NATIONAL GROUND WATER TRAINING AND RESEARCH INSTITUTE (RGNGWTRI)	RAIPUR	<ul style="list-style-type: none"> • Individual consultants • Institutions 	15/2/2021
2	NATIONAL ACCREDITATION BOARD FOR EDUCATION AND TRAINING (NABET)	NEW DELHI	<ul style="list-style-type: none"> • Institutions only 	23/06/2021

Frequently Asked Questions

FREQUENTLY ASKED QUESTIONS	
Q1.	Who should obtain No Objection Certificate (NOC) from CGWA?
Ans.	<i>All Residential Apartments (with or without Swimming Pools, except exempted under Para 1.0(vii))/ Group Housing Societies (with or without Swimming Pools, except exempted under Para 1.0(vii))/ Government Water Supply Agencies in Urban Areas / Industrial / Infrastructural / Mining Projects which are either existing, new or are under expansion and requiring to withdraw ground water have to obtain NOC from CGWA.</i>
Q2.	Who is exempted from seeking No Objection Certificate (NOC)?
Ans.	<p><i>Following categories of consumers shall be exempted from seeking NOC for ground water extraction :</i></p> <ul style="list-style-type: none"> <i>(i) Individual domestic consumers in both rural and urban areas for drinking water and domestic uses.</i> <i>(ii) Rural drinking water supply schemes.</i> <i>(iii) Armed Forces Establishments and Central Armed Police Forces establishments in both rural and urban areas.</i> <i>(iv) Agricultural activities.</i> <i>(v) Micro and small Enterprises drawing ground water less than 10 cum/day.</i> <i>(vi) All industries/ mining projects/ infrastructure projects drawing ground water only for drinking/ domestic purposes up to 5 cum/ day in all assessment units.</i> <i>(vii) Residential Apartments and Group Housing Societies:</i> <ul style="list-style-type: none"> <i>a) For drinking and domestic uses, drawing ground water up to 20m³/day, subject to conditions mentioned in Para 2.0 of the guidelines.</i> <i>b) Dwelling units for Economically Weaker Sections (EWS) under Government schemes</i>
Q3.	Which type of industries shall not be granted No Objection Certificate (NOC)?
Ans.	<i>New industry and expansion of existing industries except those falling under MSME category (other than PDWs) located in over-exploited assessment units involving increase in quantum of ground water shall not be granted NOC.</i>
Q4.	Will new projects falling under Over-exploited assessment units be required to apply for NOC from competent authority?
Ans.	<i>Only new industries falling under MSME (other than PDWs) can apply for NOC for ground water abstraction in OE assessment units. New industries falling in other categories can obtain NOC only for drinking/domestic use for work force and greenbelt development. Further New mining Projects and New Infrastructure</i>

	<i>Projects can apply for NOC in OE areas.</i>
Q5.	<i>Is expansion of existing industries falling under over-exploited assessment units involving increase in quantum of groundwater abstraction allowed?</i>
Ans.	<i>Expansion of existing industries involving increase in quantum of ground water withdrawal falling under Over-exploited assessment units is permitted only for MSME sector.</i>

Q6.	<i>Are new packaged water industries falling under MSME category and located in Over-exploited assessment areas eligible to apply for NOC?</i>
Ans.	<i>No.</i>
Q7.	<i>Which type of infrastructure projects is not eligible for seeking No Objection Certificate (NOC) in OE Areas?</i>
Ans.	<i>Except following 7 categories, no infrastructure project is eligible for NOC in OE areas.</i> <i>(i) Special Economic Zone</i> <i>(ii) Metro Stations/ Railway Stations/ Bus Depots</i> <i>(iii) Airport, Seaport, Logistics, Cargo & Warehouse</i> <i>(iv) Highway Infrastructiure</i> <i>(v) Fire Station</i> <i>(vi) Hospitals & Nursing Homes</i> <i>(vii) Educational Institutions including schools, colleges, universities, coaching institutes, training centres/ skill development centres</i>
Q8.	<i>In which States / UTs CGWA is issuing NOC for ground water withdrawal to Residential Apartments / Group Housing Societies / Government Water Supply Agencies in Urban Areas / Industrial / Infrastructural / Mining Projects/ Bulk Water Supply for Drinking, Doemstic purposes?</i>
Ans.	<i>In the States of Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Sikkim, Tripura, Uttarakhand, and in UTs of Andaman & Nicobar, and Daman, Diu & Dadra Nagar Haveli.</i>
Q9.	<i>In which States / UTs CGWA is not Issuing NOC for ground water withdrawal to Residential Apartments / Group Housing Societies / Government Water Supply Agencies in Urban Areas / Industrial / Infrastructural / Mining Projects?</i>
Ans.	<i>CGWA does not Issue NOC for ground water withdrawal in the States of Andhra Pradesh, NCT Delhi, Uttar Pradesh, Punjab, Haryana, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Tamil Nadu, Telangana and West Bengal and in UTs of Chandigarh, Puducherry, Lakshadweep and Ladakh.</i>
Q10.	<i>Where should project proponent submit the Proposal?</i>

Ans.	<i>Project proponent has to submit the application online on the website http://cgwanoc.gov.in.</i>
Q11.	<i>Is installation of Sewage Treatment Plants (STPs) mandatory for all residential apartments/ Group Housing Societies?</i>
Ans.	<i>Installation of Sewage Treatment Plants (STPs) shall be mandatory for all new residential apartments/ Group Housing Societies where ground water requirement is more than 20 m³/day.</i>
Q12.	<i>What are ground water abstraction charges and who need to pay it?</i>
Ans.	<i>Ground water abstraction charges are amount to be paid against ground water withdrawal based on type of water use, the quantum of ground water extraction and category of assessment unit. All residential apartments/ group housing societies/ Government water supply agencies in urban areas / Industries / Mining/ Infrastructure projects drawing ground water in safe, semi-critical and critical assessment units will have to pay ground water abstraction charges.</i>
Q13.	<i>Who need to pay ground water restoration charges?</i>
Ans.	<i>All existing Mining / Infrastructure projects / Industries (including MSMEs) and new MSMEs (other than PDWs), new infrastructure (falling in 7 categories in Ans-7) and new mining projects drawing ground water in over-exploited assessment units will have to pay ground water restoration charges based on their quantum of ground water extraction.</i>
Q14.	<i>Can treated water be used for recharge to ground water?</i>
Ans.	<i>Treated / Untreated wastewater can not be used for recharge to ground water.</i>
Q15.	<i>Which type of industries need to submit Impact Assessment Reports?</i>
Ans.	<i>All industrial projects extracting / proposing to extract ground water in excess of 100 m³/day and up to 500 m³/day ground water in over-exploited, critical and semi-critical areas shall have to mandatorily submit Impact Assessment Report with Analytical Modelling Report (Annexure-4a and 4b). For GW Extraction above 500 KLD in OCS blocks shall have to mandatorily submit Impact Assessment Report with Mathematical Modelling Report Also in safe areas underlain by hard rock, industries drawing >500 m³/day and in safe areas underlain by alluvium/ soft rock, industries drawing >2000 m³/day are required to submit impact assessment report with Mathematical Modelling (Annexure-4a and 4b)</i>
Q16.	<i>What kind of project needs to submit consent / approval from the wetland authorities?</i>
Ans.	<i>Projects falling within the 500 m. periphery of demarcated wetland area (As per RAMSAR Sites given in Annexure-2) shall mandatorily need to submit consent/ approval from the appropriate wetland authorities/ State Authority/ or any other appropriate local government authority to establish their projects in the area.</i>

Q17.	<i>What is the mode of payment of processing fee, abstraction fee and restoration charges?</i>
Ans.	<i>One year advance Payment is to be made online through link given in NOCAP Bharatkosh (website: Bharatkosh.gov.in) before submission of application Arrears/ EC/ Penalty, if applicable will be communicated later on approval of application and will have to deposited against the application within stipulated period by logging in into one's account .</i>
Q18.	<i>Will it be allowed to apply for renewal after validity expiry of NOC?</i>
Ans.	<i>Yes, but the project proponent shall be liable to pay environmental compensation for the period starting from the date of expiry of NOC, till NOC is renewed by the competent authority.</i>
Q19.	<i>Is there any provision of extension of NOC?</i>
Ans.	<i>Yes, extension of NOC will be allowed in case proponent is unable to construct well(s) during the validity period of NOC.</i>
Q20.	<i>How extension of NOC will be accorded and for how many years?</i>
Ans.	<i>Proponent will have to apply for extension of NOC with valid reason along with supportive documents. Other conditions will remain the same as that for fresh NOC. Extension of NOC will be granted for the maximum period of 2 years. Creation of facility for online request for extension in NOCAP is in process and will be functional shortly.</i>
Q21.	<i>Can CPHEEO norms be considered instead of NBC-2016 norms?</i>
Ans.	<i>No. The guidelines of NBC-2016 norms are available on CGWA website.</i>
Q22.	<i>Which projects are exempted from paying groundwater abstraction charges?</i>
Ans.	<i>The projects which are abstracting saline groundwater are exempted from paying groundwater abstraction charges. However, in case of delay in submission of application, EC will be charged at the rates prescribed for Safe Area.</i>
Q23.	<i>Are the projects eligible for any kind of rebate to seek NOC?</i>
Ans.	<i>Yes, proponents will be eligible for 50% rebate in groundwater abstraction/groundwater restoration charges, at the time of every renewal by the competent authority, if they have implemented recharge measures as per the condition specified in their previous NOC.</i>
Q24.	<i>What will happen in case of nonpayment of EC/ Penalty/ Arrears (if applicable) after approval of NOC?</i>
Ans.	<i>If the applicant fails to deposit required charges abstraction/restoration charges within the prescribed time limit, the application shall be liable to rejection (even after approval).</i>
Q25.	<i>What is the procedure for change in groundwater quantum in the NOC/</i>

	<i>Application?</i>
<i>Ans.</i>	<i>The PP has to apply online thorough Modification Request Facility on NOCAP with proper justification and supporting documents. The change will subject to approval of competent authority.</i>
<i>Q26.</i>	<i>What is the procedure in case of failure of Bharatkosh transactions?</i>
<i>Ans.</i>	<i>The project proponent will have to contact Bharatkosh helpline/NTRP Team on email ID available on NTRP portal. No action is required from CGWA side.</i>
<i>Q27.</i>	<i>What is the mechanism for imposing EC on illegal abstraction?</i>
<i>Ans.</i>	<i>EC is to be imposed for illegal abstraction of ground water. The amount of EC will be deposited by applicant online by logging into user account</i>
<i>Q28.</i>	<i>What is the mechanism for show cause notice?</i>
<i>Ans.</i>	<i>If a firm violates the NOC conditions and it has been proved during site inspection, the show cause notice will be issued to the firm by the NOC approving authority RD/HQ with condition of replying within 15 days. If the firm fails to submit reply within stipulated time frame, the case may be forwarded to respective Authorized DM/DC for necessary action.</i>

Chapter-1

Application Fee and Processing

1.1 Application Fee

- Fresh NOC Rs. 10000
- Renewal of NOC Rs. 5000
- Extension of NOC Rs. 5000
- Change in User ID Rs. 5000
- Change in name of the firm Rs. 5000
- Issuance of corrigendum of NOC Rs. 5000
- Any other items/ corrections etc.- Rs. 5000
Expansion of NOC

1.2 Processing of Applications for Fresh NOC and Renewal of NOC

Applications received in Regional Offices shall be verified, processed and approved and NOC shall be processed and disbursed for ground water abstraction upto 100 KLD and those above 100 KLD will be forwarded to HQs after verification. The detailed procedure for processing of applications and issuance of NOC is described in succeeding paras. NOC shall be issued for the period as per assessment unit category and type of water use as mentioned below:

Category	Use	Validity of NOC
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

1.2.1 Regional Office

Regional Director/ Head of Office is declared as Administrator at Regional Office. All cases up to 100 m³/day will be processed in the Regional Office.

1.2.1.1 Role of Evaluating Officer

Check all the documents as per the check list given below and enter details of processing fee and ground water abstraction/ restoration charges received at verification stage. Verification is to be completed within 7 days of receipt of application.

CHECK LIST OF DOCUMENTS AT VERIFICATION STAGE

S.No	Documents	Yes/No
1	Consolidated Consent & Authorization (CCA) <i>Consent to Establish (CTE) or Consent to Operate (CTO) from State Pollution Control Board or letter from MoEF, or letter from State level Environmental Impact Assessment Authority or any other letter from statutory agencies indicating date of commencement of project (in case of OE area and in case of new projects only)</i>	
2	<i>Affidavit on non-judicial stamp paper of Rs. 50/- by the applicant, confirming non/ inadequate availability of public water supply (in case of water requirement is less than 10 KLD for fresh as well as renewal cases)</i>	
3	<i>Certificate regarding non/ partial availability of fresh water/ treated waste water supply from the local government water supply agency (Required in case of water requirement is more than 10 KLD for fresh as well as renewal cases)</i>	
4	<i>In saline category only, Ground water quality report of existing well from NABL accredited/govt. approved lab</i>	
5	<i>Water requirement for drinking and domestic purpose to be computed as per the National building code (NBC) 2016.</i>	
6	<i>Completion certificate/Affidavit from the concerned agency for infrastructure projects in case ground water requirement exceeds 10 KLD</i>	
7	<i>Certificate of Installation of STP /Affidavit (For New Projects) in case of water requirement is more than 20 KLD</i>	
8	<i>Impact Assessment Report/G.W. Modeling report by accredited consultants as per the format available in NOCAP (if applicable)</i>	
9	<i>MSME Certificate in case of MSME (If groundwater requirement is more than 10 KLD or more in OE areas) or certificate for Medium Enterprise if groundwater requirement is less than 10 KLD</i>	
10	<i>Detailed report from projects falling within 500 m from the periphery of demarcated wetland areas indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas</i>	
11	<i>Certificate/Affidavit of wetland from projects falling beyond 500 m from the periphery of demarcated wetland areas only in the districts where the wetland is located (Annexure- showing RAMSAR sites)</i>	

12	<i>Water audit reports by certified auditors of agencies approved by CGWA for cases GW withdrawal is more than 100 KLD (in case of renewal Only)</i>	
13	<i>Site Inspection/ Self Inspection (Renewal cases only)</i>	
14	<i>Approved Mine Plan by approving authority.</i>	
15	<i>Comprehensive Hydrogeological report on groundwater conditions in core and buffer zones of the mine . in case of dewatering by Accredited Consultants as per guidelines. GW Modelling report by accredited consultant is to be included in CHR in case of > 500 KLD GW extraction.</i>	
16	<i>Copy of Bharatkosh receipts (If payment made directly into Bharatkosh without using NOCAP Link):</i> <ul style="list-style-type: none"> ● <i>Application Fee</i> ● <i>Ground water abstraction/restoration charges</i> 	

- Applications incomplete (partial payment/ non-payment of Abstraction/ Restoration Charges and/ or without mandatory documents **are to be rejected** at verification stage itself. The reason(s) for rejection is/ are to be clearly mentioned in the Action Comment and Noting.
- Application for ground water withdrawal of more than 100 KLD after verification and filling up Evaluation Proforma in the Headquarter will be forwarded to AO level at HQ.
- Applications seeking GW withdrawal upto 100 KLD,if documents are complete, should be processed, else rejected within 7 days of receipt of application. No queries should be made at verification stage.
- In case of complete application, EO shall fill Evaluation Proforma, calculate ground water abstraction/ restoration charges and fill columns regarding EC and penalty, if any and forward to Approving Officer.
- If any query is raised in application processing stage, first query should be raised within 7 days giving 15 days time for submission of response. Query will be generated at EO level and will be approved by AO. Therefore, in case of query application will be forwarded to AO level seeking approval of query.
- Query will be sent by email (till provision of generating query is made in NOCAP portal).
- If response to first query is received and reply is satisfactory, fill Evaluation Proforma, calculate ground water abstraction/ restoration charges and fill columns regarding EC and penalty, if any and forward with recommendation to Approving Officer with noting (Visible to applicant on website and by SMS).
- Second query may be raised in special cases in extraordinary situations only.
- On receipt of satisfactory reply of queries, fill the Evaluation Proforma and calculate groundwater abstraction/ restoration charges and fill columns regarding EC and penalty, if any and forward with

recommendation to Approving Officer with noting. (Visible to Applicant on website and by SMS).

- In case no reply is received even after second query or reply is still **unsatisfactory**, **reject** the application clearly stating the reason.

1.2.1.2 Role of Approving Officer

- Approving Officer will verify the recommendation received from Evaluating Officer and returned for clarification to Evaluating Officer, if any discrepancy is observed.
- Approving officer will also check the ground water abstraction/ restoration charges, EC and penalty calculated by the Evaluating Officer.
- In case of query, if AO is satisfied with the query suggested by EO, he will approve as it is, otherwise he will modify/ add query and return to EO.
- AO will approve the application if quantum of ground water withdrawal is upto 10 KLD on being satisfied with the recommendation of the Evaluating Officer.
- Applications for ground water withdrawal of > 10 KLD will be forwarded to Admin with recommendation and noting in case of higher quantum of ground water withdrawal. Action/ comment is visible to Applicant on website and by SMS.
- There may be provision to representation by the applicant in case of dispute/mismatch in query by himself or authorized representative by means of submitting documents/presentation to resolve query before expiry of time limit. **After both the queries, if applicant fails to satisfy condition, the application will be rejected**, else with satisfactory reply application will be processed for issuance of NOC.

NOC processing

- After approval of NOC from AO/ Administrator, will check and update the charges, EC and penalty, if any, imposed and received from the PP in NOC processing sheet.

NOC disbursement

- After updating of charges, EC and penalty, AO will approve and disburse the NOC.

1.2.1.3 Role of Administrator

- Recommendation received from Approving Officer will be verified and returned to Approving Officer for clarification, if any discrepancy is observed.
- Application upto 100 KLD will be approved by Administrator within cumulative 15 days of receipt of complete application if no query is raised.
- In case of query raised, application is to be approved within 30 days.

1.2.2 HQs Office

Applications for more than 100 KLD will be submitted directly to CGWA, New Delhi. Applications for ground water abstraction of more than 100 KLD after verification will be forwarded to AO level in HQs for further processing.

1.2.2.1 Role of Evaluation Officer (EO, HQ)

Please refer to Section 1.2.1.1 above.

1.2.2.2 Role of Approving Officer

- The Approving Officer will process the application. For processing of applications of > 100 KLD in OCS areas and >500 KLD in safe areas underlain by hard rock and > 2000 KLD in safe areas underlain by soft rock/ alluvium and mining/ infrastructure dewatering projects, the AO will go through the Impact Assessment Report, Comprehensive Hydrogeological Report, Modelling Report and the Water Audit Report as the case may be. If the case is fit for review by the Expert Appraisal Committee (EAC), AO will recommend for presentation before EAC. Mail will be sent to PP for sending presentation and filled in evaluation proforma.
- After approval of EAC of such applications, AO will check the charges deposited by the PP, calculate revised charges in case change of quantum is suggested by EAC, calculate EC and penalty, if any, and fill up Evaluation proforma.
- Applications of infrastructure projects not involving dewatering , and therefore, not requiring IAR and review by Expert Appraisal Committee will be processed by AO. AO will check the charges received, calculate EC and penalty and submit with recommendation to the Administrator. AO will fill the Evaluation Proforma.
-

1.2.2.2 Role of Administrator

- On receiving recommendation from the AO, the Administrator will shortlist the cases for presentation before the EAC and arrange to hold meeting of EAC. All the applications approved by the EAC will be processed. Applications upto 500 KLD shall be approved by Administrator and those of higher quantum shall be recommended and forwarded to Member.
- Cases which have not been approved by EAC will be returned to AO for seeking the information as advised by the EAC.
- Cases which do not come under purview of EAC, the Administrator will process and approve applications upto 500 KLD and forward applications of higher quantum to Member.

1.2.2.3 Role of Member

- Member will examine all applications as recommended by the Administrator and approve if the quantum of ground water abstraction is >500 to 1000 KLD and forward applications with quantum of >1000 KLD to Chairman.

1.2.2.4 Role of Chairman

- Chairman will approve all applications for ground water withdrawal of >1000 KLD as recommended by the Member.

NOC processing and disbursement

- After approval of NOC from Administrator/ Member/ Chairman as per quantum, AO will update the charges, EC and penalty imposed and received from the applicant and modify the NOC in case required.
- Approve and disburse the NOC in case all payments have been received. NOC will be automatically uploaded.
- NOC is to be issued within 45 days of submission of application.

1.2.3 Clarifications for NOC processing

1. Existing infrastructure projects where the application has been submitted before 24/9/2020 and water requirement is >20 KLD -- **STP is not mandatory.**
2. Completion certificate/occupancy certificate - It is mandatory document for issuance of NOC for all projects in respect of Infrastructure Projects. **However, an affidavit can be accepted from the project proponents as given in the annexure.**
3. While computing the water abstraction/ restoration charges, the consumption for major use has to be taken for deciding the rates of charges.
4. The Micro and Small enterprises mining, hotel and infrastructure project applicants having GW withdrawal less than 10 KLD are also exempted from seeking NOC.
5. Mining Projects seeking renewal need **not** submit water availability certificate.
6. Mining cases where water requirement is for drinking and domestic purpose shall be dealt under **drinking and domestic category.**
7. Industries applying for the first time **need not submit water audit** report at the time of filing application.

8. As per the amendment to guidelines notified on 29.03.2023, *All projects extracting/proposing to extract ground water in excess of 100 m³/day in Over-exploited, Critical and Semi-critical areas and in excess of 500 m³/day in areas underlain by non-alluvium and 2000 m³/day in areas underlain by alluvium in Safe assessment units shall have to mandatorily submit impact assessment report and ground water modeling study of existing/ proposed ground water withdrawal on the ground water regime covering 5 KM radius area around the project site prepared by accredited consultants..* The following will be the criteria for GW modelling.

a. Criteria for Modelling Studies for Industries

Assessment Unit Category	Modelling Method	Area Type	Quantum	Remarks
OCS	Analytical Modelling	HR/ Non-alluvium	>100-500	Refer to SECTION F
		Alluvium	>100-1000	
	Numerical Modelling	HR/ Non-alluvium	>500	
		Alluvium	>1000	
Safe	Numerical Modelling	HR/ Non-alluvium	>500	
		Alluvium	>2000	

b. Criteria for Modelling Studies for Mining projects.

Numerical Modelling **for seepage part above 500 KLD.**

c. Criteria for Modelling Studies for Infrastructure projects.

Numerical Modelling for all projects involving dewatering irrespective of quantum.

The following amendments have been made and are available on the NOCAP Portal:

- (a) The Impact Assessment study Report in case of industries covering 5 Km radius area around the project site and ground water modeling study is mandatory as per the criteria given in point number 8.
 - (c) In case of infrastructure projects where dewatering is required, impact assessment report along with groundwater modeling in 5 km radius shall be mandatory irrespective of groundwater volume.
 - (d) All mining projects irrespective of dewatering shall mandatorily submit comprehensive hydrogeological reports of core and buffer zones in the radius of 2 and 10 sq.km respectively.
 - (e) In case of dewatering, ground water modeling in 10km radius is mandatory as per the criteria given in point number 4 below.
9. For Renewal case: In case of non compliance of conditions of previous NOC, penalty of Rs. 100000 will be imposed under Section 15 of EPA for non compliance in case of NOCs issued/ applications submitted prior to 24.9.2020, since guidelines cannot be implemented with retrospective effect.

However, the applicant need to comply with the then NOC conditions within six months of renewal failing which case will be liable for EC.

10. 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 in each renewal.
11. Projects existing prior to 30.09.2022, which had not applied for NOC by the last date, i.e 30.09.2022 shall be liable to pay EC as per Public Notice dated 03.11.2022 (**Annexure-3**). **However**, the relaxation in the Public Notice to PPs who made attempts to apply by 30.09.2022 but could not do so due to NOCAP issues, shall not be applicable in respect of such applications submitted after **31.12.2022**.

1.3 Extension of NOC

Cases of extension of NOC shall be approved at appropriate levels as defined in the procedure for processing of NOC applications. **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.**

1.3.1 Regional Office

1.3.1.1 Role of Evaluating Officer

The Evaluating Officer will first examine the application and attached documents submitted by the Project Proponent.

Check list in case of Extension of NOC

S.No.	Documents	Yes/ No
1.	Previous NOC	
2.	Documentary proof justifying the reasons for delay in implementation of the project	

- Extension of NOC is to be considered only in cases, where no ground water abstraction structures have been constructed.
- If EO is satisfied with the justification furnished by the PP, EO will recommend applications of up to 100 KLD to AO of the Regional Office and applications above 100 KLD will be forwarded to HQ.
- EO will also indicate ground water abstraction/ restoration charges to be deposited by the PP.

- After approval from the approving Authority, charges will be communicated to PP giving 15 days' time to deposit the same.
- After receiving the charges, Extension letter will be issued duly signed by the Regional Director till the provision for online submission and processing is made in NOCAP.

1.3.1.2 Approving Authority at Regional Office

The applications for extension of NOC shall be approved by the approving Authority as specified below:

S. No.	Quantum of ground water abstraction (KLD)	Approving Authority
1.	Upto 10 KLD	Approving Officer
2.	Upto 100 KLD	Administrator

1.3.2 HQs Office

1.3.2.1 Role of Evaluating Officer (EO, HQ)

PI refer to Section 1.3.1.1 above

1.3.2.2 Role of Approving Officer

- The Approving Officer will examine the application along with supporting documents forwarded by the Evaluating Officer of the Region and the recommendation furnished by the EO.
- Extension of NOC is to be considered only in cases, where no ground water abstraction structures have been constructed.
- If AO is satisfied with the justification furnished by the PP and recommendation of the EO from Regional Office, AO will recommend the application to Administrator.
- AO will also indicate ground water abstraction / restoration charges to be deposited by the PP.
- After approval from the approving Authority, charges will be communicated to PP giving 15 days' time to deposit the same.
- After receiving the charges, Extension letter will be issued duly signed by the Member till the provision for online submission and processing is made in NOCAP.

1.3.2.3 Approving Authority at HQs Office

The applications for **extension** of NOC shall be approved by the approving Authority as specified below:

S. No.	Quantum of ground water abstraction (KLD)	Approving Authority
1.	Up to 500 KLD	Administrator (RD/ HoO)
2.	Up to 1000 KLD	Member
3	>1000 KLD	Chairman

1.4 Change in User ID in NOCAP portal

The user will send mail to the concerned **Regional Office** requesting for change in User ID, indicating the new User ID and submit the following documents:

- ID proof
- Authorisation letter
- Copy of NOC, in case of existing NOC holders.
- In case NOC has not been issued, the user will inform application No.
- Bharatkosh receipt for fee paid for Rs. 5000 (Till the provision for service request is made online in NOCAP portal)

The Evaluating Officer on being satisfied with the documents submitted by the Proponent obtain approval from Regional Director and do the needful in NOCAP.

1.5 Change in name of the firm

The user will submit a request through mail to the concerned Regional Office/CGWA for change of name of the firm along with the following documents:-

- Bharatkosh receipt for fee paid for Rs 5000 in respect of name change
- Certificate of incorporation or any other legal document in support of name change
- Copy of existing NOC

The Evaluating Officer in Regional Office/ AO in HQs office, as the case may be, will check the documents submitted by the proponent and put up for approval. Approving Authority will be as follows:

S. No.	Quantum of ground water abstraction	Approving Authority
--------	-------------------------------------	---------------------

	in the NOC/ application (KLD)	
1.	Upto 10	AO in Regional Office
2.	Upto 100	Administrator in Regional Office (RD/HoO)
4.	Upto 500	Administrator in HQs (with the role of rdhq)
5.	Upto 1000	Member
6.	>1000	Chairman

After receiving approval from the Approving Authority EO will change in the name in the NOCAP and issue corrigendum of NOC.

1.6 Issuance of corrigendum of NOC/ Revised NOC

Once a request is received in the Regional Office/ HQs from the applicant regarding issuance of corrigendum/ revision in NOC, the Evaluating Officer in the Region / Approving Officer in the HQs will examine the request and justification furnished by the applicant. If he is satisfied with the justification corrigendum/ revised NOC will be issued after approval of the approving Authority as mentioned in the table under para 1.5.

1.7 Expansion of quantum of ground water abstraction in NOC

Application for expansion of NOC shall be considered separately only if it is submitted within the validity period of NOC. After the expiry of validity of NOC, proposal for expansion is to be included by the applicant in the application for renewal of NOC. Applications upto 100 KLD shall be processed at Regional Office and those above 100 KLD at HQs. **Such requests are to be made by PP online through Modification Request Facility on NOCAP Portal.**

Check list in case of Expansion

S. No.	Documents	Yes/ No
1.	Previous NOC	
2.	Documentary proof justifying the increase in quantum of ground water abstraction - Consent to Operate or Environmental Clearance or any other document by concerned State agency mentioning the increased quantum of water consumption	

3	Self-inspection	
4	Bhratkosh receipt of Rs. 5000	

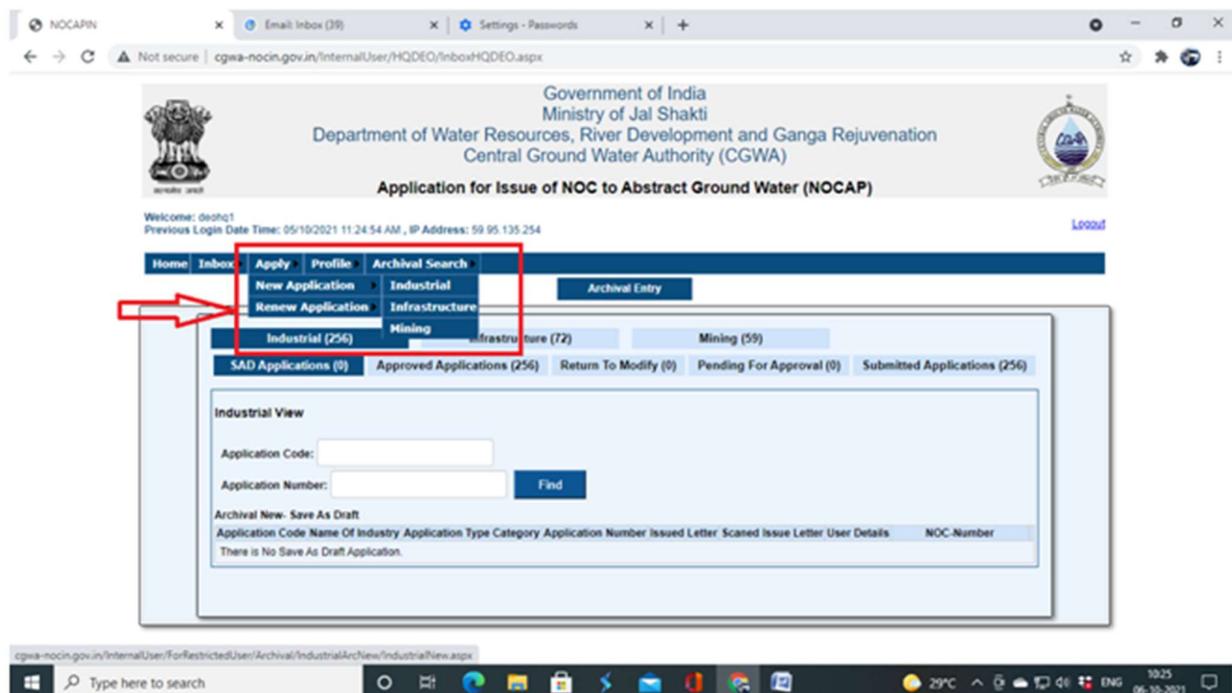
- Application will be submitted by the applicant online **through Modification Request Facility on NOCAP Portal.**
- Procedure for processing of application and issuance of Revised NOC shall be the same as described under application processing for fresh/ renewal of NOC.
- Approving Authority will be the same as for approval of NOC.
- No expansion shall be granted to existing industries in Over-exploited assessment units.
- However, if any industry has already undergone expansion before 24.09.2020, in such case expansion to industry in Over-exploited assessment units shall be considered.

1.8 Archival of old applications and NOC

Archival of old applications received and processed offline is to be done at respective Regional Offices. Steps for archival of applications and NOC are given below:

Step- 1 Log in using ID and Password of Data Entry Operator as provided by NIC

Step- 2 Click on **Apply → New application → Industry/ Infra/ Mining**



Step- 3

Fill the details from the application (Make sure that the new application number is as per format as shown below)

The screenshot shows a web browser window with the URL cgwa-nocin.gov.in/InternalUser/ForRestrictedUser/Archival/MiningArcNew/MiningNew.aspx. The page title is "Archival Entry". The form is titled "MINING USE: 1. General Information - Location Details". The form includes a sidebar with navigation options like "Home", "Inbox", "Apply", "Profile", and "Archival Search". The main form fields are as follows:

Field	Value
Application Number *	21-4/36/CTMIN/2008
Old Application Number	21-4(36)/NCCR/CGWA/2008
Submitted Date *	23/09/2008
Eligible For Exemption *	<input type="radio"/> Yes <input checked="" type="radio"/> No
Application Status Description *	Approved
Water Quality Type *	Fresh Water
Application Type Category / Type of Application *	Limestone
(i) Name of Mine / Project *	Shree Rajpur Cement Plant (Unit of Shree Cement Ltd)
(ii) Location Details of the Mining Unit- (Attach Site Plan and Certified Revenue Sketch) (S) *	
Address Line 1 *	
Address Line 2	

Step-4

Fill all the details as per application and NOC like project address, communication address, quantum of ground water abstraction /dewatering, Number of abstraction and dewatering structures and attach all the documents in extra attachment page.

NOTE : New NOC number should be in proper format as shown below
For fresh NOC- Old NOC number- CGWA/IND/Proj/2018/332

New Format

For fresh NOC - CGWA/NOC/IND/ORIG/2018/332
For 1ST renewal NOC- CGWA/NOC/IND/REN/1/2018/332
For 2nd renewal NOC- CGWA/NOC/IND/REN/2/2018/332

After filling all the details “**SUBMIT**” the application.

Step- 5

Log in using ID and PW of Data Entry Approval

Step- 6

Click on Inbox → New/Renew → Ind/Infra/Min → Pending for approval → Take action

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)

Application for Issue of NOC to Abstract Ground Water (NOCAP)

Welcome: deahq
Previous Login Date Time: 06/10/2021 13:09:17 PM, IP Address: 154.100.177.244

Home | **Inbox** | Dashboard | Enroll Old NOC | Profile | Search

New
Renew

Approval Form

Industrial (256) | Infrastructure (72) | Mining (59)

Approved Applications (256) | Return To Modify (0) | Pending For Approval (0)

Industrial View

Application Code:
Application Number: **Find**

Archival New Waiting for Approval Application

Application Code	Name Of Industry	Application Type Category	Application Number	Issued Letter	Scanned Issue Letter	NOC-Number	Take Action
There is No Application Submitted.							

Step – 7 Cross check the details entered by data entry operator

Archival Entry

Location Details

Mandatory Fields | Upload Attachments in Attachment Section

General Information:

Application Number: 21.436CT/Min/2008

Old Application Number: 21.436/ACC/CGWA/2008

Submitted Date: 23/09/2008

Eligible For Exemption: Yes No

Application Status Descriptor: Approved

Water Quality Type: Fresh Water

Application Type Category / Type of Application: Limestone

Name of Mine / Project: Shree Rajgar Cement Plant (Unit of Shree Cement Ltd)

Address Line 1:

Address Line 2:

Step- 8

Go to the last page and approve the application.

Step-9

Click on **Inbox** → **New/Renew** → **Ind/Infra/Min** → **Approved applications** → **Associate User**

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)

Application for Issue of NOC to Abstract Ground Water (NOCAP)

Welcome: deahq
Previous Login Date Time: 06/10/2021 13:30:28 PM, IP Address: 164.100.177.244

Home | **Inbox** | Dashboard | Enroll Old NOC | Profile | Search | Approval Form

New
Renew

Industrial (256) | Infrastructure (72) | Mining (59)

Approved Applications (256) | Return To Modify (0) | Pending For Approval (0)

Industrial View

Application Code:
Application Number: Find

Archival New Approved Application

Application Code	Name Of Industry	Application Type Category	Application Number	Final Application Code	Approved Date	Issued Letter	Scanned Issue Letter	User Details	NOC Number	Associated User	Associate User	Create User
1	M/S UDAPUR BEVERAGES LTD.	Soft drink	21-8/16/MP/IND/2007	854	01/07/2016	NOC Letter	View	deahq1	CGWA/NOC/IND/ORIG/2013/1474	UBLCO/WB	Associate User	
2	M/S IPCA LABORATORIES LTD.	Pharmaceuticals	21-8/27/MP/IND/2008	869	04/07/2016	NOC Letter	View	deahq1	CGWA/NOC/IND/ORIG/2008/0482	IPCA/1234	Associate User	
	Cement Industry		21-	1297	27/09/2016	NOC	View	deahq1	CGWA/NOC/IND/ORIG/2010/0565	K/S/cement	Associate	

Step- 10

Select the user name provided by the applicant

Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development and Ganga Rejuvenation
Central Ground Water Authority (CGWA)

Application for Issue of NOC to Abstract Ground Water (NOCAP)

Welcome: deahq
Previous Login Date Time: 06/10/2021 13:30:28 PM, IP Address: 164.100.177.244

Home | **Inbox** | Dashboard | Enroll Old NOC | Profile | Search | Approval Form

New
Renew

Industrial (256) | Infrastructure (72) | Mining (59)

Approved Applications (256) | Return To Modify (0) | Pending For Approval (0)

Industrial View

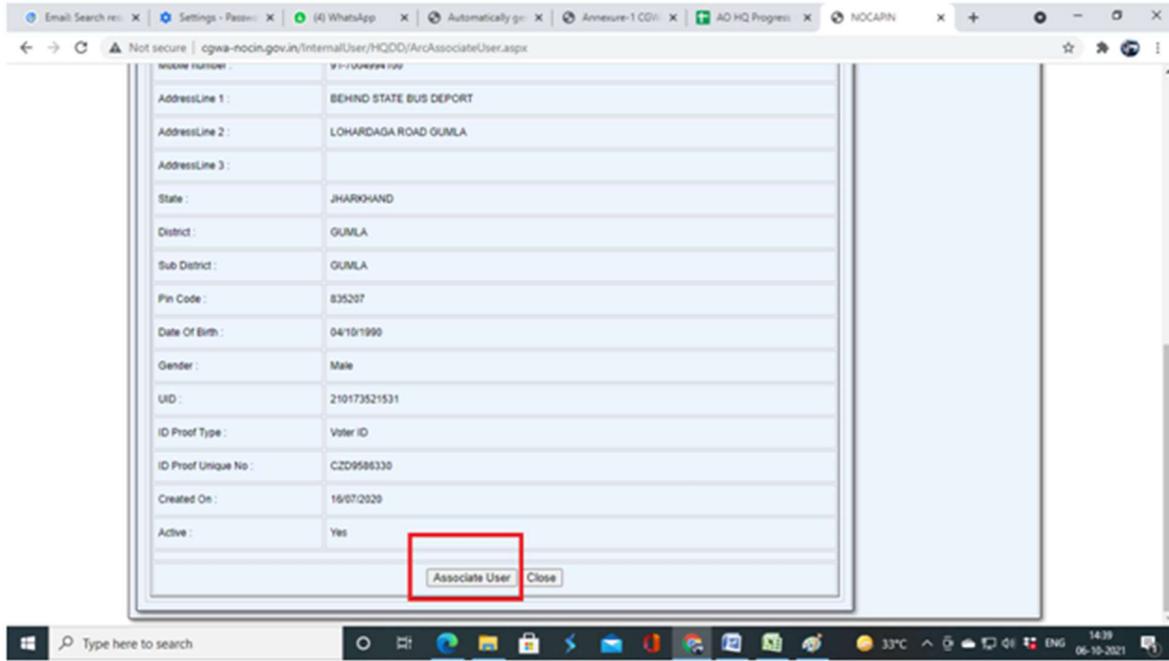
Application Code:
Application Number: Find

Archival New Approved Application

Application Code	Name Of Industry	Application Type Category	Application Number	Final Application Code	Approved Date	Issued Letter	Scanned Issue Letter	User Details	NOC Number	Associated User	Associate User	Create User
1	M/S UDAPUR BEVERAGES LTD.	Soft drink	21-8/16/MP/IND/2007	854	01/07/2016	NOC Letter	View	deahq1	CGWA/NOC/IND/ORIG/2013/1474	UBLCO/WB	Associate User	
2	M/S IPCA LABORATORIES LTD.	Pharmaceuticals	21-8/27/MP/IND/2008	869	04/07/2016	NOC Letter	View	deahq1	CGWA/NOC/IND/ORIG/2008/0482	IPCA/1234	Associate User	
	Cement Industry		21-	1297	27/09/2016	NOC	View	deahq1	CGWA/NOC/IND/ORIG/2010/0565	K/S/cement	Associate	

Step-11

Click on Associate user



Illustration

Cases up to 100 KLD – Regional Level

1. Stages of Application Processing

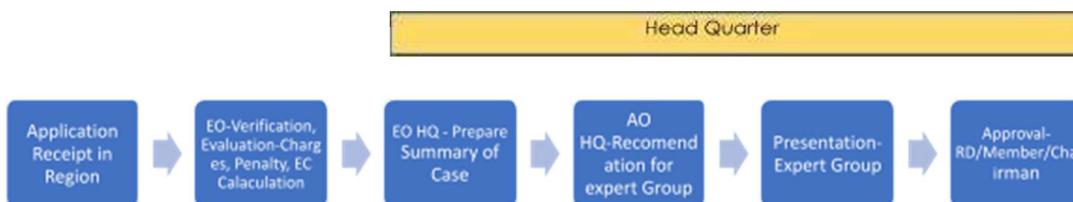


2. Stages of NOC Processing and Disbursement



Cases > 100 KLD

1. Stages of Application Processing



2. Stages of NOC Processing and Disbursement



1.9 Calculation of ground water abstraction/ restoration charges

1.9.1 Fresh NOC

- Ground water abstraction/ restoration charges will be calculated on annual basis.
- Charges as per categories of Ground Water Resource Assessment- as on 1st January of each year.
- Those who have already deposited charges, their charges will be revised as per new category w.e.f. 1st January of each year.
- Every year the PP will submit data on actual water consumption and charges for one year will be communicated to the PP with the direction to pay charges within 15 days, failing which their NOC shall be cancelled, tubewells will be sealed and EC will be imposed.
- Based on the actual water consumption, excess amount, if any, received during the previous year shall be adjusted while calculating charges for next year.
- If actual daily withdrawal of ground water exceeds the sanctioned quantum in more than ----- instances and the quantum drawn is such that the rate of ground water charges increases, then the rate as per the changed quantum shall be charged for number of days, the ground water withdrawal is in excess.
- If the actual quantum of ground water withdrawal per day is less and such that the rate of ground water charges falls in lower slab, then charges shall be payable as per the lower slab and the excess amount received shall be adjusted in the subsequent year.

1.9.1.1 Existing industries/ infrastructure/ mining projects

- In case of existing industries and mines, check the date of commencement of operation from CTE/ Industry profile/ Environmental Clearance.
- In case of existing infrastructure projects, check date of establishment.
- If the project is operational prior to 24.09.2020, charges will be payable from 24.09.2020.
- .

1.9.1.2 New industries/ mines/ infrastructure projects

- In case of new industries which have been established after 24.09.2020, charges will be payable from the date of start of validity of NOC.

1.9.2 Renewal of NOC

- In case of renewal of NOC, charges will be payable from 24.09.2020.
- The charges will be calculated from 24.09.2020 till date of completion of one year from date of start of validity of NOC.
- Ground water abstraction/ restoration charges will be calculated on annual basis.

- Charges as per categories of Ground Water Resource Assessment- as on 1st January of each year.
- Those who have already deposited charges, their charges will be revised as per new category w.e.f. 1st January of each year.
- 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 in each renewal, subject to their satisfactory performance and verification.
-
- Users located in safe areas, who had obtained NOC prior to 24.09.2020 and had implemented recharge measures to the tune of 50% or more of the annual ground water withdrawal shall be eligible for 50% rebate in each renewal.
- Users who had obtained NOC prior to 24.09.2020 but have failed to implement recharge measures as per the then prevailing guidelines (2015) shall be liable to pay penalty of Rs, 1 lakh and shall not be eligible for rebate in ground water abstraction/ restoration charges.
- Users who had obtained NOC prior to 24.09.2020 and have not been able to adopt recharge measures due to shallow ground water level in the area shall not be liable to pay penalty. But they will not be eligible for rebate in ground water abstraction/ restoration charges.
- Users who had obtained NOC prior to 24.09.2020 and had adopted recharge measures as per the recharge norms of the prevailing guidelines, but have failed to maintain those structures shall be liable to pay penalty of Rs. 1 lakh. Though they will be eligible to claim rebate as per the guidelines in ground water abstraction/ restoration charges.

Sample Calculation for Abstraction/Restoration Charges for renewal cases, assuming that category of the area has not changed :

Prior to 24.09.2020

Sample Calculator for Renewal NOC expiring prior to 24.09.2020					
GW requirement (m3/day)	525				
Annual quantum (m3/year)	1,91,625				
Area category	OE				
	Validity Start date	Validity End date			
Validity of Previous NOC	28-Feb-17	27-Feb-19			
Deemed to extended NOC validity (system generated)	28-Feb-19	27-Feb-21			
Renewed NOC Validity	28-Feb-21	27-Feb-23			
Abstraction charges calculated from 24-Sep-2020 to 27-Feb-2021 + 28-Feb-2021 to 27-Feb-2022					
	Date of New Guideline / Date of start of validity of renewed NOC	Date of NOC expiry	No. of Days for the abstraction charges to be paid / No. of	Rates of abstraction charges	Abstraction charges

			Operation days		
Abstraction charges to be paid from 24-09-2020 to 27-02-2021	24-Sep-20	27-Feb-21	157	10	824250
Abstraction charges to be paid from 28-02-2021 to 27-02-2022	28-Feb-21	27-Feb-22	365	10	1916250
Net Abstraction charges					27,40,500.00
Net Abstraction charges (after 50% rebate, If applicable)					13,70,250.00

After 24.09.2020

Sample Calculator for Renewal NOC expiring after 24.09.2020 and before the date of issuance of NOC					
GW requirement (m3/day)	430				
Annual quantum (m3/year)	1,56,950				
Area category	OE				
	Validity Start date	Validity End date			
Previous NOC Validity	31-Oct-18	30-Oct-20			
System generated NOC Validity	31-Oct-20	30-Oct-22			
Abstraction charges calculated from 24-Sep-2020 to 30-Oct-2020 + 31-Oct-2020 to 30-Oct-2021					
	Date of New Guideline / Date of start of validity of renewed NOC	Date of NOC expiry	No. of Days for the abstraction charges to be paid	Rates of abstraction charges	Abstraction charges
Abstraction charges to be paid from 24-Sep-2020 to 30-Oct-2020	24-Sep-20	30-Oct-20	37	10	159100
Abstraction charges to be paid from 31-Oct-2020 to 30-Oct-2021	31-Oct-20	30-Oct-21	365	10	1569500
Net Abstraction charges					17,28,600.00
Net Abstraction charges (after 50% rebate, If applicable)					8,64,300.00

Chapter-2

Documents Required

Documents required to be submitted with applications for various purposes are listed in this chapter.

2.1 Issuance of NOC

2.1.1 Documents required for Industrial Projects

Sl. No.	Documents	Withdrawal Less than 10 KLD	Withdrawal between 10 to 100 KLD	Withdrawal more than 100 KLD
Fresh (Industry)				
1	Consent to Establish/Operate from State Pollution Control Board or letter from MoEF, or letter from State level Environmental Impact Assessment Authority or any other letter from statutory agencies indicating date of commencement of project.	Yes	Yes	Yes
2	Certificate/Affidavit of non/partial availability of water from local government water supply agency in respect of all categories of assessment units	No	Yes	Yes
3	Ground water quality report of existing ground water abstraction structure from NABL accredited/ govt. approved lab (In case of saline).	Yes	Yes	Yes
4	Impact Assessment Report with GW modeling	No	No	Refer to Para 8a & Appendix-A
5	In OE Areas MSME Certificate in case of MSME (in case of water requirement is 10 KLD or more in OE areas, for new projects only) or Certificate of Medium Enterprise if groundwater requirement is less than 10 KLD	Yes	Yes	Yes
6	If located in Industrial Areas declared by Central/ State Govt, Documentary Proof of same	No	No	Yes
Renewal (Industry)				
1	Site Inspection/ Self-inspection report (pl refer NOCAP portal, www.cgwa-noc.gov.in) and compliance report	Yes	Yes	Yes
2	Water audit reports by certified auditors (in case of water requirement is more than 100 KLD) as per guidelines.	No	No	Yes
3	Certificate/Affidavit of non/partial availability of water from local government water supply agency in respect of all categories of assessment units	No	Yes	Yes
4	Ground water quality report of existing ground water abstraction structure from NABL accredited/ govt. approved lab (In case of saline)	Yes	Yes	Yes
5	Impact Assessment Report with GW modeling	No	No	Refer to Para 8a & Appendix-A
6	Documentary proof justifying the increase of quantum of GW abstraction.	Yes	Yes	Yes

7	If located in Industrial Areas declared by Central/ State Govt, Documentary Proof of same	No	No	Yes
---	---	----	----	-----

2.1.2 Documents required for Infrastructure Projects

Sl. No.	Documents	Withdrawal Less than 10 KLD	Withdrawal between 10 to 100 KLD	Withdrawal more than 100 KLD
Fresh (Infrastructure)				
For construction activity				
1	Document as proof of new establishment / commencement of operation i.e. Consent to Establish/ Environmental Clearance/ building plan approval or any other document from a statutory agency OR Consent to Operate for existing projects from State Pollution Control Board or letter from MoEF, or letter from State level Environmental Impact Assessment Authority or any other letter from statutory agencies indicating date of commencement of project	Yes	yes	yes
2	Duly notarized affidavit on non-judicial stamp paper of Rs. 50/- by the applicant, confirming non/ inadequate availability of public water supply (in case water requirement is less than 10 KLD). OR	Yes	No	No
3	Certificate from water supply agency regarding non/partial availability of water from any other source in case water is required for construction in safe and semi critical areas. OR	No	Yes	Yes
4	Certificate from a government agency regarding non /partial availability of treated sewage water for construction within 10 km radius of the site in critical and over-exploited areas.	No	Yes	Yes
5	Detailed report from projects falling within 500 m from the periphery of demarcated wetland areas indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas	Yes	Yes	Yes
	Certificate/ Duly notarized affidavit (on non-judicial stamp paper of Rs. 50) of wetland from projects falling beyond 500m from the periphery of demarcated wetland areas (only in the districts where the wetland is located)	Yes	Yes	Yes
6	Ground water quality report of existing / nearby existing wells ground water abstraction structure from NABL accredited/ govt. approved lab (In case of saline)	Yes	Yes	Yes
7	Bharatkosh receipt for depositing Application Fee, GW abstraction/restoration charges (for offline payment)	Yes	Yes	Yes
8	Copy of Rain Water Harvesting Plan submitted to Government agency by the applicant or a proposal for rain water harvesting/ recharge in the project premises as per the prevailing Model Building Bye Laws issued by Ministry of Housing & Urban Affairs, Government of India	Yes	Yes	Yes

9	Impact Assessment Report with ground water modelling by Accredited Consultant in case Dewatering is involved.	Refer to Para 8c & Appendix-A		
For Drinking and Domestic use:				
1	Document as proof of new establishment / commencement of operation, i.e. Consent to Establish/ Environmental Clearance/ any other document from a statutory agency OR Consent to Operate for existing projects from State Pollution Control Board or letter from MoEF, or letter from State level Environmental Impact Assessment Authority or any other letter from statutory agencies indicating date of commencement of project	Yes	Yes	Yes
2	Duly notarized affidavit on non-judicial stamp paper of Rs. 50/- by the applicant, confirming non/ inadequate availability of public water supply (in case water requirement is less than 10 KLD). OR Certificate of non/partial availability of water from local government water supply agency in respect of all categories of assessment units.	Yes	No	No
3	Ground water quality report of existing / nearby ground water abstraction structure from NABL accredited/govt. approved lab	No	Yes	Yes
4	Water requirement for drinking and domestic purpose to be computed as per the National building code (NBC) 2016. (pl refer NOCAP portal, www.cgwa-noc.gov.in).	Yes	Yes	Yes
5	Completion certificate from the concerned agency for infrastructure projects/ duly notarized affidavit on non-judicial stamp paper of Rs. 50/- by the applicant.	No	Yes	Yes
6	Duly notarized affidavit on non-judicial stamp paper of Rs. 50/- regarding installation of STP (For New Projects) in case water requirement is more than 20 KLD	No	Yes	Yes
7	Detailed report from projects falling within 500 m from the periphery of demarcated wetland areas indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas	Yes	Yes	Yes
	Certificate/Affidavit (on non-judicial stamp paper of Rs. 50) of wetland from projects falling beyond 500m from the periphery of demarcated wetland areas (only in the districts where the wetland is located)	Yes	Yes	Yes
8	Copy of Rain Water Harvesting Plan submitted to Government agency by the applicant or a proposal for rain water harvesting/ recharge in the project premises as per the prevailing Model Building Bye Laws issued by Ministry of Housing & Urban Affairs, Government of India	Yes	Yes	Yes
9	Bharatkosh receipt for depositing Application Fee and ground water abstraction/ restoration charges (for Direct Bharatkosh payments)	Yes	Yes	Yes
Renewal (Infrastructure)				

For construction activity (Renewal)				
1	Duly notarized affidavit on non-judicial stamp paper of Rs. 50/-by the applicant, confirming non/inadequate availability of public water supply (in case water requirement is less than 10 KLD).	Yes	No	No
2	Certificate from water supply agency regarding non/partial availability of water from any other source in case water is required for construction in safe and semi critical areas. OR	No	Yes	Yes
3	Certificate from a government agency regarding non /partial availability of treated sewage water for construction within 10 km radius of the site in critical and over-exploited areas.	No	Yes	Yes
2	Site Inspection/ Self-inspection report (pl refer NOCAP portal, www.cgwa-noc.gov.in) and compliance report	Yes	Yes	Yes
3	Ground water quality report of existing ground water abstraction structure from NABL accredited/ govt. approved lab (In case of saline)	Yes	Yes	Yes
4	Detailed report from projects falling within 500 m from the periphery of demarcated wetland areas indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas	Yes	Yes	Yes
	Certificate/ Duly notarized affidavit (on non-judicial stamp paper of Rs. 50) of wetland from projects falling beyond 500m from the periphery of demarcated wetland areas (only in the districts where the wetland is located)	Yes	Yes	Yes
5	Bharatkosh receipt for depositing Application Fee, GW abstraction/restoration charges (for Direct Bharatkosh payments -)	Yes	Yes	Yes
	Impact Assessment Report with ground water modelling by Accredited Consultant in case Dewatering is involved.	Refer to Para 8c & Appendix-A		
7	Documentary proof justifying the increase of quantum of GW abstraction.	Yes	Yes	Yes
For Drinking and Domestic use:				
1	Duly notarized affidavit on non-judicial stamp paper of Rs. 50/- by the applicant, confirming non/inadequate availability of public water supply (in case water requirement is less than 10 KLD). OR	Yes	No	No
	Certificate of non/partial availability of water from local government water supply agency in respect of all categories of assessment units.	No	Yes	Yes
2	Self inspection report (pl refer NOCAP portal, www.cgwa-noc.gov.in) and compliance report	Yes	Yes	Yes
3	Ground water quality report from NABL accredited/ Govt. approved laboratory	No	Yes	Yes
4	Detailed report from projects falling within 500 m from the periphery of demarcated wetland areas indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas	Yes	Yes	Yes
	Certificate/duly notarized Affidavit (on non-judicial stamp paper of Rs. 50) of wetland from projects falling beyond 500 m from the periphery of demarcated wetland areas (only in the	Yes	Yes	Yes

	districts where the wetland is located)			
5	Water requirement for drinking and domestic purpose to be computed as per the National building code (NBC) 2016. (pl refer NOCAP portal, www.cgwa-noc.gov.in). Calculation of water requirement for green belt to be estimated as per the norms. (Norms: 3-5 lt./sqm)	Yes	Yes	Yes
6	Documentary proof justifying the increase of quantum of GW abstraction.	Yes	Yes	Yes

2.1.3 Documents required for Mining Projects

SI. No.	Documents	Withdrawal Less than 10 KLD	Withdrawal between 10 to 100 KLD	Withdrawal more than 100 KLD
Fresh (Mining)				
1	Approved Mine Plan as per approving authority	Yes	Yes	Yes
2	Comprehensive hydrogeological report/ Modelling Study including year wise, bench wise Dewatering Impact Assessment on groundwater conditions in core and buffer zones of the mine by Accredited Consultants	Refer to Para 8b & Appendix-A		
3	Ground water quality report of existing well from NABL accredited/govt. approved lab in case of saline.	Yes	Yes	Yes
Renewal (Mining)				
1	Site Inspection/ Self-Inspection report (pl refer NOCAP portal, www.cgwa-noc.gov.in) and compliance report	Yes	Yes	Yes
2	Comprehensive hydrogeological report/ Modelling Report including year wise, bench wise Dewatering Impact Assessment on groundwater conditions in core and buffer zones of the mine by Accredited Consultants	Refer to Para 8b & Appendix-A		
3	Water quality report of mine dewatering and existing tubewells/Borewells through NABL /Govt approved lab in case of saline	Yes	Yes	Yes

2.1.4 Documents required for Residential apartments/Group Housing societies

SI. No.	Documents	Withdrawal Less than 10 KLD	Withdrawal between 10 to 100 KLD	Withdrawal more than 100 KLD
Fresh (Residential apartments/Group Housing societies)				
1	Document as proof of new establishment / commencement of operation i.e. Consent to Establish/ Environmental Clearance/ any other document from a statutory agency OR Consent to Operate for existing projects from State Pollution Control Board or letter from MoEF, or letter from State level Environmental Impact Assessment Authority or any other letter from statutory agencies indicating date of commencement of project	Yes	Yes	Yes
2	Affidavit on non-judicial stamp paper of Rs.	Yes*	NA	NA

	10/- by the applicant, confirming non/inadequate availability of public water supply (in case of ground water requirement up to 10 KLD)*			
	Certificate of non/partial availability of water from local government water supply agency (in case of ground water requirement more than 10 KLD)*	NA	Yes*	Yes*
3	Ground water quality report of existing or nearby ground water abstraction structure from NABL accredited/govt. approved lab	No	Yes	Yes
4	Water requirement for drinking and domestic purpose to be computed as per the National building code (NBC) 2016. (pl refer NOCAP portal, www.cgwa-noc.gov.in)	No	Yes	Yes
5	Installation of STP in case of water requirement is more than 20 KLD (for new projects)	No	Yes	Yes
6	Detailed report from projects falling within 500 m from the periphery of demarcated wetland areas indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas	Yes	Yes	Yes
	Certificate/duly notarized Affidavit (on non-judicial stamp paper of Rs. 50) of wetland from projects falling beyond 500m from the periphery of demarcated wetland areas (only in the districts where the wetland is located)	Yes	Yes	Yes
7	Copy of Rain Water Harvesting Plan submitted to Government agency by the applicant or a proposal for rain water harvesting/ recharge in the project premises as per the prevailing Model Building Bye Laws issued by Ministry of Housing & Urban Affairs, Government of India	Yes	Yes	Yes

Sl. No.	Documents	Withdrawal Less than 10 KLD	Withdrawal between 10 to 100 KLD	Withdrawal more than 100 KLD
Renewal (Residential apartments/Group Housing societies)				
1	Self inspection report (pl refer NOCAP portal, www.cgwa-noc.gov.in) and compliance report	Yes	Yes	Yes
2	Affidavit on non-judicial stamp paper of Rs. 10/- by the applicant, confirming non/inadequate availability of public water supply (in case of water requirement is up to 10 KLD)*	Yes*	NA	NA
	Certificate regarding non/partial availability of water supply from the local government water supply agency*	NA	Yes*	Yes*
3	Ground water quality report of existing well from NABL accredited/govt. approved lab	Yes	Yes	Yes
4	Detailed report from projects falling within 500 m from the periphery of demarcated	Yes	Yes	Yes

	wetland areas indicating that any ground water abstraction by the project proponent does not affect the protected wetland areas			
	Certificate/duly notarized Affidavit (on non-judicial stamp paper of Rs. 50) of wetland from projects falling beyond 500 m from the periphery of demarcated wetland areas (only in the districts where the wetland is located)	Yes	Yes	Yes
5	Documentary proof justifying the increase of quantum of GW abstraction.	Yes	Yes	Yes

*The categories are exempted up to 20 KLD except if there is Swimming Pool in the Society/ Apartments

2.1.5 Documents required for government water supply agencies

Sl. No.	Documents	Withdrawal Less than 10 KLD	Withdrawal between 10 to 100 KLD	Withdrawal more than 100 KLD
Fresh (Government water supply agencies)				
1	Approval of the scheme/project	Yes	Yes	Yes
2	Ground water quality report of existing or nearby well from NABL accredited/govt. approved lab	No	Yes	Yes
3	Water requirement for drinking and domestic purpose to be computed as per the National building code (NBC) 2016. (pl refer NOCAP portal, www.cgwa-noc.gov.in)	Yes	Yes	Yes
Renewal (Government water supply agencies)				
1	Affidavit on compliance report of NOC conditions for renewal cases, in case of water requirement is less than 100 KLD (pl refer NOCAP portal, www.cgwa-noc.gov.in)	Yes	No	No
	Self-Inspection report (pl refer NOCAP portal, www.cgwa-noc.gov.in) and compliance report	No	Yes	Yes
2	Ground water quality report of existing well from NABL accredited/govt. approved lab	No	Yes	Yes

2.1.6 Documents required for Bulk Water Supply

Sl. No.	Documents	Withdrawal Less than 10 KLD	Withdrawal between 10 to 100 KLD	Withdrawal more than 100 KLD
1	Proof of ownership of land of size 200 sqm or more on which abstraction structure is installed	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
2	GW Quality Report of existing or nearby ground water abstraction structure from NABL accredited/ govt. approved lab	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>
4	Proof of ownership/ Lease of tanker/ RC Book.	<u>Yes</u>	<u>Yes</u>	<u>Yes</u>

For all types of projects Note:

Affidavit (self-Declaration) on Rs 50/ stamp paper is to be submitted by the Project Proponent, in case he/she fails to produce the required documents related to non/ inadequate availability of public water supply from the concerned authorities. They are liable to face legal action in case the information furnished by the applicant is found to be incorrect.

After checking of the documents and approval from the Admin/Members/Chairman the NOC will be kept pending till the firm submit required water abstraction/restoration charges and penalty.

Chapter 3

Abstraction of Saline Groundwater

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. **However, in case of delayed submission of application, EC shall be applicable as per the rates prescribed for illegal extraction in Safe Areas.**

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 are given below.

3.1 Detailed Guidelines for Abstraction of Saline Ground Water

Water having EC above 5000 μ siemens/cm at 25°C is saline water. Any user desirous of utilizing saline groundwater is permitted to extract saline ground water and will be exempted from payment of ground water abstraction / restoration charges. However, all such users need to have proper effluent water disposal plan to avoid degrading of environment/ surroundings. Further, NOC shall not be granted to new major industries in over-exploited assessment units.

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

3.1.1 Completely Saline Assessment Units

- a) All the users withdrawing more than 100 KLD of saline groundwater, need to submit Impact Assessment Report with Modelling including water level /water quality /land subsidence in and around the project area.
- b) Ground water quality data of existing bore well/ tube well/ dug well from any NABL accredited laboratory or Govt. approved laboratory.
- c) Oil and Mining companies to submit approved plan by the concerned Govt. agency/ department in case of abstraction/dewatering or injection.

- d) All the users' need to adopt rain water harvesting as per building bye laws within premises.

3.1.2 Partially Saline Assessment Units

In the areas where saline water occur in lenses or fresh and saline zones overly/ underly each other, saline water ingress is expected. In such cases, information on depth wise occurrence of saline/ fresh ground water zones/ interface shall be made available by Regional Office, CGWB.

- a) All the users who need to draw saline ground water more than 100 KLD shall submit Impact Assessment Report with modelling, indicating saline - fresh water interface, impact of saline ground water abstraction on the ground water regime or impact of saline water pumping on saline water ingress in coastal areas. The saline water withdrawal shall avoid up coning of saline water into fresh water, mixing or ingress towards land.
- b) Piezometer should be constructed and regular monitoring to be taken up for piezometric level & water quality of the aquifer from which the saline water is pumped, as well as, the adjacent/ overlying/underlying fresh water aquifers.
- c) In case well starts yielding fresh water instead of saline water, project proponent shall immediately inform the Regional Office, CGWB. The project proponent shall have to pay groundwater abstraction /restoration charges as per the guidelines.
- d) All the users' needs need to adopt rain water harvesting as per building bye laws within premises

Chapter 4

Groundwater Abstraction/ Restoration Charges/ Penalties and Environmental Compensation

Every (existing/ new/ renewal) project proponent (Drinking and domestic use for residential apartments/Group Housing Societies/ Government Water Supply agencies in Urban areas Infrastructure, Industry, Mining, Packaged drinking water units, Bulk water suppliers) has to pay Groundwater abstraction/ restoration charges w.e.f. 24/9/2020 as well as Environmental Compensation (wherever applicable) as mentioned in Section 5 and 6 of revised CGWA Guideline (2020) dated 24/9/2020 and amendment dated 29.03.2023 thereof.

4.1 Groundwater 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 in each renewal, subject to their satisfactory performance and verification.
- Users who had obtained NOC prior to 24.09.2020 and have adopted artificial recharge but do not satisfy the recharge norms as per the prevailing guidelines (2015) will not qualify for rebate till they complete recharge interventions.
- Users located in safe areas, who had obtained NOC prior to 24.09.2020 and had implemented recharge measures to the tune of 50% or more of the annual ground water withdrawal shall be eligible for 50% rebate in each renewal.
- Users who had obtained NOC prior to 24.09.2020 but have failed to implement recharge measures as per the then prevailing guidelines (2015) shall be liable to pay penalty of Rs, 1 lakh and shall not

be eligible for rebate in ground water abstraction/ restoration charges.

- Users who had obtained NOC prior to 24.09.2020 and have not been able to adopt recharge measures due to shallow ground water level in the area shall not be liable to pay penalty. But they will not be eligible for rebate in ground water abstraction/ restoration charges.
- Users who had obtained NOC prior to 24.09.2020 and had adopted recharge measures as per the recharge norms of the prevailing guidelines, but have failed to **maintain** those structures shall be liable to pay penalty of Rs. 1 lakh. Though they will be eligible to claim rebate as per the guidelines in ground water abstraction/ restoration charges in each renewal.

4.2 Compliance Monitoring and taking punitive action

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.

The ground water users shall fill up self inspection module and submit for compliance monitoring. Random inspections shall be carried out physically by Regional Offices of CGWB in 10% of the cases. Proforma for site inspection is given in Annexure III.

4.2.1 Issuance of show cause notice

Show Cause Notice is to be issued under the following circumstances:

- 1) If a ground water user who has obtained NOC but has failed to submit self compliance report.
- 2) If a ground water user who has obtained NOC fails to comply with any of the conditions specified in the NOC.
- 3) If a ground water user furnished false information regarding quantum of ground water withdrawal.
- 4) If a ground water user fails to apply for renewal of NOC in time as per the guidelines.
- 5) If a ground water user withdraws ground water without obtaining NOC.

Samples of show cause notices are given in **Annexures 4 to 8**.

4.2.2 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 of the revised CGWA Guideline (2020). Provision of Penalty is for renewal cases or projects who had got NOC for ground water abstraction/de-watering and have failed to comply with the conditions specified in the NOC. The penalty as per notified guidelines shall be applicable in cases of violations/ non -compliance where NOC has been granted after 24.09.2020. In cases of violations/ non -compliance, where NOC had been granted prior to 24.09.2020, penalty of Rs. 1 lakh as per Section 15 of EPA shall be applicable.

4.2.3 Environmental Compensation

Extraction of groundwater 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 groundwater so extracted. The norms prescribed as per the guidelines shall be utilized for calculating the Environmental compensation as mentioned below:

$EC_{GW} = \text{Groundwater consumption per day} \times \text{Environmental Compensation rate (ECR}_{GW}) \times \text{No. of days (pro-rata basis)} \times \text{Deterrence factor.}$

Deterrence Factor based on the duration of illegal ground water extraction shall be applied to compensate losses and environmental damage (for packaged drinking water units e.g. mining, industries, infrastructure, and infrastructural dewatering projects) as per Table 15.4 of the Guidelines.

Environmental compensation will be imposed based on groundwater abstraction, type of project and category of block in accordance with Guidelines 2020 dated 24/9/2020. Minimum Environmental compensation is Rs. 1,00,000/- irrespective of quantity, type and category of block.

4.2.4 Taking punitive action and Prosecution

District Magistrate/ District Collector/ Sub Divisional Magistrates of each Revenue District/Sub division as Authorized Officers, have been delegated the power to:

- Seal illegal wells,
- Disconnect electricity supply to the energized well,
- Launch prosecution against offenders etc.
- Grievance redressal related to ground water.

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 respective States/ Union Territories shall also be appointed as Authorized officers in consultation with the State/ UT Governments.

Chapter 5

Implementation of Artificial Recharge

All the units should implement rooftop rainwater harvesting system in the buildings within its lease area, as per the model building bye-laws issued by Ministry of Housing & Urban Affairs / Local Authority.

Artificial Recharge Plans may be prepared based on “Manual on Artificial Recharge of Ground Water Recharge” as prepared by Central Ground Water Board and available on CGWB website <http://cgwb.gov.in/documents/>.

5.1 Artificial Recharge/ Rain Water Harvesting Measures

- Roof top/paved area/open area rain water harvesting/ recharge is mandatory in the project premises except industries which are likely to pollute groundwater (chemical, pharmaceutical, dyes, pigments, paints, textiles, tannery, pesticides/ insecticides, fertilizers, slaughter house, explosives etc.). **In such cases project proponents shall store the harvested rain water in surface storage tanks for use in the industry.**
- In renewal cases, if any project has successfully executed recharge measures as specified in NOC issued prior to 24.09.2020 and maintaining recharge structures within and outside premises/mining lease area, they will be **entitled for a rebate of 50% in ground water abstraction/restoration charges in each renewal.**
- All the projects withdrawing saline ground water shall store rainwater runoff generated within premises in surface storage tanks for use in the project.

5.2 Conditions regarding Design and Number of Recharge/Storage Structures

1. For design and number of recharge/storage structures (only from roof top) are to be computed based on intensity of rainfall i.e. mm/15 min (20 to 40mm depending on area and rainfall pattern). The number of structures should be optimized so that maximum rainwater can be harvested.
2. Depth of recharge structure should be down to water level in alluvium area and down to weathered part encountered in hard rock area. Recharge shaft is suitable for the area where water level is within 30m from ground level. Injection wells beyond impervious layers are suitable where water level is more than 30m.
3. Trench with recharge shaft may be suitable in hard rock areas depending on hydraulic conductivity of formation and water level. If abandoned/functional dug

well/tube well/bore well is already existing, these can be utilized for recharge purpose with due care to avoid contamination.

4. Collection of rainwater from surfaces other than roof-top should include specifically designed collection system.
5. Storm water drainage line should be separate from waste water drainage line.
6. BIS Standard **IS 15797:2008** for Roof Top RWH may be consulted and adhered to.

Chapter 6

Amendments approved in CGWA Board Meetings

6.1 Amendments approved in 46th CGWA Meeting 08-06-2021

1. Applications for fresh/ renewal of NOC by the existing users which have been rejected on grounds of either non-submission of required documents or non- fulfilment of various documents/ criteria, shall be given a one-time relaxation. Such existing users who have re-applied for NOC after 30.06.2020 shall be exempted to pay Environmental Compensation/ Penalty till 31.03.2022. However, they shall be liable to pay the water abstraction/ restoration charges w.e.f. 24.09.2020.
2. Exemption of EC shall also be applicable to existing users who have failed to submit application for NOC till 30.06.2020. However, they shall be liable to pay penalty of Rs. one lakh. They shall also be liable to pay ground water abstraction/ restoration charges w.e.f. 24.09.2020 or date of its commencement whichever is later.
3. For the submission of Impact Assessment Reports by industries, Comprehensive Hydrogeological reports by Mining Projects and Water Audit Reports, the date is hereby extended upto 31.03.2022. No Environmental Compensation shall be imposed on such users if the said report is submitted in the prescribed time. The Environmental Compensation already paid by the project proponents shall be adjusted in the Abstraction/restoration Charges of the unit for subsequent years.
4. To reduce the financial burden on the project proponents, the project proponents shall now be required to make a yearly advance payment of the Ground Water Abstraction/Restoration Charges, which would be adjusted in succeeding years based on actual ground water withdrawal, instead of one-time advance payment of Ground Water Abstraction/Restoration Charges for entire NOC period.
5. All the project proponents/users drawing ground water shall be required to mandatorily install tamper-proof Digital Water Flow Meter with/ without Telemetry System by 31.03.2022 or as specified in NOC, whichever is later.
6. The applicants/project proponents who are facing the issue of double taxation due to levy of water charges/ cess by States as well as water abstraction/restoration charges by CGWA, may seek reimbursement of water charges/ cess paid to State Governments from CGWA in the subsequent years limited to the water abstraction/restoration charges levied by CGWA.

6.2 Amendments Approved in 45thCGWA Meeting 21-01-2021

1. The applicants, who are required to conduct modeling studies shall keep the model for at least 3 years. CGWA shall maintain archive of models.
2. It was agreed that existing industries which are located in safe areas and had submitted their applications prior to 24.09.2020 may be given time extension for submission of impact assessment reports till 30.06.2021 and no Environmental Compensation should be imposed w.e.f. 1.1.2021 on such units, as it was not mandatory for such industries as per the notified guidelines. Conditional NOC shall be issued in such cases.
3. Time frame for submission of Impact Assessment Report in Over-exploited, Critical and Semi-critical areas by 30.6.2021 and Environmental Compensation shall be imposed in such cases w.e.f. 1.1.2021 till the date of submission of report. Their applications will not be rejected as they are existing industries.

In case of mining projects, who had submitted their applications prior to 24.09.2020, it was agreed that time for submission of comprehensive hydrogeological report as per the revised proforma shall be extended till 30.6.2021 and Environmental Compensation shall be imposed w.e.f. 1.1.2021. It was decided that a letter in this regard shall be sent to the Secretary, Ministry of Coal & Mining by the Authority to keep him informed about the decisions taken.

4. The installation of tamper proof digital water flow meters for ground water withdrawal < 10 KLD and tamper digital water flow meter with telemetry > 10 KLD on ground water abstraction structures are made mandatory.
5. Members approved the draft guidelines for saline ground water abstraction with a few minor modifications such as provision of online/real time monitoring of Electrical Conductivity of ground water being extracted by the applicant and dropping the requirement of submission of data on land subsidence.
6. Guidelines for bulk water supply with the following suggestions:
 - a. It should be only for drinking and domestic purposes.
 - b. Agency responsible for monitoring of water quality being supplied by bulk water suppliers through private tankers may be specified.
 - c. Condition of GPS tracking should be removed.
7. Ministry of Environment, Forests and Climate vide its notification dated 27.09.2020 has extended the validity of Environmental Clearance of all such projects, which was due to expire during 2020-2021 to 31st March, 2021 or six months from the date of expiry whichever is earlier. **Vide another**

notification dated 18.12.2020, the MoEF&CC has informed that the year 2020-21 shall not be considered for the purpose of the calculation of the period of validity of Terms of Reference and the prior Environmental Clearances granted by the Ministry. It was agreed that CGWA may also bring out a Public Notice stating that validity of NOCs issued, which were due to expire during 2020-2021 shall be deemed to be extended till 31.3.2021.

6.3 Amendments Approved in 44th CGWA Meeting 20-10-2020

1. Obtaining Water Quality Report from NABL Accredited Lab as mandatory documents from project proponents (PP) for the cases where the water requirement is < 10 KLD and cases were submitted before 24/9/2020.

Water Quality Report from Accredited NABL lab in **such cases shall not be mandatory document** and PP may be exempted from submitting this document.

2. Obtaining Impact Assessment Report from the proponents drawing more than 100 KLD in Critical and Semi – critical assessment units and Water Audit Report from those drawing more than 100 KLD in Critical, Semi-critical and Safe assessment units in case of applications received prior to 24.09.2020.

NOC may be issued subject to the condition that the proponent will submit **Impact Assessment Report prepared by Accredited Consultant by 30/6/2021 and Water Audit Report prepared by certified auditors by 31/03/2021** (only in renewal cases). **Failure to submit the above reports in the prescribed time, will lead to cancellation of NOC.** The NOC Cases for **Over Exploited Assessment Units shall continue to be processed as per the notified guidelines dated 24/9/2020.**

3. Processing of the existing cases submitted in NOCAP **between 30/6/2020 and 24/9/2020.** In all such cases, a penalty of Rs 1 lakh will be imposed.
4. Processing of the existing cases submitted in NOCAP **after 24/9/2020** - In all such cases, environmental compensation as per guidelines will be imposed.
5. To speed up the process of issuance of NOC, the delegation of power to approve NOC to the Regional Offices and various functionaries at CHQ is given below:

Quantum of GW abstraction (m3/day)	Approving Authority
Up to 100	Regional Director of the Region
>100 to 500	Regional Director, CGWA
>500 to 1000	Member, CGWA

1000	Chairman
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6. Application fee has been increased for issuance of fresh NOC from Rs. 1000 to Rs. 10000 and that for renewal of NOC from Rs. 500 to Rs. 5000. Provision in the Bharatkosh have been made under the head Water resources>NOC Processing Fee Revised Fresh application and Water resources>NOC Processing Fee Revised for Renewal

File No. CGWA-NOCA/4/2020-CGWA
Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation
Central Ground Water Authority

CORRIGENDUM

Sub: Partial Modification of CGWA Public Notice No. 8/2022, dated 13.10.2022

In partial modification of this Authority's Public Notice **8/2022**, dated **13.10.2022**, following **revision in Point-5** is hereby made.

Point 5 of the above Notice should be read as following.

5. PP can request for revival of rejected application within 60 days of rejection of application (excluding date of rejection). Revival shall be subject to payment of Revival Charges (**presently, Rs 10,000/-**) and fulfilling requirements due to which the application was rejected (*Advance Abstraction Charges and/or incomplete documents*).

(Member Secretary)
CGWA

File No. CGWA-NOCA/4/2020-CGWA
Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation
Central Ground Water Authority

PUBLIC NOTICE No. 08/2022
New Delhi, Dated 13th October, 2022

**ATTENTION: ALL PPs SUBMITTING GROUND WATER NOC APPLICATIONS
WITHOUT FULL PAYMENT OF ADVANCE ABSTRACTION/ RESTORATION
CHARGES AND/ OR WITHOUT COMPLETE DOCUMENTS**

It has come to notice that a number of project proponents are submitting applications without making full payment of Advance Abstraction/ Restoration Charges, as calculated by 'Know Your Charges' (<https://cgwa-noc.gov.in/Sub/Report/GWChargesCalculation/GWChargesCalculation.aspx>) tool (available under Users' Assistance) as per the quantum applied, number of days and category of block.

In the above context, following may be noted.

1. Before applying for/submission of NOC, the PP should calculate Advance Abstraction/ Restoration Charges through the link '**Know Your Charges**' (<https://cgwa-noc.gov.in/Sub/Report/GWChargesCalculation/GWChargesCalculation.aspx>) and deposit **same amount** before submission of NOC Application.
2. Arrears (wef 24.9.2020 or Date of Commencement of Project, whichever is later) and other charges (such as Penalty/ Environmental Compensation), **if any** shall be communicated after approval of NOC and shall have to be deposited by PP for final issuance of NOC.
3. At pre-application submission stage, **all payments** (Application Fee, Abstraction/ Restoration Charges) should be made through **either one** of the two Payment Gateways (Direct Bharatkosh or Via NOCAP). Part payments through different gateways shall not be accepted.
4. Applications submitted **without payment of full** Advance Abstraction/ Restoration **Charges** as calculated above **and/ or without complete documents** shall be **rejected forthwith**. Please note that **Application Fee is non-refundable**.
5. Rejected application can be revived by paying Revival Charges of **Rs 10,000/-**.
6. Final issuance of NOC shall be subject to payment of arrears (wef 24.9.2020 or Date of Commencement of Project, whichever is later)/ Penalty/ EC, **if any**. These charges, **if any**, shall be separately communicated later after scrutiny of documents.

(Member Secretary)
CGWA

Annexure-2

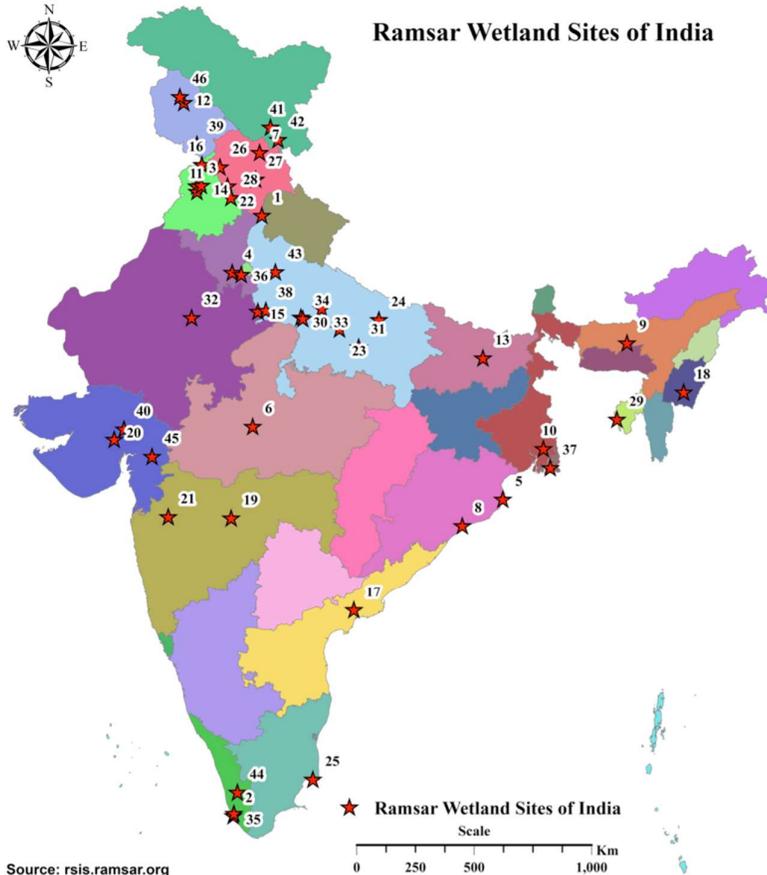
Projects falling beyond 500m from the periphery of demarcated wetland areas shall submit Certificate/ Affidavit of wetland only in the districts where the wetland is located. List of the demarcated wetlands and their districts of occurrence is given below:

List of Notified Wetlands in India as per Ramsar

State	Covered Districts	Name of Wetland
Andhra Pradesh	West Godavari and Krishna	Kolleru Lake
Assam	Kamrup Metropolitan and Kamrup	DeeporBeel
Bihar	Begusarai	Kabartal Wetland
Gujarat	Vadodara and Chhota Udaipur	Wadhvana Wetland
Gujarat	Ahmadabad and Surendranagar	Nalsarovar
Gujarat	Mahesana and Gandhinagar	Thol Lake Wildlife Sanctuary
Haryana	Jhajjar	Bhindawas Wildlife Sanctuary
Haryana	Gurgaon	Sultanpur National Park
Himachal Pradesh	Lahaul&Spiti	Chandertal wetland
Himachal Pradesh	Kullu	Renuka Wetland
Himachal Pradesh	Kangra	Pong Dam lake
Himachal Pradesh	Kangra	Beas Conservation reserve
Himachal Pradesh	Bilaspur and Una	Nangal Wildlife sanctuary
Himachal Pradesh	Sirmaur	Asan Conservation reserve
Himachal Pradesh	Lahaul&Spiti	Tso Morreri
Jammu Kashmir	Baramulla and Gandebal	Wular Lake
Jammu Kashmir	Badgam and Baramulla	Hokera
Jammu Kashmir	Jammu and Udhampur	Surinsar-Mansar Lakes
Kerala	Kollam	Ashtamudi Wetland
Kerala	Kollam	Sasthamkotta Lake

Kerala	Kottayam, Ernakulam and Alappuzha	Vembanad-Kol Wetland
Ladakh	Leh	Tso Morreri
Ladakh	Leh	Tso Kar wetland complex
Madhya Pradesh	Bhopal	Bhoj Wetland
Maharashtra	Nashik	NandurMadhameshwar
Maharashtra	Buldhana	Lonar Lake
Manipur	Bishnupur, Imphal and Thoubal	Loktak Lake
Odisha	Kendrapara and Bhadrak	Bhitarkanika Mangroves
Odisha	Puri, Khorda and Ganjam	Chilika Lake
Punjab	Pathankot, Gurdaspur, Amritsar, Tarn Taran, Hoshiarpur, Kapurthala, Firozpur	Beas Conservation reserve
Punjab	Gurdaspur	Keshopur-Miani Community Reserve
Punjab	Kapurthala	Kanjli
Punjab	Kapurthala	Harike Lake
Punjab	Rupnagar	Nangal Wildlife sanctuary
Punjab	Shahid Bhagat Singh Nagar and Rupnagar	Ropar
Rajasthan	Bharatpur	Keoladeo National Park
Rajasthan	Nagaur, Jaipur and Ajmer	Sambhar Lake
Tripura	Sipahijala	Rudrasagar Lake
Uttar Pradesh	Amroha and Bulandshahar	Upper Ganga River
Uttar Pradesh	Mainpuri and Etawah	Saman Bird Sanctuary
Uttar Pradesh	Mainpuri and Etawah	SarsaiNawarJheel
Uttar Pradesh	Hardoi	Sandi Bird Sanctuary
Uttar Pradesh	Unnao	Nawabganj Bird Sanctuary
Uttar Pradesh	Amethi	Samaspur Bird Sanctuary
Uttar Pradesh	Gonda	Parvati Arga Bird Sanctuary
Uttar Pradesh	Agra and Mathura	Sur Sarovar

Uttarakhand	Dehradun	Asan Conservation reserve
West Bengal	South 24 Parganas, Calcutta, North 24 Parganas	East Calcutta Wetlands
West Bengal	South 24 Parganas and North 24 Parganas	Sundarban Wetland



S.No	Site Name	Designation Date	Area (Sq. Km)
1	Asan Conservation Reserve	21-07-2020	440.33
2	Ashtamudi Wetland	19-08-2002	374.87
3	Beas Conservation Reserve	26-09-2019	437.34
4	Bhindawas Wildlife Sanctuary	25-05-2021	443.41
5	Bhitarkanika Mangroves	19-08-2002	374.87
6	Bhoj Wetland	19-08-2002	374.87
7	Chandertal Wetland	08-11-2005	386.64
8	Chilika Lake	01-10-1981	298.6
9	Deepor Beel	19-08-2002	374.87
10	East Calcutta Wetlands	19-08-2002	374.87
11	Harike Lake	23-03-1990	329.55
12	Hokera Wetland	08-11-2005	386.64
13	Kabartal Wetland	21-07-2020	440.33
14	Kanjli	22-01-2002	372.78
15	Keoladeo National Park	01-10-1981	298.6
16	Keshopur-Miani Community Reserve	26-09-2019	437.34
17	Kolleru Lake	19-08-2002	374.87
18	Loktak Lake	23-03-1990	329.55
19	Lonar Lake	22-07-2020	440.34
20	Nalsarovar	24-09-2012	411.76
21	Nandur Madhameshwar	21-06-2019	436.37
22	Nagal Wildlife Sanctuary	26-09-2019	437.34
23	Nawabganj Bird Sanctuary	19-09-2019	437.27
24	Parvati Arga Bird Sanctuary	02-12-2019	438.01
25	Point Calimere Wildlife and Bird Sanctuary	19-08-2002	374.87
26	Pong Dam Lake	19-08-2002	374.87
27	Renuka Wetland	08-11-2005	386.64
28	Ropar	22-01-2002	372.78
29	Rudrasagar Lake	08-11-2005	386.64
30	Saman Bird Sanctuary	02-12-2019	438.01
31	Samaspur Bird Sanctuary	03-10-2019	437.41
32	Sambar Lake	23-03-1990	329.55
33	Sandi Bird Sanctuary	26-09-2019	437.34
34	Sarsal Nawar Jheel	19-09-2019	437.27
35	Sasthamkotta Lake	19-08-2002	374.87
36	Sultanpur National Park	25-05-2021	443.41
37	Sundarban Wetland	30-01-2019	434.95
38	Sur Sarovar	21-08-2020	440.64
39	Surinsar-Mansar Lakes	08-11-2005	386.64
40	Thol Lake Wildlife Sanctuary	05-04-2021	442.91
41	Tso Kar Wetland Complex	17-11-2020	441.52
42	Tomoriri	19-08-2002	374.87
43	Upper Ganga River	08-11-2005	386.64
44	Vembanad-Kol Wetland	19-08-2002	374.87
45	Wadhvana Wetland	05-04-2021	442.91
46	Wular Lake	23-03-1990	329.55

7. Source: rsis Ramsar.org



Annexure-3

File No. CGWA-NOCA/4/2020-CGWA
Government of India
Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation
Central Ground Water Authority

Public Notice No.10/ 2022
New Delhi, Dated 03.11. 2022

Attention - Ground Water Users from these categories: Industrial/ Infrastructure/ Mining Projects/ Drinking & Domestic Use for Residential Apartments/ Group Housing Societies/ Government Water Supply Agencies in Urban Areas/ Bulk Water Suppliers/ Swimming Pool/ Sport Complex/ Govt Office Building, in the States/UTs of Assam, Arunachal Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Odisha, Rajasthan, Sikkim, Tripura, Uttarakhand, Andaman and Nicobar Islands, Dadra & Nagar Haveli and Daman & Diu.

The deadline for submission of Groundwater NOC applications for already existing projects expired on 30.09.2022. Environmental Compensation (EC)/ Late Submission Fee shall to be imposed on Projects that did not apply or did not make efforts to apply by 30.09.2022. **EC** on entire ground water withdrawal quantum shall be imposed **wef 24.09.2020 or Date of Commencement** of Project (as per application/ other documents like CTE/ CTO/ Mine Plan Approval), whichever is later. **Late Submission Fee of Rs 1,00,000/-** shall also be applicable in all such cases alongside EC. EC and Late Fee as above shall **also be applicable in those cases** where earlier application(s) of firm got rejected and the firm did not apply/ did not make efforts to apply before 30.09.2022.

The above applies only to new applications. **Renewal applications** not submitted timely shall be processed as per **Para 11.0(vii)** of Guidelines dated 24.09.2020.

Member Secretary
CGWA

SITE INSPECTION PROFORMA FOR VERIFICATION OF COMPLIANCE OF CONDITIONS OF NOC BY INDUSTRIES/ INFRASTRUCTURE/ MINING PROJECTS/ URBAN WATER SUPPLY AGENCIES

1. Name of ground water user
2. Industry/infrastructure/ mining project/ Urban Water Supply agencies (Tick any one)
3. Village/ Block/ District/State: -----
4. No. & Date of issuance of NOC: -----
5. Date of latest renewal (if any): -----
6. Validity of NOC (Years): -----
7. Date of site inspection : -----
- 8. Monitoring of compliance of conditions laid down in the NOC:**

S. No.	Conditions as per NOC	Compliance status observed	Remarks
1a	Quantum of ground water withdrawal through abstraction structure (TW/ BW/ DW)	_____ m ³ /d ay Quantum withdrawn by the firm (Check log book)	m ³ /day
1b	No. of ground water abstraction structures	DW ----- TW----- BW----- No. of abstraction structures	DW ----- TW----- BW-----
1c	Common outlet point(s) of abstraction structures fitted with digital water flow meter	Common outlet point(s) to be fitted with flow meters	Check at site Yes/ No
1d	Functional status of flow meter	All flow meters should be functional	Are all flow meters in working condition ? Yes/ No
2a*	Quantum of Dewatering of Groundwater (In case of mine/ infrastructure dewatering projects)	_____ m ³ /day Quantum of dewatering withdrawn by the firm (Check log book)	m ³ /day

S. No.	Conditions as per NOC		Compliance status observed		Remarks
2b*	No. of Mine pits/ sump/ dewatering structure	_____	No. of Mine pits/ sump/ dewatering structure constructed		
2c*	Common outlet point(s) of dewatering structures fitted with digital water flow meter	All common outlet point(s) connected to dewatering structures to be fitted with digital water flow meters	Check at site	Yes/ No	
3	Submission of data on GW extraction/ dewatering to CGWA	GW extraction/ dewatering data to be submitted to CGWA	Whether ground water extraction/ dewatering data submitted to CGWA	Yes/ No. Month up to which data submitted :	
4a	No. of piezometers to be constructed	_____	No. of piezometers constructed	_____	
4b	a) No. of piezometers to be fitted with AWLR/DWLR b) No. of piezometers to be fitted with telemetry	a) _ b)____	a) No. of piezometers fitted with AWLR/DWLR b) No. of piezometers fitted with telemetry	a)_____ b) _____	Attach photographs
4c	Submission of water level data to CGWA	Monthly WL data to be submitted	Whether monthly water level data submitted to Regional Office	Yes/ No Month/ Year up to which data submitted:	
5	Monitoring of GW quality	GW quality to be monitored	Whether quality data submitted to Regional Office	Year up to which data submitted :	
6a	No. of wells to be monitored around the mining area	Both in core and buffer zone	No. of wells monitored around the industry	Core : Buffer :	

S. No.	Conditions as per NOC		Compliance status observed		Remarks
6b	Submission of water level data of core and buffer zone	Pre- and post – monsoon data	Whether water level data of wells monitored submitted to Regional Office	Yes/ No	
7a	Annual quantum of water to be harvested/ recharged (As per NOC issued prior to 24.09.2020)	_____m ³ /annum	Quantum of water harvesting/ recharge as implemented by the firm	_____m ³ /annum	
7b			No. and type of recharge structures implemented inside the premises (Attach photographs)		
			Whether structures are maintained properly	Yes/ No	
7c			No. and type of structures implemented outside the premises (Attach photographs)		
			Locations of structures		
			Whether All the structures are maintained properly	Yes/ No	
8	Recycling/ reuse of water		Check at site the STP/ETP installed (Attach photographs)	Yes/ No	

9*	Water from dewatering in mining/ infrastructure projects to be put to gainful use		Activity for which water from dewatering project is being used		
----	---	--	--	--	--

*Applicable for Mining/Infrastructural dewatering projects only.

Name & signature of Project proponent/
Representative of the firm

Name & signature of Inspecting Officer
officer from Regional Office

10. Status of Compliance of NOC Conditions: Fully/ Partially/ Non-Compliance

11. Valid reasons for non-compliance, if any :

12. Whether action is to be initiated against the industry? : Yes / No

13. Details of Action Taken at the level of Regional Director :

14. Date of issuing Show Cause Notice:

15. Follow – up actions taken/ recommended, if any:

Recommendation of Regional Director : Recommended for renewal (Yes/ No)

Name & Signature of Regional Director with stamp:

(Sample show cause notice in case self compliance / inspection has not been filed by proponent)

**Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation**

**CENTRAL GROUND WATER AUTHORITY
[Constituted under section 3 (3) of Environment (Protection) Act, 1986]**

(Address of Regional Office)
(Email ID of Regional Office)

File No. _____

Date: _____

SHOW-CAUSE NOTICE

Whereas the Central Ground Water Authority, in exercise of its powers under sub-section(2) of section 3 has issued No objection certificate (NOC) with mandatory conditions/ restrictions and safeguard vide File No., dated with a specific time frame for submitting intimation regarding compliance of conditions.

And whereas a review of the status of submission of intimation regarding compliance of conditions as specified in the NOC has revealed that Your Unit has been found not to have complied with the directions for submitting compliance report as specified in the NOC mentioned above, warranting action as per provisions of Environmental (Protection) Act,1986 for violation of conditions of NOC.

Now, therefore, the Authority, in exercise of powers under section 5 of the Environment (Protection) Act, 1986, hereby directs you to show cause as to why the NOC issued to your Industry/ Project/ Firm should not be cancelled and a complaint against your Industry/ Project/ Firm should not be registered with National Green Tribunal under Section 15 and 16 of the Environmental (Protection) Act, 1986 for violation of condition of the NOC. You are hereby given an opportunity to furnish intimation regarding action taken for compliance of the conditions specified in the NOC within 21 days of receipt of this notice, failing which the Authority shall proceed against you as per law, at your own risk, cost and responsibility including imposition of penalty and withdrawal/ cancellation of the NOC.

(Signature)

(Name of the issuing officer)
Designation

To

Industry/Project Proponent (By Name)

.....
.....
.....

Copy to:

1. Collector/Deputy Commissioner/District Magistrate
2. Member Secretary, State Pollution Control Board concerned.

ACKNOWLEDGEMENT

Received the Show-Cause-Notice dated from the Authorized Officer of Central Ground Water Authority
on

A reply to the Show Cause Notice is enclosed/Compliance Report will be submitted along with photographs latest
by

For Industry/Project

Authorized Signatory

(Sample show cause notice in case of non compliance of NOC conditions observed during site inspection)

Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation

CENTRAL GROUND WATER AUTHORITY
[Constituted under section 3 (3) of Environment (Protection) Act, 1986]

(Address of Regional Office)

(Email ID of Regional Office)

File No. _____

Date: _____

SHOW-CAUSE-NOTICE

Whereas Central Ground Water Authority, in exercise of its powers under sub-section(2) of section 3 has issued No objection certificate (NOC) with mandatory conditions/ restrictions and safeguard vide **File No., dated** with a specific time frame for compliance of conditions.

And whereas, the Authority in exercise of its powers and functions under clause (x) of sub-section (2) of section 3 of the Environment (Protection) Act, 1986 had ordered inspection of your unit to check the status of NOC/compliance of conditions of NOC/Guidelines. A copy of the Inspection Report is enclosed herewith.

And whereas, during the course of inspection, your Unit has been found to have contravened by not complying with the mandatory conditions of NOC as mentioned below warranting action as per the provisions of Environment (Protection) Act, 1986 and for violation of conditions of NOC/Guidelines.

(Specify the condition/ conditions that has/ have not been complied with)

Now therefore, the Authority in exercise of powers under section 5 of the Environment (Protection) Act, 1986 hereby directs you to show cause as to why a complaint against your Industry/Project/Unit should not be registered under section 15 of the Environment (Protection) Act, 1986 with National Green Tribunal/Environmental Court for violation of conditions of the NOC. You are hereby given an opportunity to rectify the default/ contravention immediately, in any case not later than 60 days from the date of receipt of this notice, failing which the Authority shall proceed against you as per law, at your own risk, cost and responsibility, including withdrawal/ cancellation of NOC and imposition of penalty.

(Signature)

(Name of the issuing officer)

Designation

To

Industry/Project Proponent (By Name)

.....

Copy to:

1. Collector/ Deputy Commissioner/ District Magistrate

2. Member Secretary, State Pollution Control Board concerned.

ACKNOWLEDGEMENT

Received the Show-Cause-Notice dated from the Authorized Officer of Central Ground Water Authority on

A reply to the Show Cause Notice is enclosed/Compliance Report will be submitted along with photographs latest by

For Industry/Project

Authorized Signatory

(Sample show cause notice in case of furnishing false information on ground water withdrawal by mines)

Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation

CENTRAL GROUND WATER AUTHORITY
[Constituted under section 3 (3) of Environment (Protection) Act, 1986]

(Address of Regional Office)
(Email ID of Regional Office)

File No. _____

Date: _____

SHOW-CAUSE-NOTICE

Whereas, the Authority has issued 'Guidelines to control and regulate ground water extraction in India' vide notification number 3289(E) dated 24th September, 2020, according to which "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."

And whereas, during the processing stage of your NOC Application, the Authority had received a request for significant reduction of the quantum of dewatering and NOC was issued for the reduced quantum.

And whereas a site-inspection report has been received from (name and designation of inspecting officer) which indicates that initial quantum for which permission was asked for was close to actual dewatering requirement and was later reduced to avoid or minimise ground water abstraction/ Restoration charges as mentioned below:-

Name of project	Dewatering Volume (m ³ /Day) (Pre-monsoon/ Post- monsoon Period)	NOC Dewatering Volume (m ³ /Day)	Application Dewatering Volume (m ³ /Day)
.....
		

And whereas, it has come to the notice of Authority that not only you have contravened the NOC conditions as the actual dewatering quantum by your project exceeds the dewatering volume mentioned in the issued NOC, but you have also misled the Authority by providing false and incorrect information with a view to deceive the Authority. This malafide intention with intent to evade payment of charges and willful concealment / suppression of material information is considered as a serious transgression by this Authority.

Now therefore, in view of the above and in exercise of the powers vested under Section 5 of the Environmental (Protection) Act, 1986, the authority hereby directs you to show cause as to why the NOC issued to your project should not be cancelled and legal action against your industry/project should not be initiated as per law which may include sealing of borewell, suspension/ closure of your unit, levying of Environmental Compensation and invoking penal provisions under section 15 of the Environment (Protection) Act.

You are hereby given an opportunity to submit your response, in any case within 15 days of receipt of this notice, failing which appropriate strict action will be initiated against your project, at your own risk, cost and responsibility for illegal withdrawal of groundwater. Please note that failure to submit a response will be understood that you have nothing to say in your defense.

(Signature)

(Name of the issuing officer)
Designation

To

Project Proponent

.....
.....
.....

Copy to:

1. Collector/Deputy Commissioner/District Magistrate,
2. Member Secretary, State Pollution Control Board concerned.

ACKNOWLEDGEMENT

Received the Show-Cause-Notice dated from the Authorized Officer of Central Ground Water Authority on

A reply to the Show Cause Notice is enclosed/Compliance Report will be submitted along with photographs latest by

For Industry/Project

Authorized Signatory

(Sample show cause notice in case of non submission of renewal application)

**Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation**

CENTRAL GROUND WATER AUTHORITY
[Constituted under section 3 (3) of Environment (Protection) Act, 1986]

(Address of Regional Office)
(Email ID of Regional Office)

File No. _____

Date: _____

SHOW-CAUSE-NOTICE

Whereas the Authority has issued ‘Guidelines to control and regulate ground water extraction in India’ vide notification number 3289(E) dated 24th September, 2020, wherein Section 11 (i) provides that “The applicant shall apply for renewal of No Objection Certificate at least ninety days prior to expiry of its validity.”

And whereas, the said Guidelines further provide under Section 11 (vii) that “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.”

And whereas, it has come to the notice of Authority that your NOC (No..... dated -----) has expired on The process of renewal of No Objection Certificate for ground water abstraction by your industry/project is overdue and the proponent has failed to apply for renewal within the stipulated time.

Now therefore, in view of the non compliance observed above and in exercise of the powers vested under Section 5 of the Environmental (Protection) Act, 1986 and Gazette Notification, S.O. 3289(E) dated 24/9/2020, the authority hereby directs you to show cause to explain the reason as to why legal action should not be initiated against your industry/project as per law which may include sealing of borewell, suspension/ closure of your unit and levying of Environmental Compensation for the period starting from the date of expiry of NOC till its renewal.

You are hereby given an opportunity to submit your response, in any case within 15days of receipt of this notice, failing which appropriate action will be initiated against your industry/project under the provisions of Environmental (Protection) Act, 1986 and Gazette Notification S.O. 3289(E), dated 24/9/2020, at your own risk, cost and responsibility for illegal withdrawal of groundwater. Please note that failure to submit a response will be understood that you have nothing to say in this regard.

(Signature)

(Name of the issuing officer)
Designation

To

Project Proponent

.....
.....

.....

Copy to:

- 1. Collector/Deputy Commissioner/District Magistrate,
- 2. Member Secretary, State Pollution Control Board concerned.

ACKNOWLEDGEMENT

Received the Show-Cause-Notice dated from the Authorized Officer of Central Ground Water Authority on

A reply to the Show Cause Notice is enclosed/Compliance Report will be submitted along with photographs latest by

For Industry/Project

Authorized Signatory

(Sample show cause notice in case of ground water withdrawal without NOC)

**Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga Rejuvenation**

CENTRAL GROUND WATER AUTHORITY
[Constituted under section 3 (3) of Environment (Protection) Act, 1986]

(Address of Regional Office)
(Email ID of Regional Office)

File No. _____

Date: _____

SHOW-CAUSE-NOTICE

Whereas the Central Ground Water Authority has issued public notices directing all the existing ground water users to apply for No Objection Certificate for ground water withdrawal.

And whereas, it has been brought to the notice of Authority that..... is withdrawing ground water without obtaining NOC from the Authority.

Now therefore, the Authority in exercise of powers under section 5 of the Environment (Protection) Act, 1986 hereby directs you to show cause as why your ground water abstraction structure(s) (dugwell/borewell/tubewell/ dewatering structure) should not be sealed for illegal withdrawal of ground water. You are hereby given an opportunity to submit explanation within 15 days from the date of receipt of this notice, failing which the authority shall proceed in accordance with law, at your own risk, cost and responsibility including sealing of ground water abstraction structures and imposition of environmental compensation for illegal withdrawal of groundwater.

(Signature)

(Name of the issuing officer)
Designation

To

Project Proponent

.....
.....
.....

Copy to:

1. Collector/Deputy Commissioner/District Magistrate,
2. Member Secretary, State Pollution Control Board concerned.

ACKNOWLEDGEMENT

Received the Show-Cause-Notice dated from the Authorized Officer of Central Ground Water Authority
on

A reply to the Show Cause Notice is enclosed/Compliance Report will be submitted along with photographs latest
by

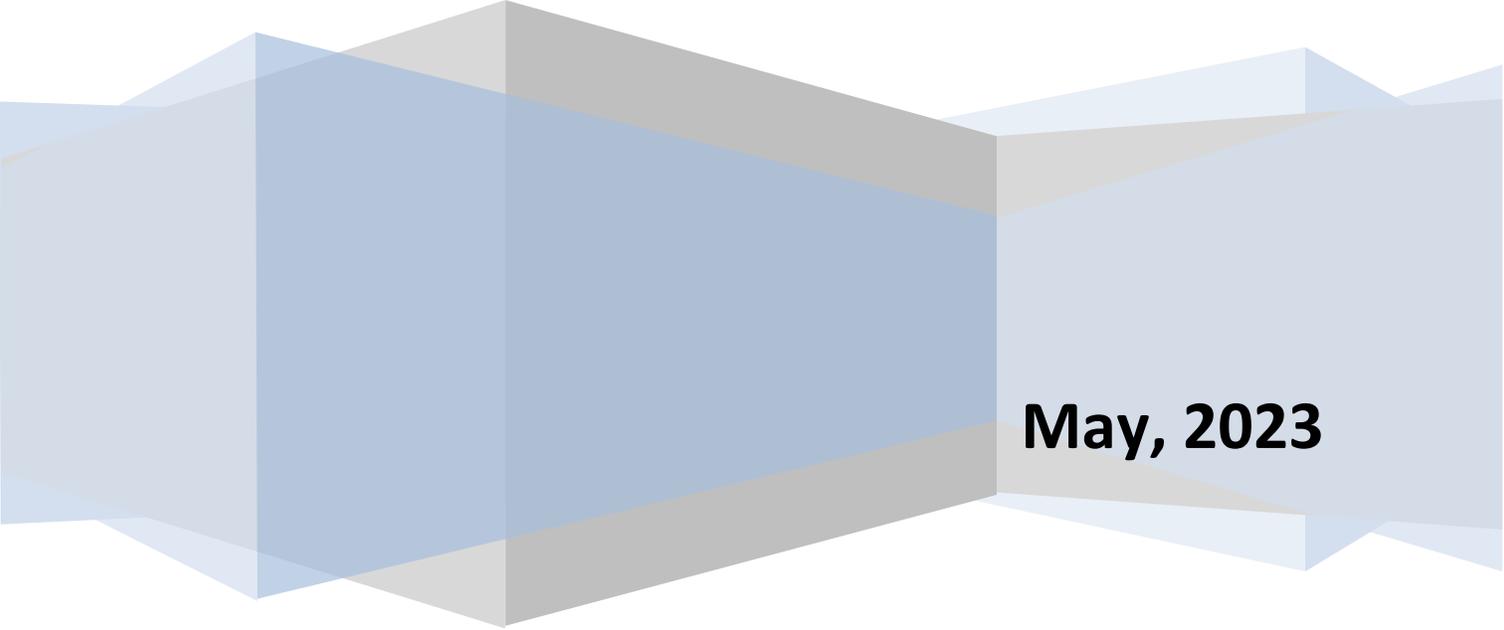
For Industry/Project

Authorized Signatory

**MINISTRY OF JAL SHAKTI,
CENTRAL GROUND WATER AUTHORITY**

Standard Operating Procedures

Impact Assessment Report and Comprehensive Hydrogeological Report



May, 2023

Ministry of Jal Shakti
Department of Water Resources, River Development & Ganga
Rejuvenation Central Ground Water Authority

Standard Operating Procedures
for preparation of Impact Assessment Report and
Comprehensive Hydrogeological Report

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I PURPOSE OF THIS DOCUMENT

The main objective of the accreditation of the Groundwater Professionals and Institutions is to ensure that reports of acceptable standards are submitted by them for obtaining NOC from CGWA. During the last one year, it has been observed that despite the clear instructions mentioned in the guidelines as well as comments/ suggestions offered during the meetings of Expert Appraisal Committee, instructions/suggestions given to the consultants/Institutions in the special meetings organized with them and also after the scrutiny of reports, the quality of the reports is not up to the acceptable standards. This requires interventions from CGWA side and a lot of time is elapsed in scrutiny of reports. In order to facilitate the consultants/institutions in preparation of the Impact Assessment Report (IAR) and Comprehensive Report (CR) on ground water conditions in both core and buffer zones for Mining Projects this SOP has been prepared. This document provides guidance and a consistent, structured approach for preparation of a IAR and CR report in support of their proposal for NOC application.

IAR must be prepared by an **Accredited Consultant/Institution (AC) only. Also an AC can prepare a report only if the work order by the project proponent is issued to him/her/ institution.** The AC shall digitally sign and stamp a completed report which is submitted to the CGWA, and shall take professional responsibility for its content and the accuracy of the information contained therein. For issues of professionalism and data integrity, the AC is directed to follow the guidelines and codes of ethics maintained by the Policy Document of the **Accredited Consultant/Institutions.**

II PURPOSE OF SUBMISSION OF REPORTS

The objective of submission of the said reports was in line with the Hon'ble NGT directions wherein it was directed that there should be "no general permission for withdrawal of ground water, particularly to any commercial entity, without environment impact assessment of such activity on individual Assessment units in cumulative terms covering carrying capacity aspects by an expert committee".

All Impact Assessment Reports should include necessarily following aspects:

- i. Changes in water table elevation (including seasonal fluctuations)
- ii. Changes in groundwater flow direction
- iii. Reduction to infiltration/recharge/discharge rates and volumes on varying time scales (i.e., daily to annual depending upon proximal environmental features)
- iv. Change in baseflow (quantity and quality)
- v. Impact on water quality
- vi. Impact on nearby surface water bodies (wetlands, water courses or other significant features)

Thus, the purpose of the submission of the hydrogeological reports is to evaluate the potential for unacceptable impacts to occur as a result of the water withdrawal. The report must also propose contingency and mitigative measures that will be implemented in the event that unforeseen unacceptable impacts occur. It has been observed that most of the reports lay emphasis on the chapters other than the hydrogeology, aquifer carrying capacity and impact assessment. As such these reports do not serve the desired purpose and it takes a lot of time and effort in getting them in order. Also, the Maps and Charts prepared by such consultants are not in conformity with the standards prescribed by the international systems of symbology leading to different formats of figures and charts.

A FORMAT FOR IMPACT ASSESSMENT REPORT

The **level of detail** required in the hydrogeological study is normally expected to be commensurate with the level of risk posed by the withdrawal of ground water by the industry/ infrastructure dewatering project, and level of uncertainty of the available information. In the report, the AC should provide clear rationale for the level of work performed and the methodology or study approach utilized. The consultant is expected to undertake field work to collect the requisite information from the field. If need be secondary data of Central/ State agencies may also be collected.

The AC should ensure that GW withdrawal may not cause irreversible impacts to the aquifer such as those that may occur if a confined aquifer is over-pumped. In addition, the withdrawal of ground water should not normally result in deterioration of quality of ground water on a neighbouring property. Even if the hydrogeological study demonstrates that there will not be any unacceptable impacts, the report must propose **contingency and mitigative measures** that will be implemented in the event of unforeseen unacceptable impacts.

Wherever feasible, the ministry encourages that water should be recycled and reused and should be **returned to its source** in order to conserve ground water resources. The study must also address the physical and water quality impacts to the natural environment that may result from a **discharge of the effluent on the Ground Water System**.

CHECK LIST FOR PP BEFORE SUBMISSION OF IAR/ CHR

(Please note that failure to adhere to below-given basic norms of report writing will result in return of IAR/ CHR without further scrutiny for resubmission)

S. No.	To Check	Yes/ No
1.	Whether Month and Year of submission of report is mentioned on Front Page	
2.	Whether Version of report (if revised) mentioned on Front Page	
3.	Whether groundwater quantum in report matches with NOC application	
4.	Whether all salient features have been entered in the Table (Chapter-1).	
5.	Whether Accreditation Certificate has been attached.	
6.	Whether Work Order or relevant document having proof of date of Work Order has been attached.	
	Whether all sections as per report SoP have been covered (even if certain	

	section is not deemed relevant, same should also be inserted in the text with comment like not required/ not applicable etc. with reason)	
7.	Whether Water Level maps have colour zoning as per SoP for report	
8.	Whether all figures in the report have been referred to/ discussed in text with Figure No.	
9.	Whether all tables in the report have been referred to/ discussed in text with Table No.	
10.	Whether all Maps have good resolution with Scale, Coordinates, North and Legend and whether legend is legible.	
11.	Whether source of data (in tables/ values etc.) taken from elsewhere (i.e Secondary Data) has been quoted in the text/ below the table.	
12.	Whether details of references cited in text/ source of data have been given at the end of report as Bibliography.	
13.	Whether all certificates/ documents bearing signatures (such as Work Order, Certificate by Consultant etc.) have the name of signatory below signature.	

Note: *It may be noted that merely following above does not amount to report being complete or in-order. Further scrutiny will only be done if report is submitted adhering to above norms.*

Signature with Name

1. SALIENT FEATURES OF THE PROPOSAL

S. No.	Particulars	Information
1.	Application No.	
2.	Submission Date	
3.	Fresh or Renewal	
4.	Existing or New/ Proposed	
5.	If Renewal, date of validity of existing/ last NOC	
6.	CTE Issue Date	
7.	Name of Project with Address	
8.	State	
9.	District	
10.	Block/ Taluka	
11.	Category of Block/ Taluka (as per prevailing GWRE)	
12.	Quantum of GW applied (KLD)	
13.	Quantum of GW applied (m ³ /Year)	
14.	Alluvium/ Non-alluvium	
15.	GW Modelling Required (Yes/ No)	
16.	Name of Authorized Signatory of Project & Designation	
17.	Consultant Details with Name of Authorized Signatory (If Institution)	
18.	In case report is prepared jointly by accredited institute and individual consultant, name details of chapters prepared by the individual consultant	
19.	Accreditation Certificate No. and Date/ Validity (In case jointly as per Point No. 14, No. and validity of both institution and individual are to	

be given)	
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Signature with Name

2. ABOUT THE PROJECT

This section should identify and briefly describe the general location {Industrial belt, Block, District, State, coordinates} of the project, and intended use of the ground water withdrawal {Whether Existing or Proposed}, duration of study conducted and outline the scope of work performed. Project area and 5 Km radius/Square shall be demarcated on google map.

2.1 LANDUSE/ LAND COVER OF THE SURROUNDING AREA

This sub section will deal with the description and map of Landuse/ Land cover map of the area covering 5 km radius from the plant site.

2.2 DEM / TOPOGRAPHY

This subsection will deal with the topography of the surrounding area within 5 km radius from the plant site giving the details of elevation of the surrounding area. DEM and. or topographic contour map of the area within 5 km radius shall be given here.

2.3 GEOMORPHOLOGY AND DRAINAGE 5 KM (RADIUS/SQUARE)

This sub section will describe the geomorphology and drainage of the area and the text will be supported by Geomorphology and drainage maps.

2.4 DETAILS OF WETLANDS/ MAJOR WATER BODIES

This sub section will give the details of wetlands/ major water bodies if any within the 5 km radius and give information on distance/ direction of the plant site from the designated wetland.

If the project site is within 500 metres from the designated wetland as per Ramasar Convention (list of sites available on the NOCA P porta), detailed proposal to avoid/ mitigate the adverse impact on the wetland due to the ground water withdrawal shall be furnished.

HYDROGEOLOGY

3.1 GEOLOGICAL SETUP

This should include area specific geology and will contain information and maps of both regional Geology and the local Geology of the area within 5 km radius (Circle/ square) of the plant site. The maps should be based on GSI or field investigation data}.

3.2 HYDROGEOLOGICAL SETUP

The purpose of the GW survey is to collect baseline data that can help prevent and resolve interference complaints. The focus is on gathering current information about the existing hydrogeological conditions. Enhanced monitoring of wells may be performed where the focus would be on impacts that occur as a result of water withdrawal.

This section will deal with the ground water situation in and around the project area including water level and quality data and maps along with quality issues, if any.

Hydrogeological map of the area covering 5 km radius from the plant site showing the aquifers available in the area and ground water table elevation contours and flow direction shall be given.

3.2.1. Aquifer characteristics

Information on type of aquifers, depth, thickness, porosity, permeability and storativity etc. shall be furnished in this sub section.

3.2.2. Ground water flow and aquifer interaction with surface water bodies

Information on ground water flow and details of ground water - surface water interconnection, if any, observed in the area shall be furnished.

3.2.3 Depth to water level

The consultants are supposed to measure water level in the study area, i.e. 5 KM radius/square in case of Industry/ infrastructure dewatering projects. Few wells can also be monitored outside the study area to extend the interpolations outside the study area. There should be at least 5-6 observation wells within the 5 Km radius study area and 3-4 outside the study area to be used for control points of water level & water table covering all directions. Water level data should not be collected during monsoon season (June - September).

This sub section shall give data on depth to ground water level (metres below ground level) collected from the field. Depth to water level map shall be prepared based on the data collected from the field. Depth to water level maps of pre-monsoon and post-monsoon seasons and also seasonal water level fluctuation map based on secondary data available shall also be incorporated in the report. These maps will also incorporate the primary data collected by the consultant, if the period of data collection coincides with the pre-monsoon/ post-monsoon. Season (pre-monsoon/ post-monsoon)/ month and year of data should be clearly mentioned on the maps.

3.2.4 Long term water level data analysis

This sub section will deal with the decadal water level trend analysis of both pre – monsoon and post – monsoon {based on State/CGWB data located within 5 km from project site and tapping same aquifer}. Hydrographs (line diagrams) of decadal water level data during pre-monsoon and post-monsoon seasons of a few select monitoring wells of Central/ State Government agencies showing the trend of water level variation should be given here.

3.2.5 Ground Water quality

This sub section will deal with the quality of ground water and shall include maps of electrical conductivity as contour and other Industry specific parameter as per the Annexures. Samples need to be collected by the consultant from the area covering 5 km radius of the plant site. No samples should be collected during monsoon season (June - September). Locations of samples may also be shown on the map. Samples should be analysed by NABL accredited laboratories only. The month and year of data collection may be mentioned on the map. Minimum of 6-7 samples may be collected from the study area and 2 -3 samples from outside the study area.

3.2.6 Water quality of nearby water bodies

Water samples from the nearby water bodies, if any, present in the study area should be collected and analysed from NABL accredited laboratory. Data should be presented and discussed here.

4. DETAILS OF PROPOSED/ EXISTING TUBEWELLS/ BOREWELLS

This includes the table showing aquifer wise parameters, drilling depth, diameter, lithological log, details of pump lowered/ proposed to be lowered, H.P. of pump, well discharge (lps/Cub m/day) etc.

5. PROPOSED DEWATERING PLAN IN CASE OF INFRASTRUCTURE DEWATERING PROJECTS

5.1 PLAN FOR DEWATERING

This sub section will deal with the estimation of per day quantum of seepage that needs to be dewatered and clearly indicating the expected maximum depth from where dewatering will be done and specific period for which dewatering will be needed.

5.2 USAGE OF PUMPED WATER

This sub section will describe the proposed usage of pumped water for various uses like drinking, irrigation, recharge, runoff to the stream/ drain or any other use.

6. IMPACT ASSESSMENT

6.1 IMPACT ON THE GROUND WATER REGIME

This section will cover risks of the GW environmental degradation due to GW abstraction including likely impacts of proposed GW Withdrawal on surrounding area in next five years period, affected area and radius of influence.

6.2 IMPACT ON SURFACE WATER SOURCES

This section deals with impact of GW abstraction on the nearby surface water bodies & potential threats if any.

6.3 IMPACT ON WATER QUALITY

Impact of GW abstraction on the GW and SW quality regime.

6.4 MITIGATION MEASURES

Water conservation measures adopted/ proposed to be adopted to reduce/ reuse/save ground water need to be described here. Also measures for treatment of waste water and disposal of waste water by Industry may be furnished.

6.5 SALINE WATER DISPOSAL STRATEGIES (IN CASE OF SALINE WATER ABSTRACTION)

Brief details of technology and method to be adopted for disposal of reject/saline water and likely impact on surrounding water quality may be furnished in this section.

6.6 GW MODELLING

(To be included as per SOP given below (**Part D**), if applicable)

7. WATER BALANCE, RECYCLE AND REUSE

This section will include brief write up on water requirement giving water balance including details of water required in the industrial process showing the make up water and blow down from the boiler/ cooling tower etc. along with the details of recycled water. This will also include details on 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 and water balance with chart showing the usage of water for various processes.

8. SALINE WATER DISPOSAL STRATEGIES (IN CASE OF SALINE GW ABSTRACTION)

Brief details of technology and method to be adopted for disposal of reject/saline water and likely impact on surrounding water quality. Also measures adopted/ suggested to protect the ambient ground/ surface water resources against pollution should be mentioned here.

9. ANY OTHER DETAILS PERTAINING TO THE PROJECT

10. SUMMARY AND CONCLUSION

This chapter must categorically include discussion on likely impact and mitigation measures.

11. BIBLIOGRAPHY

Details of references cited and data sources are to be given.

12. ACCREDITATION CERTIFICATE

Accreditation Certificate may be attached in the report.

B FORMAT FOR COMPREHENSIVE HYDROGEOLOGICAL REPORT ON GROUND WATER CONDITIONS IN BOTH CORE AND BUFFER ZONES FOR MINING PROJECTS

CHECK LIST FOR PP BEFORE SUBMISSION OF IAR/ CHR

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7.	Name of Project with Address	
8.	State	

9.	District	
10.	Block/ Taluka	
11.	Category of Block/ Taluka (as per prevailing GWRE)	
12.	Quantum of GW applied (KLD)	
13.	Quantum of GW applied (m ³ /Year)	
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15.	GW Modelling Required (Yes/ No)	
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19.	Accreditation Certificate No. and Date/ Validity (In case jointly as per Point No. 14, No. and validity of both institution and individual are to be given)	

Signature with Name

2. ABOUT THE PROJECT

This section should identify and briefly describe the general location {Block/ taluka/ tehsil, District, State, coordinates} of the project, whether Existing or Proposed, duration of study conducted and outline the scope of work performed. Project site, core zone of 2 km radius and buffer zone of 10 Km radius/Square shall be demarcated on google map.\

2.1 LANDUSE/ LAND COVER OF THE SURROUNDING AREA

This sub section will deal with the description and map of Landuse/ Land cover map of the area core and buffer zones.

2.2 DEM/ TOPOGRAPHY

This subsection will deal with the topography of the core and buffer zones of the project site giving the details of elevation of the surrounding area. DEM and/ or topographic contour map of the area within 2 and 10 km radii shall be given here.

2.3 GEOMORPHOLOGY AND DRAINAGE

This sub section will describe the geomorphology and drainage of the area and the text will be supported by Geomorphology and drainage maps.

2.4 DETAILS OF WETLANDS/ MAJOR WATER BODIES

This sub section will give the details of wetlands/ major water bodies if any in the core and buffer zones and give information on distance/ direction of the project site from the designated wetland. If the project site is within 500 metres from the designated wetland as per Ramsar Convention (list of sites available on the NOCAP portal), detailed

proposal to avoid/ mitigate the adverse impact on the wetland due to the ground water withdrawal shall be furnished.

3. HYDROGEOLOGY

3.1 GEOLOGICAL SETUP

This should include area specific geology and will contain information and maps of both regional Geology and the local Geology of the core zone covering area within 2 km radius and buffer zone covering 10 km radius (Circle/ square) from the project site. The maps should be based on GSI or field investigation data.

3.2 GEOPHYSICAL STUDIES

This sub section will include details of Geophysical investigations including vertical electrical soundings carried out in and around the project area, and their analysis.

3.3 HYDROGEOLOGICAL SETUP

The purpose of the GW survey is to collect baseline data that can help prevent and resolve interference complaints. The focus is on gathering current information about the existing hydrogeological conditions. Enhanced monitoring of wells may be performed where the focus would be on impacts that occur as a result of ground water withdrawal.

This section will deal with the ground water situation in and around the project area including water level and quality data and maps along with quality issues, if any. Hydrogeological map of the area covering core and buffer zones within 2 km and 10 km radii from the project site showing the aquifers available in the area and ground water table elevation contours and ground water flow direction shall be given.

3.3.1. Aquifer characteristics:

Information on type of aquifers, depth, thickness, porosity, permeability and storativity etc. shall be furnished in this sub section.

3.3.2. Ground water flow and aquifer interaction with surface water bodies:

Information on ground water flow and details of ground water - surface water interconnection, if any, observed in the area shall be furnished.

3.3.3 Depth to water level

The consultants are supposed to measure water level in the study area, i.e core zone of 2 KM and buffer zone of 10 KM radius/square. Few wells can also be monitored outside the study area to extend the interpolations outside the study area. There should be at least 10- 12 observation wells within the 10 Km radius study area and 4-5 outside the study area to be used for control points of water level & water table covering all directions. Water level data should not be collected during monsoon season (June - September).

This sub section shall give data on depth to ground water level (metres below ground level) collected from the field. Depth to water level map shall be prepared based on the data collected from the field. Depth to water level maps of pre-monsoon and post-monsoon seasons and also seasonal water level fluctuation map based on secondary data

available shall also be incorporated in the report. These maps will also incorporate the primary data collected by the consultant, if the period of data collection coincides with the pre-monsoon/ post-monsoon. Season (pre-monsoon/ post-monsoon)/ month and year of data should be clearly mentioned on the maps.

3.3.4 Long term water level data analysis

This sub section will deal with the decadal water level trend analysis of both pre – monsoon and post – monsoon {based on State/CGWB data located within 10 km from project site and tapping same aquifer}. Hydrographs (line diagrams) of decadal water level data during pre-monsoon and post-monsoon seasons of a few select monitoring wells of Central/ State Government agencies showing the trend of water level variation should be given here.

3.3.5 Ground water quality

This sub section will deal with the quality of ground water and shall include maps of electrical conductivity as contour and other parameters as point value. Samples need to be collected by the consultant from the core and buffer zones. Locations of samples may also be shown on the map. Samples should be analysed by NABL accredited laboratories only. The month and year of data collection may be mentioned on the map. Minimum of 12-13 samples may be collected from the study area and 2 -3 samples from outside the study area.

3.3.6 Water quality of nearby water bodies

Water samples from the nearby water bodies, if any, present in the study area should be collected and analysed from NABL accredited laboratory. Data should be presented and discussed here.

4. APPROVED MINE PLAN

This includes the Year wise mine plan including excavation depth, area and mine seepage KLD and KLY based on volume of excavation, permeability, GW Gradient around mine pit(s).

5. ESTIMATION OF MINE SEEPAGE, RAINWATER QUANTUM DEWATERED (IN CASE OF OPEN CAST MINES) AND ADVANCED DEWATERING PLAN

Type of mine (Open Cast/Underground)

Elevation of water table,mine pits

Details of Mine pit and tunnel (number of pits and tunnels with dimensions(Length, width,depth)

5.1 ESTIMATION OF MINE SEEPAGE

Mine seepage should be calculated for 5 years as per approved mining plan.The details of calculated mine seepage is given below. Seepage calculations shall be made Pit Wise/Tunnel/Shaft.

Table 5.1: Seepage from Walls of the Pit/Tunnel

Year	Period	Working bench Reduce Level in respect to MSL (m)	Depth to Water RL (m)	Length of the Face (m)	Width of the Face (m) or Dia (m) in case of tunnel	Saturated Thickness (m)	GW Gradient (m/m)	*Hydraulic Conductivity (m/day)	Per Day Mine Seepage (Cub m/Day)	Annul Mine Seepage (Cub m/Year)
Year 1	Pre monsoon									
	Post monsoon									
Year 2	Pre monsoon									
	Post monsoon									
Year 3	Pre monsoon									
	Post monsoon									
Year 4	Pre monsoon									
	Post monsoon									
Year 5	Pre monsoon									
	Post monsoon									

The seepage may be estimated from the bottom of the mine pit and be added to the seepage from walls as calculated above.

Table 5.2 Seepage from Bottom of the Pit

Year	Perion	*Hydraulic Conductivity (m/day)	Per Day Mine Seepage (Cub m/Day)	Annul Mine Seepage (Cub m/Year)
Year 1	Pre monsoon			
	Post monsoon			
Year 2	Pre monsoon			
	Post monsoon			
Year 3	Pre monsoon			
	Post monsoon			
Year 4	Pre monsoon			
	Post monsoon			
Year 5	Pre monsoon			
	Post monsoon			

Table 5.3 Total Mine seepage

Year	Perion	Annul Mine Seepage (Cub m/Year)Table 5.1 + 5.2
Year 1	Pre monsoon	
	Post monsoon	
Year 2	Pre monsoon	
	Post monsoon	
Year 3	Pre monsoon	
	Post monsoon	
Year 4	Pre monsoon	
	Post monsoon	
Year 5	Pre monsoon	
	Post monsoon	

- Hydraulic Conductivity should be based on Pumping Testing carried out by the Consultant and CGWB exploration data. The pumping test duration should be sufficiently large to capture hydrogeological boundaries/water bodies in adjacent areas.
- Hydraulic Gradient should be calculated based on the ground water slope at the Mining Pit Area
- Year wise and bench wise mine seepage calculation as per approved mine plan (up to conceptual period)

5.2 ESTIMATION OF RAINWATER QUANTUM DEWATERED

5.3 ADVANCED DEWATERING PLAN IN CASE OF COAL/LIGNITE MINES

The details of the advanced dewatering plan along with proposed location of the bore wells including other hydrogeological details may be provided.

5.4 GW MODELLING CHAPTER TO BE INCLUDED AS PER SOP GIVEN IN SECTION-D (IF APPLICABLE AS PER SECTION E & F)

Mining Projects with **seepage component more than 500 KLD** have to carry out GW Modelling studies and submit report (**Refer to Section E & F**). In case of discrepancies in the estimated seepage between Analytical (TIL) and Modelling studies, the higher values of the seepage shall be considered for grant of NOC.

6. MINE WATER MANAGEMENT

6.1 IMPACT OF MINE DEWATERING/ ABSTRACTION AND MITIGATION MEASURES

6.2 IMPACT ON THE GROUND WATER REGIME

This section will cover risks of the GW environmental degradation due to mining activities including likely impacts of proposed GW Withdrawal on surrounding area in next five years period, affected area and radius of influence.

6.3 IMPACT ON SURFACE WATER SOURCES

This section deals with impact of mine dewatering on the nearby surface water bodies including diversion of existing channels, constructed dam/ barrages/ weir/ canals/ hydro - electric projects if any, change in land use [change in flood plain, lotic & lentic systems etc.] and current & potential threats if any.

6.3 IMPACT ON WATER QUALITY

Impact of Mining on the GW and SW quality regime

6.4 MITIGATION MEASURES

Water conservation measures adopted/ proposed to be adopted to reduce/ reuse/save ground water need to be described here. Also measures for treatment of mine water and disposal of wastewater by mine may be furnished.

7 SALINE WATER DISPOSAL STRATEGIES (IN CASE OF SALINE WATER ABSTRACTION)

Brief details of technology and method to be adopted for disposal of reject/saline water and likely impact on surrounding water quality may be furnished in this section.

8. ANY OTHER DETAILS PERTAINING TO THE PROJECT.

9. SUMMARY AND CONCLUSION

This section must categorically include discussion on likely impact and mitigation measures.

10. BIBLIOGRAPHY

11. ACCREDITATION CERTIFICATE

C FORMAT FOR IMPACT ASSESSMENT REPORT FOR INFRASTRUCTURE PROJECTS INVOLVING DEWATERING

The **level of detail** required in the hydrogeological study is normally expected to be commensurate with the level of risk posed by the withdrawal of ground water by the industry/ infrastructure dewatering project, and level of uncertainty of the available information. In the report, the AC should provide clear rationale for the level of work performed and the methodology or study approach utilized. The consultant is expected to undertake field work to collect the requisite information from the field. If need be secondary data of Central/ State agencies may also be collected.

The AC should ensure that GW withdrawal may not cause irreversible impacts to the aquifer such as those that may occur if a confined aquifer is over-pumped. In addition, the withdrawal of ground water should not normally result in deterioration of quality of ground water on a neighbouring property. Even if the hydrogeological study demonstrates that there will not be any unacceptable impacts, the report must propose **contingency and mitigative measures** that will be implemented in the event of unforeseen unacceptable impacts.

Wherever feasible, the ministry encourages that water should be recycled and reused and should be **returned to its source** in order to conserve ground water resources. The study must also address the physical and water quality impacts to the natural environment that may result from a **discharge of the effluent on the Ground Water System**.

CHECK LIST FOR PP BEFORE SUBMISSION OF IAR/ CHR

*(Please note that **failure to adhere** to below-given basic norms of report writing will result in **return of IAR/ CHR without further scrutiny for resubmission**)*

S. No.	To Check	Yes/ No
1.	Whether Month and Year of submission of report is mentioned on Front Page	
2.	Whether Version of report (if revised) mentioned on Front Page	
3.	Whether groundwater quantum in report matches with NOC application	
4.	Whether all salient features have been entered in the Table (Chapter-1).	
5.	Whether Accreditation Certificate has been attached.	
6.	Whether Work Order or relevant document having proof of date of Work	

	Order has been attached.	
	Whether all sections as per report SoP have been covered (even if certain section is not deemed relevant, same should also be inserted in the text with comment like not required/ not applicable etc. with reason)	
7.	Whether Water Level maps have colour zoning as per SoP for report	
8.	Whether all figures in the report have been referred to/ discussed in text with Figure No.	
9.	Whether all tables in the report have been referred to/ discussed in text with Table No.	
10.	Whether all Maps have good resolution with Scale, Coordinates, North and Legend and whether legend is legible.	
11.	Whether source of data (in tables/ values etc.) taken from elsewhere (i.e Secondary Data) has been quoted in the text/ below the table.	
12.	Whether details of references cited in text/ source of data have been given at the end of report as Bibliography.	
13.	Whether all certificates/ documents bearing signatures (such as Work Order, Certificate by Consultant etc.) have the name of signatory below signature.	

Note: *It may be noted that merely following above does not amount to report being complete or in-order. Further scrutiny will only be done if report is submitted adhering to above norms.*

Signature with Name

1. SALIENT FEATURES OF THE PROPOSAL

S. No.	Particulars	Information
1.	Application No.	
2.	Submission Date	
3.	Fresh or Renewal	
4.	Existing or New/ Proposed	
5.	If Renewal, date of validity of existing/ last NOC	
6.	CTE Issue Date	
7.	Name of Project with Address	
8.	State	
9.	District	
10.	Block/ Taluka	
11.	Category of Block/ Taluka (as per prevailing GWRE)	
12.	Quantum of GW applied (KLD)	
13.	Quantum of GW applied (m ³ /Year)	
14.	Alluvium/ Non-alluvium	
15.	GW Modelling Required (Yes/ No)	
16.	Name of Authorized Signatory of Project & Designation	
17.	Consultant Details with Name of Authorized Signatory (If Institution)	
18.	In case report is prepared jointly by accredited institute and individual consultant, name details of chapters prepared by the individual consultant	
19.	Accreditation Certificate No. and Date/ Validity	

(In case jointly as per Point No. 14, No. and validity of both institution and individual are to be given)	
--	--

Signature with Name

2. ABOUT THE PROJECT

This section should identify and briefly describe the general location {Industrial belt, Block, District, State, coordinates} of the project, and intended use of the ground water withdrawal {Whether Existing or Proposed}, duration of study conducted and outline the scope of work performed. Project area and 5 Km radius/Square shall be demarcated on google map.

2.1 LANDUSE/ LAND COVER OF THE SURROUNDING AREA

This sub section will deal with the description and map of Landuse/ Land cover map of the area covering 5 km radius from the plant site.

2.2 DEM / TOPOGRAPHY

This subsection will deal with the topography of the surrounding area within 5 km radius from the plant site giving the details of elevation of the surrounding area. DEM and. or topographic contour map of the area within 5 km radius shall be given here.

2.3 GEOMORPHOLOGY AND DRAINAGE 5 KM (RADIUS/SQUARE)

This sub section will describe the geomorphology and drainage of the area and the text will be supported by Geomorphology and drainage maps.

2.4 DETAILS OF WETLANDS/ MAJOR WATER BODIES

This sub section will give the details of wetlands/ major water bodies if any within the 5 km radius and give information on distance/ direction of the plant site from the designated wetland.

If the project site is within 500 metres from the designated wetland as per Ramasar Convention (list of sites available on the NOCA P porta), detailed proposal to avoid/ mitigate the adverse impact on the wetland due to the ground water withdrawal shall be furnished.

HYDROGEOLOGY

3.1 GEOLOGICAL SETUP

This should include area specific geology and will contain information and maps of both regional Geology and the local Geology of the area within 5 km radius (Circle/ square) of the plant site. The maps should be based on GSI or field investigation data}.

3.2 HYDROGEOLOGICAL SETUP

The purpose of the GW survey is to collect baseline data that can help prevent and resolve interference complaints. The focus is on gathering current information about the existing hydrogeological conditions. Enhanced monitoring of wells may be performed where the focus would be on impacts that occur as a result of water withdrawal.

This section will deal with the ground water situation in and around the project area including water level and quality data and maps along with quality issues, if any. Hydrogeological map of the area covering 5 km radius from the plant site showing the aquifers available in the area and ground water table elevation contours and flow direction shall be given.

3.2.1. Aquifer characteristics

Information on type of aquifers, depth, thickness, porosity, permeability and storativity etc. shall be furnished in this sub section.

3.2.2. Ground water flow and aquifer interaction with surface water bodies

Information on ground water flow and details of ground water - surface water interconnection, if any, observed in the area shall be furnished.

3.2.3 Depth to water level

The consultants are supposed to measure water level in the study area, i.e. 5 KM radius/square in case of Industry/ infrastructure dewatering projects. Few wells can also be monitored outside the study area to extend the interpolations outside the study area. There should be at least 5-6 observation wells within the 5 Km radius study area and 3-4 outside the study area to be used for control points of water level & water table covering all directions. Water level data should not be collected during monsoon season (June - September).

This sub section shall give data on depth to ground water level (metres below ground level) collected from the field. Depth to water level map shall be prepared based on the data collected from the field. Depth to water level maps of pre-monsoon and post-monsoon seasons and also seasonal water level fluctuation map based on secondary data available shall also be incorporated in the report. These maps will also incorporate the primary data collected by the consultant, if the period of data collection coincides with the pre-monsoon/ post-monsoon. Season (pre-monsoon/ post-monsoon)/ month and year of data should be clearly mentioned on the maps.

3.2.4 Long term water level data analysis

This sub section will deal with the decadal water level trend analysis of both pre – monsoon and post – monsoon {based on State/CGWB data located within 5 km from project site and tapping same aquifer}. Hydrographs (line diagrams) of decadal water level data during pre-monsoon and post-monsoon seasons of a few select monitoring wells of Central/ State Government agencies showing the trend of water level variation should be given here.

3.2.5 Ground Water quality

This sub section will deal with the quality of ground water and shall include maps of electrical conductivity as contour and other Industry specific parameter as per the Annexures. Samples need to be collected by the consultant from the area covering 5 km radius of the plant site. No samples should be collected during monsoon season (June - September). Locations of samples may also be shown on the map. Samples should be analysed by NABL accredited laboratories only. The month and year of data collection may

be mentioned on the map. Minimum of 6-7 samples may be collected from the study area and 2 -3 samples from outside the study area.

3.2.6 Water quality of nearby water bodies

Water samples from the nearby water bodies, if any, present in the study area should be collected and analysed from NABL accredited laboratory. Data should be presented and discussed here.

4. DETAILS OF PROPOSED/ EXISTING TUBEWELLS/ BOREWELLS

This includes the table showing aquifer wise parameters, drilling depth, diameter, lithological log, details of pump lowered/ proposed to be lowered, H.P. of pump, well discharge (lps/Cub m/day) etc.

5. PROPOSED DEWATERING PLAN

5.1 PLAN FOR DEWATERING

This sub section will deal with the estimation of per day quantum of seepage that needs to be dewatered and clearly indicating the expected maximum depth from where dewatering will be done and specific period for which dewatering will be needed.

5.2 USAGE OF PUMPED WATER

This sub section will describe the proposed usage of pumped water for various uses like drinking, irrigation, recharge, runoff to the stream/ drain or any other use.

6. IMPACT ASSESSMENT

6.1 IMPACT ON THE GROUND WATER REGIME

This section will cover risks of the GW environmental degradation due to GW abstraction including likely impacts of proposed GW Withdrawal on surrounding area in next five years period, affected area and radius of influence.

6.2 IMPACT ON SURFACE WATER SOURCES

This section deals with impact of GW abstraction on the nearby surface water bodies & potential threats if any.

6.3 IMPACT ON WATER QUALITY

Impact of GW abstraction on the GW and SW quality regime.

6.4 MITIGATION MEASURES

Water conservation measures adopted/ proposed to be adopted to reduce/ reuse/save ground water need to be described here. Also measures for treatment of waste water and disposal of waste water by Industry may be furnished.

6.5 SALINE WATER DISPOSAL STRATEGIES (IN CASE OF SALINE WATER ABSTRACTION)

Brief details of technology and method to be adopted for disposal of reject/saline water and likely impact on surrounding water quality may be furnished in this section.

6.6 GW MODELLING (AS PER SECTION E & F)

7. SALINE WATER DISPOSAL STRATEGIES (IN CASE OF SALINE GW ABSTRACTION)

Brief details of technology and method to be adopted for disposal of reject/saline water and likely impact on surrounding water quality. Also measures adopted/ suggested to protect the ambient ground/ surface water resources against pollution should be mentioned here.

8. ANY OTHER DETAILS PERTAINING TO THE PROJECT**9. SUMMARY AND CONCLUSION**

This chapter must categorically include discussion on likely impact and mitigation measures.

10. BIBLIOGRAPHY

Details of references cited and data sources are to be given.

11. ACCREDITATION CERTIFICATE

Accreditation Certificate may be attached in the report.

D SOP FOR MAPS AND CHARTS

Maps are important components of the above two reports. The SOP for maps is provided below for uniformity in presenting the information by the applicants across all the area. Maps should be full page on A3 size with good resolution and should not be inserted between the text. Reference of all figures /maps should be included in text. Scale should be shown in all the maps.

1. PROJECT AREA

All the maps for Impact Assessment Report shall be made in 5 KM radius/square in all cases and those for comprehensive hydrogeological report for mines shall be for core zone of 2 km radius and buffer zone of 10 Km radius from the project site.

2. BACKGROUND LAYERS

All the maps should have layer of background information which should include Localities, Project Location, Major drainage and transport network. Symbology of all background layers should be adopted as per symbology of Google Map.

3. HYDROGEOLOGICAL MAP

Hydrogeological maps should essentially have aquifer types, their potential and water table elevation (WTE) contours (meters above mean sea level). The maps should also depict GW flow directions perpendicular to WTE contours.

4. DEPTH TO WATER MAPS

The depth to water map for pre and post water level is to be prepared as part of the reports.

The consultants are supposed to measure water level in the study area, 5 KM radius/square in case of Industry and 10 KM radius/square in case of Mining projects. Few wells can also be measured outside the study area to extend the interpolations outside the study area. In case of industries, there should be at least 5-6 observation wells within the 5Km radius study area and 3-4 outside the study area to be used for control points of water level & water table covering all directions. In case of mining the nos. of monitoring wells should be 10 - 12 within the core and buffer zone and 4-5 outside the buffer zone.

It is suggested that the filled contours maps of the following intervals should be prepared having the following colour scheme.

Contour colour Shades

Depth to Water Range Below Ground Level (m)	Colour Shades	RGB
<2	Blue shades	
2-3	Blue shades	
3-5	Blue shades	
5-7	Green Shades	
7-10	Green Shades	
10-15	Yellow Shades	
15-20	Yellow Shades	

30-40	Brown Shades	
40-60	Brown Shades	
60-100	Red Shades	

In case the area is showing only one above defined range, the consultants can further refine the contour interval. Both the pre- and post-monsoon map should have same colour shade scheme.

5. WATER QUALITY MAPS

Water quality (WQ) maps in desired area of study should be provided in the report. Only EC & Chloride map should be presented as filled contours. Remaining parameter maps shall be presented as points marked with values on maps. The size of the points can be proportional to their concentration of the parameter observed in those locations.

Water Quality should be analysed in the study area, 5 KM radius/square in case of Industry and 10 KM radius/square in the Mining case. Samples may also be collected from a few wells located outside the study area to extend the interpolations outside the study area. In case of industries/ infrastructure dewatering projects, there should be at least 5-6 WQ observation wells within the 5Km radius study area and 3-4 outside the study area to be used for control points of water quality covering all directions. In case of mining the nos. of quality monitoring wells should be 10-12 within the buffer zone and 6-7 outside the buffer zone.

6. CHARTS

Hydrographs of the depth to water level need to be prepared for finding trend of depth to water levels with time. The hydrograph should be prepared based on the following method:

The hydrographs should be strictly XY line diagram with trend line and equation (Time Vs. Depth to Water Level). Secondary data of Central Ground Water Board or State Govt may be used for hydrographs and source should be properly mentioned.

Location of the hydrograph station(s) should be mentioned along with distance and direction from the unit.

7. INDICATIVE LIST OF FIGURES

All the reports should contain a list of figures after contents.

1. Location Map
2. Land use Map
3. DEM
4. Geomorphological map (including drainage and water bodies)
5. Geological map along with structural features
6. Hydrogeological map (Water table, aquifers, flow direction, yield) Pre & Post
7. Maps showing observation wells/ key wells
8. Depth to water map (mbgl) for Pre-monsoon and Post-monsoon

9. Water table (amsl) map with groundwater flow direction for Pre- and Post-monsoon
10. Water level fluctuation map
11. Hydrographs of selected observation wells
12. Water Quality Map (EC –Contour)
13. Water Quality Map (Chloride –Contour)
14. Water Quality Map (Nitrate- Point values)
15. Water Quality Map (Fluoride - Point values)
16. Graphical presentation of water quality

Note: Maps should include background layers as mentioned in Para D-2 above

E SOP FOR GROUND WATER MODELLING

GW Modelling studies are required to assess the impact of withdrawal on GW system on long term basin. Following are the criteria where modelling studies are required.

Industrial Projects

Assessment Unit Category	Modelling Method	Area Type	Quantum	Remarks
OCS	Analytical Modelling	HR/ Non-alluvium	>100-500	Refer to SECTION F
		Alluvium	>100-1000	
	Numerical Modelling	HR/ Non-alluvium	>500	
		Alluvium	>1000	
Safe	Numerical Modelling	HR/ Non-alluvium	>500	
		Alluvium	>2000	

Mining Projects

Numerical Modelling for all units with seepage component of dewatering above 500 KLD.

Infrastructure Projects

Numerical Modelling for all projects involving dewatering irrespective of quantum.

The chapter on the Modelling need to prepare based on the following lines:

1. BRIEF ABOUT THE MODEL AREA

This should include the basics of the area. Unnecessary information about the software used, its historical perspective, code etc need not be included in the chapter.

2. CONCEPTUAL MODEL

The conceptual model should include the following:

Parameter	Value
Grid	Nos of Column X Nos of Rows Size of Grid m x m , Nos of active grid and Nos of Inactive grid
Top of aquifer (m) range of elevation	
Bottom of aquifer (m) range of elevation	
Initial Piezometric Heads (m amsl)	Layer 1 Layer 2 Layer 3
Aquifer Type	Layer 1 : Layer 2 : Layer 3 :
Boundary Conditions Used	Constant Head Boundary: Constant Head boundary :

	No flow boundary GHB
K (m/ Day)	Layer 1 : Layer 2 : Layer 3 :
Specific yield (%)	Layer 1 : Layer 2 : Layer 3 :
Storage Parameters	Layer 1 : Layer 2 : Layer 3 :
Recharge applied	–mm/day
Draft applied	
Proposed Draft applied for the firm (NOC)	

Nos of additional layers if any and the Boundary conditions in the above table may be added as per the requirement and feasibility.

3. CALIBRATION AND VALIDATION

- Model result-scenario generated for 5 to 10 year, water level map, water budget
- Observed and predicted contours shape matching
- Table of observed head and calculated head
- Mass Balance table and graph to be explained

4. MODEL LIMITATION

Input parameters K & S used in comparison to observed field parameters.

Reason for using a specific type of Boundary conditions.

5. CONCLUSION AND RECOMMENDATION

RMS and normalised RMS error of the model

Prediction for next 10 years in staggered manner.

6. SUBMISSION OF SOFT COPY OF THE MODEL

All the consultants preparing GW Model are essentially to submit the model backup along with its basic files to CGWA for archival.

F GROUND WATER MODELLING METHODS FOR IMPACT ASSESSMENT

1. Introduction

Long-term withdrawal of groundwater from an aquifer can have a significant impact on the regional water table, which can lead to a range of environmental and economic consequences. The most significant impact of long-term groundwater withdrawal is the depletion of the water table, which can lead to a range of problems, including a decline in the availability of water for agriculture, industry, and domestic use. In some cases, the depletion of the water table can also result in land subsidence, which can cause structural damage to buildings, roads, and other infrastructure. Long-term groundwater withdrawal may also cause intrusion of saltwater into freshwater aquifers in hydraulic connection with the sea. Long-term groundwater withdrawal can also have ecological impacts due to reduction in flow of water to these systems can be reduced or cut off entirely, leading to reduction in stream flow, as well as deterioration of water quality and ecosystem health. This can have significant impacts on local wildlife and biodiversity. It can also have economic consequences due to the increase in the cost of water due to its reduced availability, making it more expensive for industries, farmers, and households to access the water they need. This can lead to economic hardship for some communities, particularly those in rural areas where agriculture is a significant source of income.

2. Impact Assessment Methods

Several methods are available to assess the impact of groundwater withdrawal. Some of the common methods suitable for assessing the impact of groundwater withdrawal are described below.

i Groundwater Monitoring

Groundwater monitoring involves the installation of monitoring wells to measure the depth of the water table and the rate of groundwater withdrawal. The data collected from the monitoring wells can be used to evaluate changes in the groundwater levels over time and assess the impact of groundwater withdrawal on the regional water table.

Stream flow Depletion Analysis:

Stream flow depletion analysis involves measuring the reduction in stream flow in response to groundwater withdrawal. This method is suitable for assessing the impact of groundwater withdrawal in areas where a stream flows in the vicinity of the pumping well, ideally within a distance of 1 to 1.5 km. The analysis involves measuring the reduction in stream flow caused by groundwater pumping and is suitable for assessing the impact of pumping on the environment in general and surface water resources and the environment. However, unless and until calibrated rainfall-runoff models are available to compute the runoff for the available rainfall, this method may result in unrealistic results. If the stream gauge stations give accurate runoff, then the depletion can be assessed accurately from the data.

ii Water Quality Analysis

Water quality analysis involves the measurement of various chemical and physical parameters of groundwater to determine the impact of groundwater withdrawal on water quality. The analysis can also help identify the presence of contaminants in the groundwater due to the impact of groundwater withdrawal.

iii Geophysical Surveys

Geophysical surveys involve the use of various geophysical techniques to map the subsurface structure of the aquifer and identify changes in the subsurface due to groundwater withdrawal. The surveys can help identify the extent of land subsidence and the potential for saltwater intrusion.

iv Remote Sensing

Remote sensing involves the use of satellite imagery and other remote sensing techniques to measure changes in land surface elevation, vegetation growth, and other environmental parameters. The data can be used to identify changes in the environment due to groundwater withdrawal.

v Groundwater Modelling

Groundwater modelling involves the use of mathematical equations to simulate the flow of groundwater in an aquifer. The model can be used to evaluate the impact of various factors such as groundwater withdrawal, recharge, and precipitation on the aquifer and the environment.

vi Predictive simulation of Ground Water levels

As a gradual decline in regional groundwater levels is almost always the prominent initial manifestation of the impact of groundwater withdrawal from the aquifer, prediction of groundwater levels at a future date is of importance for predicting the impact of pumping over a period of time. This is commonly done using the technique of groundwater modelling. Analytical and numerical models are two main types of modeling techniques used to predict the impact of groundwater withdrawal on regional water levels. While both models have their own advantages and limitations, there are several key differences between analytical and numerical models. Some of the major differences are mentioned below in brief:

- a. **Analytical models use mathematical equations derived from fundamental principles of fluid mechanics to describe groundwater flow and transport. These equations are solved using mathematical techniques to obtain an exact solution. On the other hand, numerical models use numerical methods such as finite element, finite difference, and boundary element methods to solve the equations numerically, usually through computer programs.**
- b. **Analytical models often make simplified assumptions about the geometry, boundary conditions and aquifer properties to obtain an exact solution. These assumptions may limit the applicability of the model to specific hydrogeological settings. Numerical models, however, can incorporate more complex geometry**

and boundary conditions, and can handle more complex aquifer properties, making them more versatile.

- c. Analytical models provide an exact solution to groundwater flow and transport problems, and are therefore highly accurate within their assumptions. Numerical models, on the other hand, rely on numerical approximations to solve the equations, and the accuracy of the results depends on the numerical methods used, the grid size and the time step used. Therefore, numerical models are generally less accurate than analytical models, but they can simulate more complex scenarios.
- d. Numerical models are more flexible than analytical models, as they can be easily modified to incorporate new data or to simulate different scenarios. Analytical models, on the other hand, are less flexible and may require a complete re-derivation if significant changes are made.
- e. Numerical models require significant computational resources to handle the large datasets and complex calculations involved. Analytical models, on the other hand, can be solved using hand calculations or simple computer programs, making them more accessible to those with limited computing resources.

In general, analytical groundwater models are useful for solving simple problems or for getting quick estimates of groundwater flow, while numerical groundwater models are better suited for complex problems or for simulating the effects of management scenarios on the groundwater system.

3. Modelling Methods

As mentioned in the previous section, either analytical or numeric groundwater modelling techniques are useful for predicting long-term declines in groundwater levels in an area in response to groundwater withdrawal, depending on the complexity of the prevailing hydrogeological scenario. Ideal methods of analytical and numeric modelling suitable for different aquifers are described below in brief. **It may be mentioned that the values taken in examples are to explain the concepts/ formulae. Thus, the values are indicative and may deviate from actual values. Focus is mainly on the concepts/ formulae.**

3.i Analytical Modelling

Analytical modeling of transient flow conditions in confined, unconfined, and semi-confined aquifers can be challenging, and there are several analytical solutions that can be used for this purpose. Some well-known equations that could be ideally used for predicting the impact of groundwater withdrawals on regional groundwater levels through analytical modelling in different types of aquifers are as following.

a) Confined Aquifers:

The **Cooper-Jacob equation** is an analytical solution that can be used for estimating drawdown in a confined aquifer with a fully penetrating well.

Example:

The confined aquifer system has the following characteristics:

Aquifer thickness: 100 m; Hydraulic conductivity: 10 m/day; Specific storage: 0.0002; Transmissivity: 1000 m²/day; Pumping rate: 200 m³/day; Distance from the well to the observation well: 500 m; Time since start of pumping: 1 year.

To use the Cooper-Jacob method, two dimensionless parameters, viz. the Theis non-dimensional time (u) and the Theis non-dimensional distance need to be calculated first, using the following equations:

$$u = S * T / t * r^2$$

$$r = (4 * T * t / S)^{0.5} * r'$$

where

' S ' is the specific storage of the aquifer (m⁻¹), ' T ' is the transmissivity of the aquifer (m²/day), ' t ' is the time since pumping began (days) and ' r ' is the distance from the pumping well to the observation well (m).

Using these equations, the value of r for the aquifer system is calculated as:

$$r = (4 * 1000 * 365 / 0.0002)^{0.5} * 500 = 28,081 \text{ m}$$

The value of u is then calculated as:

$$u = 0.0002 * 1000 / (365 * 365) * 28,081^2 = 0.856$$

Next, the Cooper-Jacob method is used to calculate the drawdown (s) at the observation well using the equation

$$s = Q / (4 * \pi * T) * W(u)$$

where:

Q is the pumping rate (m³/day), T is the transmissivity of the aquifer (m²/day) and $W(u)$ is the Cooper-Jacob well function, which is a function of the Theis non-dimensional time (u)

Using a table of well function values, we can find that $W(u) = 0.290$ for $u = 0.856$.

Replacing the values, we get:

$$s = 200 / (4 * \pi * 1000) * 0.290 = 0.018 \text{ m}$$

Therefore, the drawdown at the observation well after one year of pumping will be 0.018 meters.

The **Hantush-Jacob equation** is a modification of the Theis' solution that accounts for the delayed response of a confined aquifer with a partially penetrating well.

Example:

The confined aquifer system has the following characteristics:

Aquifer thickness: 50 m; Hydraulic conductivity: 25 m/day; Specific yield: 0.2; Storage coefficient: 0.0004; Transmissivity: 1250 m²/day; Pumping rate: 300 m³/day; Distance from the well to the observation well: 750 m; Time since pumping began: 2 years

To use the Hantush-Jacob method, the Hantush-Jacob dimensionless parameter (s) is calculated using the following equation:

$$s = 2 * rw * (T * t / S)^{0.5}$$

where:

rw is the radius of the pumping well (m), T is the transmissivity of the aquifer (m²/day), t is the time since pumping began (days) and S is the storage coefficient of the aquifer (dimensionless)

Using these equations, we can calculate the value of s for our system:

$$s = 2 * 0.1 * (1250 * 2 / 0.0004)^{0.5} = 200$$

Next, the Hantush-Jacob method is used to calculate the drawdown (s) at the observation well using the equation:

$$s = Q / (4 * pi * T) * f(s)$$

where:

Q is the pumping rate (m³/day), T is the transmissivity of the aquifer (m²/day) and $f(s)$ is the Hantush-Jacob well function, which is a function of the Hantush-Jacob dimensionless parameter (s)

Using a table of well function values, $f(s) = 0.348$ for $s = 200$.

Drawdown is then calculated by using the values mentioned above:

$$s = 300 / (4 * pi * 1250) * 0.348 = 0.018 \text{ m}$$

Therefore, the drawdown at the observation well after two years of pumping is 0.018 meters.

Note: the Hantush-Jacob method assumes steady-state flow conditions, which may not be appropriate for highly transient aquifer systems. In such cases, numerical modelling may be necessary to accurately predict changes in regional groundwater levels.

b) Unconfined Aquifers:

The **Theis equation** is the most commonly used analytical solution for predicting drawdown in an unconfined aquifer with a fully penetrating well.

Example:

The following values are assumed for the analysis

Pumping rate (Q) = 500 m³/day; Aquifer hydraulic conductivity (K) = 20 m/day; Aquifer thickness (b) = 30 m; Distance from the pumping well (r) = 800 m; Initial hydraulic head (H_0) = 40 m; Specific storage (S_s) = 0.0002

The drawdown (s) is calculated using Theis' equation:

$$s = (Q / (4 * \pi * K * S_s)) * W(u)$$

where $W(u)$ is the well function and u is a dimensionless parameter given by:

$$u = r^2 * S_s / (4 * K * t), \text{ where } t \text{ is the pumping time.}$$

For a pumping period of 1 year (365 days), the drawdown at a specific time is calculated using the following equation:

$$s = (Q / (4 * \pi * K * S_s)) * W(u) * \exp(-r^2 * S_s / (4 * K * t))$$

To find the well function value, the value of u is first calculated.

$$\begin{aligned} u &= r^2 * S_s / (4 * K * t) \\ &= (800)^2 * 0.0002 / (4 * 20 * 365) = 0.03288 \end{aligned}$$

Looking up the value of $W(u)$ from the well function table, we find that for $u = 0.03288$, $W(u) = 0.246$.

Substituting these values into the equation for drawdown, we get:

$$\begin{aligned} s &= (500 / (4 * \pi * 20 * 0.0002)) * 0.246 * \exp(-(800)^2 * 0.0002 / (4 * 20 * 365)) \\ &= 2.05 \text{ m} \end{aligned}$$

Therefore, the drawdown at a distance of 800 m from the pumping well after 1 year of pumping would be 2.05 m. This information can be used to predict changes in regional groundwater levels and manage groundwater resources accordingly.

The **Cooper-Jacob** equation can also be used for an unconfined aquifer, with the consideration of the unsaturated zone.

Example:

The following values are assumed for the analysis

Pumping rate (Q) = 1500 m³/day; Aquifer hydraulic conductivity (K) = 30 m/day; Aquifer thickness (b) = 25 m; Distance from the pumping well (r) = 600 m; Specific yield (S_y) = 0.15; Initial hydraulic head (H_0) = 45 m;

The Cooper-Jacob method involves calculating the dimensionless time, S , and the dimensionless distance, R , as follows:

$$\begin{aligned} S &= K * t / (b * S_y) \\ R &= r * (S_y / (K * b))^{0.5} \end{aligned}$$

where t is the pumping time.

Using these dimensionless parameters, the drawdown (s) can be calculated using the following equation:

$$s = (Q / (4 * \pi * K * b * S_y)) * f(S, R)$$

where $f(S, R)$ is a dimensionless function that can be found in tables or calculated using numerical methods.

For a pumping period of 1 year (365 days), the drawdown at a specific time can be calculated using the following equation:

$$s = (Q / (4 * \pi * K * b * S_y)) * f(S, R) * \exp(-S)$$

To find the value of $f(S, R)$, we need to first determine the values of S and R .

$$S = K * t / (b * S_y) = 30 * 365 / (25 * 0.15) = 730$$

$$R = r * (S_y / (K * b))^{0.5} = 600 * (0.15 / (30 * 25))^{0.5} = 0.346$$

Looking up the value of $f(S, R)$ from the Cooper-Jacob table, we find that for $S = 730$ and $R = 0.346$, $f(S, R) = 0.198$.

Substituting these values into the equation for drawdown, we get:

$$s = (1500 / (4 * \pi * 30 * 25 * 0.15)) * 0.198 * \exp(-730) = 4.07 \text{ m}$$

Therefore, the drawdown at a distance of 600 m from the pumping well after 1 year of pumping would be 4.07 m.

c) Semi-Confined Aquifers:

The **Walton model** is a semi-analytical solution that combines the Theis and Hantush equations to predict drawdown in a semi-confined aquifer with a fully penetrating well.

Example:

The following parameters are assumed:

Pumping rate (Q) = 2000 m³/day; Aquifer hydraulic conductivity (K) = 100 m/day; Aquifer thickness (b) = 20 m; Specific storage (S_s) = 5×10^{-5} m⁻¹; Specific yield (S_y) = 0.2; Distance from the pumping well (r) = 500 m; Initial hydraulic head (H_0) = 40 m; Aquitard hydraulic conductivity (K_t) = 1×10^{-5} m/day; Aquitard thickness (T) = 5 m

The Walton model involves calculating the dimensionless time, τ , and the dimensionless distance, ξ , as follows:

$$\tau = S_s * t / (S_y * b)$$

$$\xi = r / (4 * (K_t * T / K)^{0.5})$$

where t is the pumping time.

Using these dimensionless parameters, the drawdown (s) can be calculated using the following equation:

$$s = (Q / (4 * \pi * K * b)) * F(\tau, \xi)$$

where $F(\tau, \xi)$ is a dimensionless function that can be found in tables or calculated using numerical methods.

For a pumping period of 1 year (365 days), we can calculate the drawdown at a specific time using the following equation:

$$s = (Q / (4 * \pi * K * b)) * F(\tau, \xi) * \exp(-\tau)$$

To find the value of $F(\tau, \xi)$, we need to first determine the values of τ and ξ .

$$\tau = S_s * t / (S_y * b) = 5 \times 10^{-5} * 365 / (0.2 * 20) = 0.0453$$

$$\xi = r / (4 * (Kt * T / K)^{0.5}) = 500 / (4 * (1 \times 10^{-5} * 5 / 100)^{0.5}) = 100$$

Looking up the value of $F(\tau, \xi)$ from the Walton table, we find that for $\tau = 0.0453$ and $\xi = 100$, $F(\tau, \xi) = 0.103$.

Substituting these values into the equation for drawdown, we get:

$$s = (2000 / (4 * \pi * 100 * 20)) * 0.103 * \exp(-0.0453) = 2.52 \text{ m}$$

Therefore, the drawdown at a distance of 500 m from the pumping well after 1 year of pumping would be 2.52 m.

The **Hantush equation** is a purely analytical solution that can be used to estimate the drawdown in a semi-confined aquifer with a partially penetrating well.

Example

The following parameters are assumed:

Pumping rate (Q) = 1000 m³/day; Aquifer hydraulic conductivity (K) = 50 m/day; Aquifer thickness (b) = 25 m; Specific storage (S_s) = 2×10^{-5} m⁻¹; Specific yield (S_y) = 0.15; Distance from the pumping well (r) = 400 m; Well radius (r_w) = 0.15 m; Aquitard hydraulic conductivity (K_t) = 2×10^{-6} m/day; Aquitard thickness (T) = 6 m

Using the Hantush equation, we first need to calculate the dimensionless time, ϑ , and the dimensionless distance, η :

$$\vartheta = (S_s / S_y) * t = (2 \times 10^{-5} / 0.15) * 365 = 0.8765$$

$$\eta = (r^2 * K * S_s / (4 * K_t * b * S_y))^{0.5}$$

$$= (400^2 * 50 * 2 \times 10^{-5} / (4 * 2 \times 10^{-6} * 25 * 0.15))^{0.5} = 146.69$$

Next, we need to find the value of the well function, $w(u)$, using the table provided. The value of u can be calculated as follows:

$$u = (\eta^2 * \vartheta) / (T * r^2) = (146.69^2 * 0.8765) / (6 * 400^2) = 0.000518$$

Using the table, we find that the corresponding value of $w(u)$ is approximately 0.156.

Finally, we can calculate the drawdown (s) using the Hantush equation:

$$\begin{aligned} s &= (Q / (4 * \pi * K * b * S_y)) * (1 / \eta) * w(u) * \exp(-\eta^2 / (4 * \vartheta)) \\ &= (1000 / (4 * \pi * 50 * 25 * 0.15)) * (1 / 146.69) * 0.156 * \exp(-146.69^2 / (4 * 0.8765)) = 1.47 \text{ m} \end{aligned}$$

Therefore, the predicted drawdown at a distance of 400 m from the pumping well after one year of pumping is 1.47 m.

3.ii Numerical Modelling

There are several numerical models commonly used for predicting changes in regional groundwater levels in response to groundwater withdrawals, including:

- a. **MODFLOW (MODular three-dimensional Finite-difference groundwater flow model):** This is a widely used and highly customizable numerical model that can

simulate groundwater flow in three dimensions under steady-state or transient conditions.

- b. **FEFLOW (Finite Element subsurface FLOW system):** This model is based on the finite element method and can simulate groundwater flow and transport in both two and three dimensions.
- c. **SEAWAT (SEAwater-intrusion and-density-dependent groundWATER flow):** This is a coupled groundwater flow and solute transport model that can simulate saltwater intrusion and density-dependent flow in coastal aquifers.
- d. **MT3DMS (Multi-species Transport in 3-Dimensions Mass-Transport Model):** This is a numerical model that can simulate the transport of multiple solutes in three dimensions, including their interaction with the groundwater flow field.
- e. **SUTRA (Saturated-Unsaturated Transport):** This model is based on the finite element method and can simulate both saturated and unsaturated flow in porous media, including solute transport and heat transfer.

These models vary in their complexity, capabilities, and required input data. The choice of model depends on the specific objectives of the study, available data, and the level of accuracy required for the predictions.

To use numerical models for predicting changes in regional groundwater levels in response to groundwater withdrawals, a number of steps must be followed:

- a. **Data collection:** Collect relevant data such as groundwater recharge rates, hydraulic conductivity, and pumping rates.
- b. **Model construction:** Develop a numerical model using appropriate software such as MODFLOW, FEFLOW, or SEAWAT. This involves defining the aquifer properties, boundary conditions, and sources and sinks of groundwater.
- c. **Calibration:** Calibrate the model by adjusting the input parameters to match the observed groundwater levels and flow rates.
- d. **Scenario development:** Develop scenarios that reflect different pumping rates or changes in the aquifer properties over time.
- e. **Prediction:** Run the numerical model for each scenario and analyze the predicted changes in groundwater levels and flow rates.
- f. **Validation:** Validate the model predictions by comparing them with observed groundwater levels and flow rates.
- g. **Sensitivity analysis:** Perform a sensitivity analysis to assess the impact of uncertainties in the input parameters on the model predictions.

The choice of numerical model depends on the specific objectives of the study, available data, and the level of accuracy required for the predictions. The model should also be validated using observed data to ensure its reliability for making predictions.

Model Calibration

Calibration of outputs from modelling is essential for accurate prediction of changes in regional water levels in response to groundwater withdrawal. Calibration is the process of adjusting model parameters to match observed data, which allows the model to make more accurate predictions.

Groundwater models use mathematical equations to simulate the flow of water through an aquifer. These equations are based on physical laws and properties of the aquifer, such as hydraulic conductivity, porosity, and recharge rates. The accuracy of the model depends on the accuracy of these parameters.

However, in most cases, the exact values of these parameters are not known with certainty. Therefore, calibration is necessary to adjust these parameters based on observed data, such as water levels in monitoring wells. By comparing the model predictions with the observed data, the model parameters can be adjusted until the model output matches the observed data.

Calibration helps reduce uncertainty in the model predictions, and provides a more accurate representation of the aquifer system. It is important to note that calibration is an iterative process and requires an understanding of the aquifer system and the limitations of the model.

Procedure for calibration:

Through the process of analytical or numerical modelling, water levels are simulated within the specified time domain using the analytical solution depending on the aquifer type and using the available parameters. For calibration of the model, a fixed number of observation wells are identified at varying distances from the pumping well within its cone of depression. The water levels in the observation wells are recorded at regular intervals. The water level / piezometric head in each well is then simulated for the same time periods using the analytical solution selected. The model can then be calibrated by adjusting the values of parameters such as T and S or S_y to get as close a match as possible to the measured water levels.

The reliability of the model outputs could be analyzed by calculating the the Root Mean Square (RMS) error and and the Normalized Root Mean Square (NRMS) error.

NRMS can be computed as a percentage by dividing RMS either by the mean of observed heads or Range of observed heads or standard deviation of observed heads.

For prediction of ground water levels in response to ground water withdrawal, an RMS error of up to 3.0m and NRMS error of up to 10% is considered acceptable. Even though it is considered mandatory to have both RMS and NRMS errors within the limits mentioned for treating the model as realistic, it is advisable to have at least one of these parameters within the prescribed limits in complex aquifer systems with limited data availability.

III ANNEXURES

Annexure-I: Water Quality Parameter Required for Various Types of Industries

DISCHARGING FACILITY	Gas and Oil	Dairy Products	Grain Mills	Canned Fruits & Vegetables	Canned & Preserved Sea Foods	Sugar Processing	Textiles	Cement	Feedlots	Electroplating	Organic Chemicals	Inorganic Chemicals	Plastics & Synthetics	Soap & Detergents	Fertiliser Manufacturing	Petroleum Refining	Iron & Steel Manufacturing	Non Ferrous	Phosphate Manufacturing	Steam Electric Power Generating	
Water quality parameters																					
Biochemical Oxygen Demand, BOD	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x					
Total Suspended Solids	x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
pH	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Faecal Coliforms	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease	x			x		x				x				x		x	x	x	x	x	x
Temperature	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Chemical Oxygen Demand, COD						x	x				x	x	x	x		x		x			
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus																				x	
Total Phosphorus						x				x						x				x	x
Ammonia (as N)												x			x	x	x	x			
Organic Nitrogen as N						x									x						
Nitrate						x									x		x				
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols							x				x		x				x	x			
Sulphide							x										x	x			
Total Chromium							x			x		x					x				
Chromium VI										x		x					x				x
Chrome																					
Copper										x		x	x								x
Nickel										x		x									
Zinc										x			x				x				x
Zinc												x									
Cntotal										x		x									
Cyanide A										x		x									
Fluorine										x		x	x						x	x	
Free Available Chlorine																					
Residual Chlorine	x																				x
Cadmium										x		x						x			
Lead										x		x						x	x		
Iron										x											
Tin										x		x									x
Silver										x											
Gold										x											
Iridium										x											
Palladium										x											
Rhodium										x											
Ruthenium										x											
Mercury (total)												x									
Total Organic Carbon												x						x			
Aluminium												x						x			
Arsenic												x						x		x	
Selenium												x									
Barium																					
Manganese																					x
Tannin																					
Oil																					
Settleable Solids																					
Surfactants																					

Annexure-I (Contd.)

DISCHARGING FACILITY	Fero Alloy manufacturing	Leather tanning & finishing	Glass	Asbestos manufacturing	Rubber processing	Timber products	Pulp, Paper & paperboard	Builders paper & paper board mills	Meat products	Paving and roofing materials	Intensive chemical agriculture farm	Edible vegetable oils and fats	Hotels, Restaurants and Game Lodges	Bakeries & wheat confectioneries	Breweries (malt)	Soft drinks and carbonated waters
Water quality parameters																
Biochemical Oxygen Demand, BOD		x	x		x	x	x	x	x	x		x	x	x	x	x
Total Suspended Solids	x	x	x	x	x	x	x	x	x	x			x	x	x	x
pH	x	x	x	x	x	x	x	x	x	x	X	x	x	x	x	x
Faecal Coliforms	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease		x			x	x	x	x	x	x			x	x		
Temperature	x	x	x	x	x	x	x	x	x	x		x	x	x	x	x
Chemical Oxygen Demand, COD			x	x	x							x			x	x
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus							x				x					
Total Phosphorus			x								x		x			
Ammonia (as N)	x		x						x		x		x			
Organic Nitrogen as N											x		x			
Nitrate																
Flow	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Phenols	x		x			x										
Sulphide																
Total Chromium	x	x			x											
Chromium VI	x															
Chrome		x														
Copper																
Nickel																
Zinc					x											
Zinc																
Cntotal	x															
Cyanide A																
Fluorine			x		x											
Free Available Chlorine							x	x								
Residual Chlorine																
Cadmium																
Lead																
Iron			x													
Tin																
Silver																
Gold																
Iridium																
Palladium																
Rhodium																
Ruthenium																
Mercury (total)																
Total Organic Carbon																
Aluminium																
Arsenic																
Selenium																
Barium																
Manganese	x															
Tannin		x														
Oil		x														
Settleable Solids								x								
Surfactants										x	x					

Annexure-I (Contd.)

DISCHARGING FACILITY	Sugar confectionery	Tobacco processing	Distilling & blending of spirits	Motor-vehicle assembly	Paints, varnishes & Batteries manufacture	Cosmetics	Printing, publishing & Domestic sewage system	Pharmaceutical industries	Tea/ Coffee Industries	Slaughter Houses	Combined sewage
Water quality parameters											
Biochemical Oxygen Demand, BOD	x	x	x	x	x		x	x	x	x	x
Total Suspended Solids	x				x	x	x	x	x	x	x
pH	x	x	x	x	x	x	x	x	x	x	x
Faecal Coliforms	x	x	x	x	x	x	x	x	x	x	x
Oil & Grease		x		x	x		x	x		x	x
Temperature	x	x	x	x	x	x	x	x		x	
Chemical Oxygen Demand, COD	x		x	x	x	x	x	x	x	x	x
Colour/Dye/Pigment	x	x	x	x	x	x	x	x	x	x	x
Elemental Phosphorus											
Total Phosphorus	x							x		x	x
Ammonia (as N)					x			x		x	x
Organic Nitrogen as N	x								x	x	x
Nitrate											x
Flow	x	x	x	x	x	x	x	x	x	x	x
Phenols											x
Sulphide	x						x				x
Total Chromium					x						x
Chromium VI											x
Chrome											
Copper											
Nickel											
Zinc											
Zinc											
Cntotal											
Cyanide A											
Fluorine											
Free Available Chlorine											
Residual Chlorine											
Cadmium				x							
Lead				x							
Iron											
Tin											
Silver				x							
Gold											
Iridium											
Palladium											
Rhodium											
Ruthenium				x							
Mercury (total)											
Total Organic Carbon											
Aluminium											
Arsenic											
Selenium											
Barium											
Manganese											
Tannin											
Oil				x							
Settleable Solids											
Surfactants											