

Environment Impact Assessment (EIA)

- Procedure,
 - Monitoring and
 - Compliance
- for
- ## Oil & Gas Exploration Activities

**Oil & Gas Sector
High Priority Sector
in view of
Energy requirement &
Dependence on imports.**

ENVIRONMENT IMPACT ASSESSMENT NOTIFICATION, 2006

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- All the Offshore and Onshore oil and gas exploration, development and production projects are listed at S.N. 1(b) under Category 'A' and appraised at the Central level.
- Exploration surveys (not involving drilling) are exempted from the concession areas who have got previous clearance for physical survey.
- All Oil & Gas Transportation Pipeline (crude and refinery/petrochemical products) passing through national parks/sanctuaries/coral reefs/ ecologically sensitive areas (including LNG Terminal) are listed at S.N. 6 (a) under category 'A' and appraised at Central level.

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Procedure

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- Application in Form-I, Pre-feasibility Report and draft TORs.
- TORs finalization by Expert Appraisal Committee -EAC (Industry-2).
- Intimation of TORs to Project Proponent and display on Ministry's Website.
- Procedure to be completed in 60 days.

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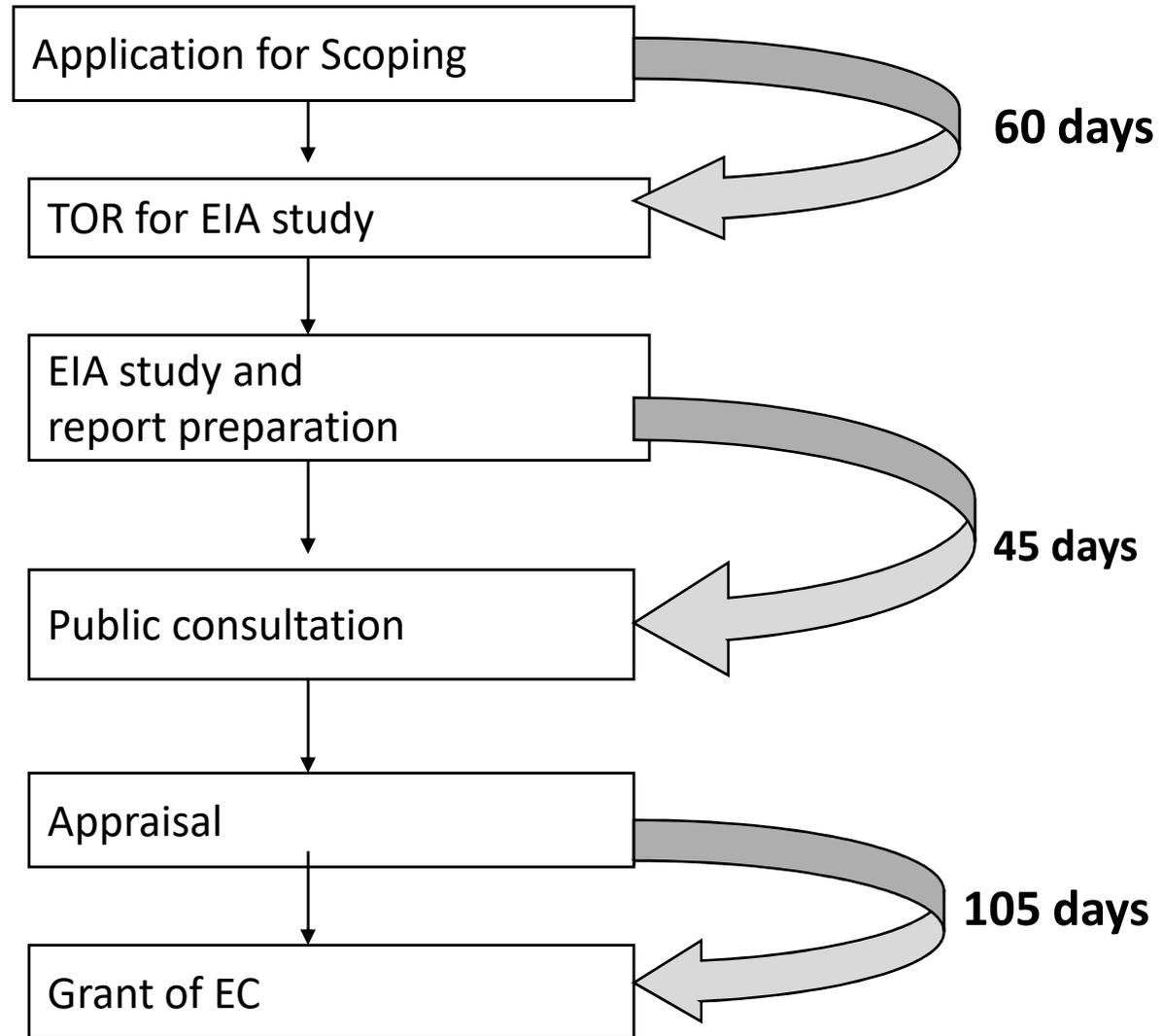
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Revised EC process

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REIA- 120 -150 days



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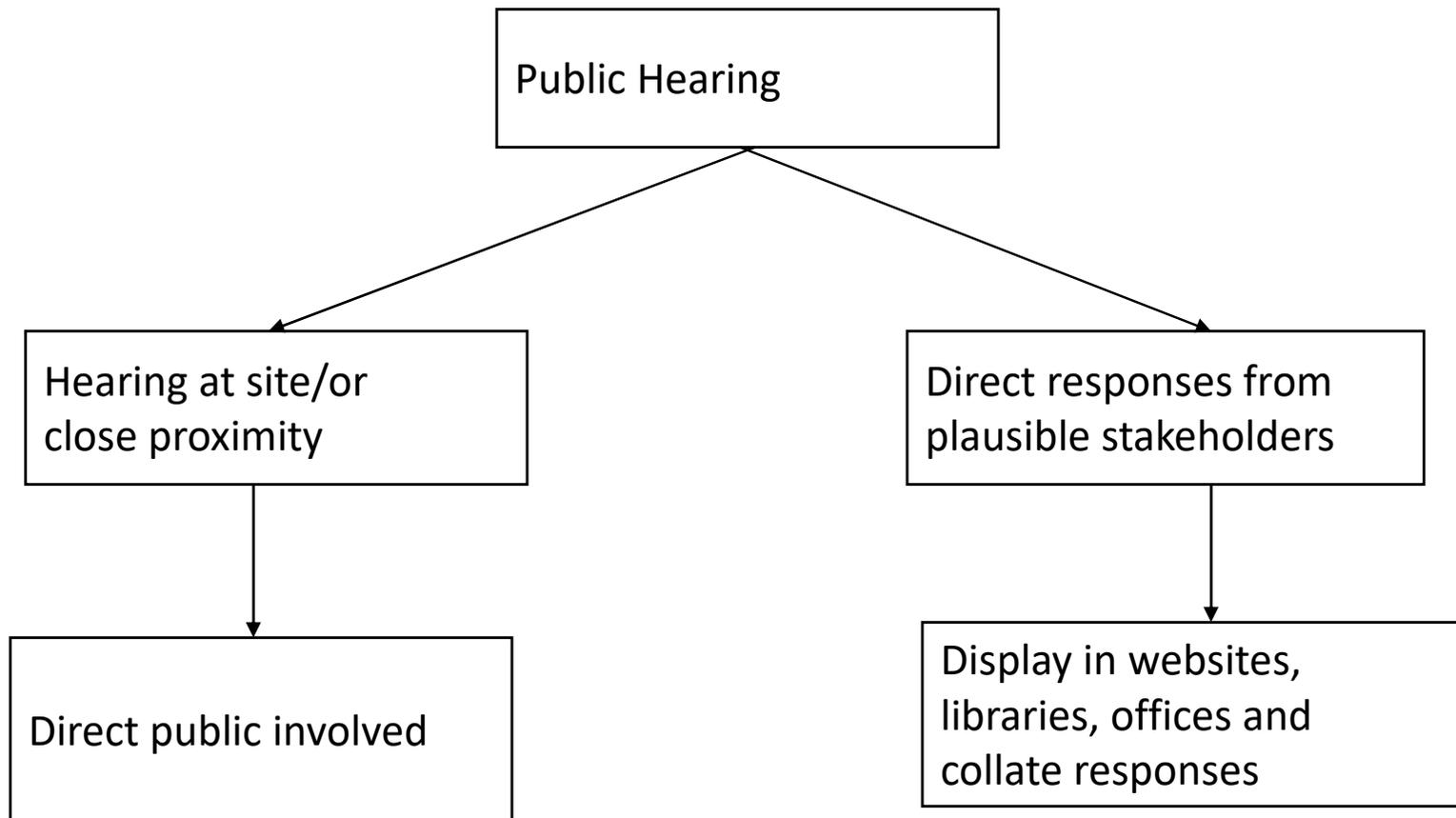
The EC process is expected to take about 11-12 months (minimum)

Public Hearing / Public Consultation

- All the commitments made to the public during the Public Hearing / Public Consultation meeting to be satisfactorily implemented.
- No Public Hearing / Public Consultation is required, If offshore oil & gas exploration is beyond 12 nautical miles.

Public Consultation

- To ascertain the concerns of local affected persons and others who have a plausible stake in environmental impacts of the project/activity



Public Hearing (PH)

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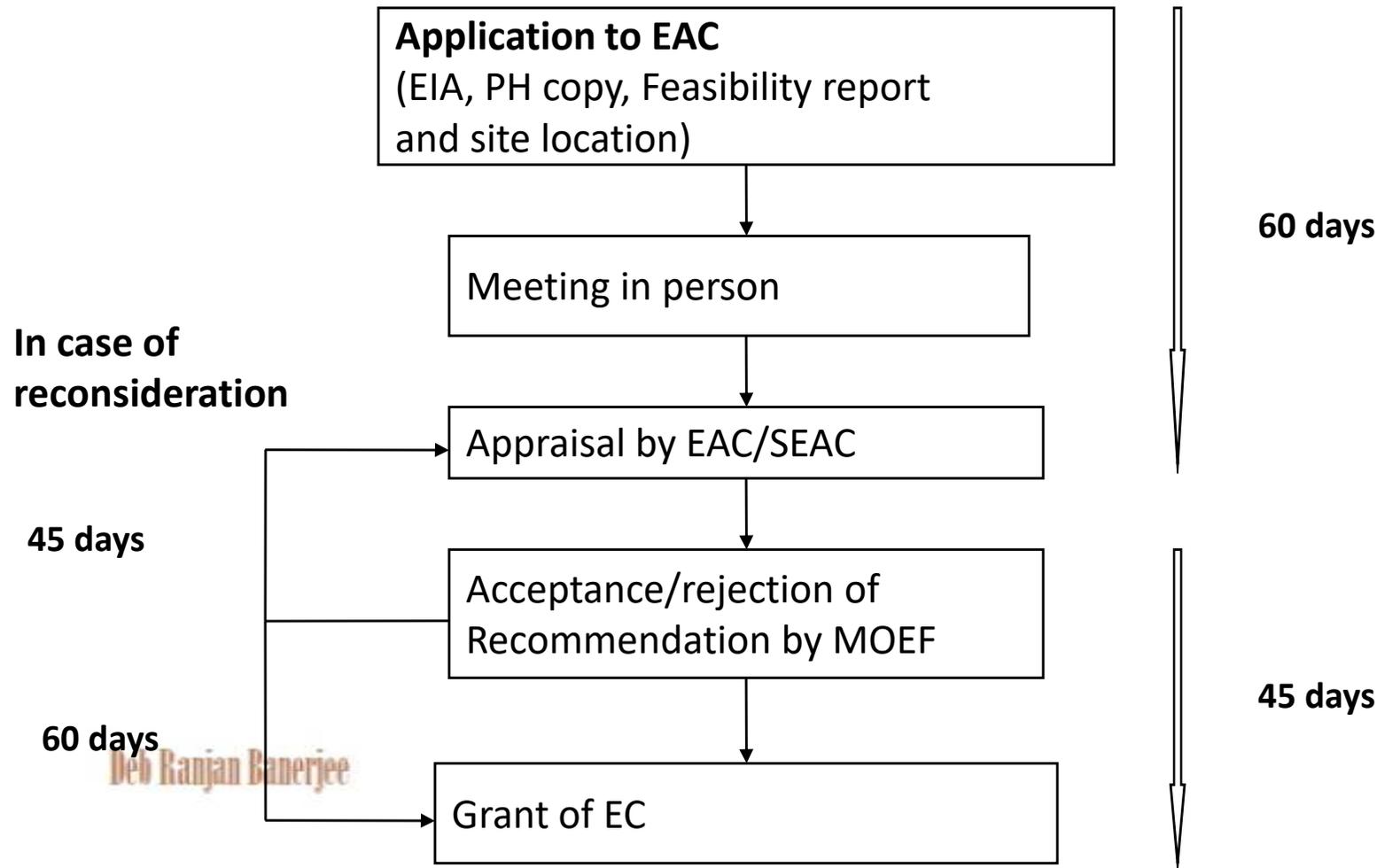
- Exceptions to certain projects
(located in industrial areas, modernization and expansion of irrigation projects, construction and defense projects, offshore projects) .
- To be completed in 45 days.
- Alternate public authority/agency to be engaged in case SPCB fails comply with time limit.
- Incorporation of public concerns in EIA report.
- Videography of proceedings must and to be enclosed with application for EC.
- Preparation of PH proceedings and signature by DM on the same day.
- Display of PH Proceedings in web site and other Govt. offices

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Appraisal of projects

- **Appraisal means detailed scrutiny of application and EIA report as per TOR agreed**



Clearances from other regulators not required unless it is required due to law or for necessary technical reason

Air

- The Air (Prevention and Control of Pollution) Act, 1981 and amendments thereafter.
- The Environment Protection Act, 1986 – Guidelines for discharge for gaseous emissions by Oil Drilling and Gas Extraction Industry as notified vide notification dated GSR 176(E) April, 1996.
- The Environment (Protection) Second Amendment Rules, 2002 Emission Standards for New Generator Sets.
- The Factories Act, 1948 and amendments thereafter.
- The Motor Vehicle Act, 1938 and amendments thereafter.

Water

- The Water (Prevention and Control of Pollution) Act, 1974 and amendments thereafter.
- The Environment Protection Act, 1986 – Standards for liquid discharge by Oil Drilling and Gas Extraction Industry as notified vide notification dated GSR 176 (E) April, 1996.

Solid / Hazardous Wastes

- Hazardous Wastes (Management, Handling and Trans-boundary Movement) Rules, 2008 and amendments thereafter.
- Guidelines for disposal of solid waste by Oil Drilling and Gas Extraction industry as notified, vide notification dated GSR 176 (E) April, 1996.
- Manufacture Storage and Import of Hazardous Chemicals, 1989 and amendments thereafter.

Noise

- The Environment (Protection) Second Amendment Rules, 2002 (Noise Limits for New Generators Sets).
- The Noise (Regulation & Control) Rules, 2000.

Other Regulations

- Oil Mines Regulations, 1981
- Oil Field (Regulation and Development) Act, 1948 and
- The Petroleum & Natural Gas Rules, 1959 and amendments thereafter.

Codes and Standards

- **The surface facilities to be installed as per applicable codes and standards, international practices and applicable local regulations.**

Safety

- **Pre-hire rig inspection, safety meetings, tool box meeting, job safety analysis and audits** to be carried out to identify hidden potential hazardous.

Pipeline Safety

- The design, material of construction, assembly, inspection, testing and **safety aspects of operation and maintenance of pipeline** and transporting the natural gas/oil to be governed by **ASME/ANSI B 31.8/B31.4** and **OISD standard 141**.

Pipeline Safety

- Install **SCADA system with dedicated optical fibre based telecommunication link for safe operation of pipeline and Leak Detection System**. Supervisory Control and Data Acquisition (**SCADA**) is monitoring software used to control the PLC and record data, even from remote locations.
- **Intelligent pigging facility** to be provided for the entire pipeline system for internal corrosion monitoring.
- Coating and impressed current **cathodic protection system** to be provided to prevent external corrosion.

Coastal & Marine Biodiversity

- **Undertake** conservation measures to **protect the marine animals/biota** in the region.
- **Adopt and implement** International 'Good Practices' viz. **International Norms to safeguard the Coastal and Marine biodiversity.**

Recommendations

- **Comply** with the environmental protection measures and safeguards recommended in the **EIA / EMP / Risk Assessment / NIO report.**

Monitoring

- **Monitor** petroleum **Hydrocarbons** and **Heavy Metals concentration** in the marine fish species regularly and **submit** report to the Ministry.

ENVIRONMENTAL CONCERNS FOR THE ON/OFF-SHORE EXPLORATION AND DRILLING PROJECTS

1. LAND :

- **Compensation for the land acquisition to the land oustees** - as per the National Resettlement and Rehabilitation Policy (NRRP) 2007/State Government norms.
- Compensation provided shall not be less than the norms of the NRRP, 2007.

Infrastructure Facilities

- **Provide** requisite **infrastructure facilities** near the offshore installations so that **booms and skimmers / chemical dispersants** could be deployed immediately in case of oil leakage from the installations.

Oil Slick

- **Efforts to be made to curtail the oil slick within 500 meters of the installation.**
- **Prepare Action Plan and provide facilities to check the oil slick beyond 500 meters.**

2. FOREST / CRZ CLEARANCE :

- **Obtain forest clearance under Forest Conservation Act, 1980** and subsequent amendments for the sites located within the forest areas, if any.
- Delist Forest, if possible.
- At **TOR Stage** – Submit a copy of the Application submitted to the State Forest Department / SCZMA.
- At **EC Stage** – Submit a copy of the forest land / CRZ approval. Otherwise, application for EC is pending till forest land / CRZ approval is obtained.

3. Ambient air quality

- **Monitor Ambient air quality** near the closest human settlements **as per the National Ambient Air Quality Emission Standards** issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009.
- **Analyze Mercury in air, water and drill cuttings twice during drilling period.**

Flare & Stack Emissions

- **Flare system to be designed as per good oil field practices and oil industry Safety Directorate (OISD) guidelines.**
- **The stack height and emissions from stacks as per MOEF/CPCB guidelines.**

Water Requirement

- Minimum **water requirement** for well and prior permission to be obtained **from the CGWA/SGWB/Competent authority**.
- **Permission from the SPCB for the discharge of treated wastewater** to be obtained.
- **Permission** to be submitted **to the Ministry's Regional Office**.

Wastewater Treatment

- Construct **garland drain all around the drilling site** to prevent runoff of any oil containing waste into the nearby water bodies.
- **Separate drainage system** to be created for oil contaminated and non-oil contaminated.
- **Effluent to be properly treated** to meet CPCB standards.

Disposal of Solid Waste

- Drilling wastewater including **drill cuttings wash water to be collected in disposal pit lined with HDPE lining**, evaporated or treated to comply with the notified standards for on-shore disposal.
- **Membership of common TSDF** to be obtained for the disposal of drill cuttings and hazardous waste.
- **Otherwise create secured land fill** at the site as **approved by the CPCB and obtain the authorization of the SPCB.**
- Copy of **authorization or membership of TSDF** to be submitted to Ministry's Regional Office.

Hazardous Waste Management

- **Hazardous waste** generated at the rig facility to be **properly treated, transported to on-shore and disposed of in accordance with the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2008.**

Oil Spillage

- **Oil spillage scheme to be prepared.**
- **In case of oil spillage/contamination, action plan to be prepared to clean the site by adopting proven technology.**
- **The recyclable waste (oily sludge) and spent oil to be disposed off to the authorized recyclers/reprocessors.**

Fire Hazards : Oil Spill and Soil Remediation

- Take necessary measures to **prevent fire hazards, containing oil spill and soil remediation as needed.**
- At place of **ground flaring, the overhead flaring stack with knockout drums to be installed to minimize gaseous emissions during operation.**
- To prevent fire and explosion at Oil and Gas facility, **potential ignition sources to be kept to a minimum and maintain adequate separation distance between potential ignition sources and flammable material.**

H₂S Release

- **A contingency plan for H₂S release to be in place.**
- **Evacuation to resumption of normal operations.**
- **Workers to be provided with personal H₂S detectors in locations of high risk of exposure along with self containing breathing apparatus.**

Solid Waste, Drill Cutting and Drilling Fluids

- **Solid waste, drill cutting and drilling fluids disposal for onshore drilling operation as per vide GSR. 546(E) dated 30th August, 2005.**
- **Drill cutting (DC) wash water to be treated to conform to limits notified under the Environment (Protection) Act, 1986 before disposal.**
- **The treated effluent shall be monitored regularly.**
- **Top soil removed to be stacked separately for reuse during restoration process.**

Emergency Response

- **Emergency Response Plan** shall be based on the guidelines prepared by OISD, DGMS and Govt. of India.

Restoration of Drilling Site

- Measures after **completion of drilling process** :
 - **Well plugging and secured enclosures,**
 - **Decommissioning of rig upon abandonment of the well and,**
 - **Restoration of the drilling site to the original condition.**
- If no economic quantity of hydrocarbon is found :
 - **A full abandonment plan** to be implemented for the drilling site as per **Indian Petroleum Regulations.**

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Commercial Viability

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- **In case the commercial viability :**
 - **Prepare a detailed plan for development of oil and gas fields and obtain fresh environmental clearance from the Ministry.**
 - **Comply with the environmental protection measures and safeguards recommended in the**
EIA/EMP report
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Public Hearing / Public Consultation

- All the **commitments made to the public during the Public Hearing / Public Consultation meeting to be satisfactorily implemented.**

Occupational Health Surveillance

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- **Occupational health surveillance** of the workers to be carried out as per the prevailing Acts and Rules.

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Infrastructure and Facilities for Labour

- Provisions for the **housing of construction labour** within the site with infrastructure and facilities e.g. **fuel for cooking, mobile toilets, mobile STP, Safe drinking water, medical health care, crèche etc.**
- The housing may be in the form of temporary structures to be removed after the completion of the project.

Drilling Mud

- **Only water based drilling mud to be used.
Drilling mud to be recycled.**
- **Quantities of storage and chemicals and additives required for drilling mud preparation to be below the specified threshold for specified storage permitted under the MSIHC Rules.**

Noise

- The company shall make the **arrangement for control of noise from the drilling activity and DG sets**. The Company shall take necessary measures to reduce noise levels such as proper casing at the drill site and meet DG set norms notified by the MoEF.

Expansion or Modification

- Adhere to the **stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.**
- **No further expansion or modification** in the project to be carried out **without prior approval** of the Ministry of Environment & Forests.
- In case of **deviations or alterations**, a fresh reference to be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.

Environmental Management Cell

- **Environmental Management Cell** equipped with full fledged laboratory facilities to be set up to carry out the environmental management and monitoring functions.

Funds

- **Adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government alongwith the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.**

Public Domain

- **Environment clearance letter by the proponent to Panchayat, Zila Parishad / Municipal Corporation, Urban Local Body and the local NGO.**
- **Environment clearance letter on the web site of the company by the proponent.**
- **Project Proponent to upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and shall update the same periodically.**

Monitoring

- Data to the Regional Office of the MOEF, respective Zonal Office of CPCB and the SPCB.
- The **criteria pollutant levels** namely; **SPM, RSPM, SO₂, NO_x, HC (Methane & Non-methane), VOCs** (ambient levels as well as stack emissions) **or critical sectoral parameters**, indicated for the projects shall be **monitored**.
- **Data to be displayed at a convenient location near the main gate of the company in the public domain**

Compliance Reports & Monitoring

- Project proponent to **submit six monthly reports on the status of the compliance** of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the **Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB.**
- The Regional Office of this Ministry / CPCB / SPCB shall monitor the stipulated conditions.

Environment Clearance on Website

- The **environmental statement for each financial year ending 31st March in Form-V** to be submitted by the PAs to the concerned SPCB as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently.
- Environment clearance **on the website of the company** alongwith the **status of compliance of environmental conditions and shall also be sent to the respective Regional Offices of the MOEF** by e-mail.

Publicity for Environment Clearance

- PAs to **inform the public** regarding according environmental clearance by the Ministry and copies of the **clearance letter are available with the SPCB** and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>.
- This **shall be advertised within seven days**, at least in two local newspapers widely circulated in the region, of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional office.

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Thank You

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