



IndianOil
Barauni Refinery

Status as on 30.09.2020

Subject: Catalytic Reformer at Barauni Refinery of Indian Oil Corporation Environment clearance.

Ref: Ministry's clearance letter no J-11011/10/89-IA dated 25.07.1989

SN	ITEM	STATUS
1.	The project authority must strictly adhere to stipulations made by the State Government and the State Pollution Control Board.	<ul style="list-style-type: none">• Emission Consent order from Bihar Pollution Control Board has been renewed vide letter no B-652 dated 01.02.2019 and Discharge Consent Order renewed vide letter no B-653 dated 01.02.2019 with validity from 01.01.2019 to 31.12.2023.• Complied.
2.	The project authority will not increase the throughput capacity of the refinery from the existing level.	<ul style="list-style-type: none">• Prior approval of ministry is always taken before carrying out any expansion or modification of the plant.• Complied
3.	The project authority must submit a rapid EIA report within 6 months and comprehensive EIA report within 18 months to this Ministry for review.	<ul style="list-style-type: none">• Complied.
4.	Gaseous emissions of sulphur dioxides, hydrocarbons and oxides of nitrogen should not exceed the standard prescribed by the Central/ State Pollution Control Board. At no time the emission level should be beyond the stipulated standard. In the event of failure of any pollution control system adopted by the unit, the respective unit should be put out of operation immediately and should not be restarted until the control systems are rectified to achieve the desired efficiency.	<ul style="list-style-type: none">• Process emissions at Barauni Refinery conform to the standards prescribed under the EPA rules.• Total SO₂ emissions from existing units at Barauni Refinery are less than the stipulated limit of 815 kg/hr as per latest EC.• Complied.
5.	The project authority will recycle the effluent to the maximum extent possible either as process water or for afforestation.	<ul style="list-style-type: none">• Effluent Treatment Plant (ETP) of 1000 m³/hr capacity and Biological Treatment Plant (BTP) of 1400 m³/hr capacity have been provided for treatment of effluent.• Treated effluent is completely reused in refinery operations, horticulture and eco ponds make up.• Complied.
6.	The entire quantity of liquid effluent coming out of the complex should conform to MINAS both in terms of quantity and quality	<ul style="list-style-type: none">• No effluent is being discharged to river Ganga since Oct 2013 and the line going to river Ganga has been dismantled.

	before discharge into the drainage system. The process plant effluent should be discharged through pipeline/closed channel.	<ul style="list-style-type: none"> • The treated water quality is within MINAS. • Complied.
7.	The project authority must set up minimum of four air quality monitoring stations at different locations of the plant and in the nearby areas. The air quality will be monitored as per standard procedure. The monitoring of gaseous emissions should also include oxides of nitrogen and hydrocarbons. All the stacks of the plant must be provided with continuous automatic stack monitoring equipment and stacks emission levels must be recorded and furnished to the State Pollution Control Board once in three months and to this Ministry once in six months.	<ul style="list-style-type: none"> • Eight manual (four in Refinery, one in township, three in periphery villages) air quality monitoring stations have been set up. Ambient air quality is checked twice in a week. • Three continuous online monitoring stations provided for ambient air quality monitoring covering 8 parameters viz PM 10, PM 2.5, SO₂, NO_x, CO, NH₃, Benzene and Ozone. The stations are also directly connected online with servers at CPCB and Bihar State Pollution Control Board (BSPCB). • The results are furnished to the BSPCB and the MoEF&CC (Regional office, Ranchi) at regular intervals as prescribed. • Continuous on-line stack analyzers for monitoring of SO₂, NO_x, CO & PM have been installed and connected to CPCB server for 20 nos. of stacks. • For stacks of CRU, New Prime-G, NHT-CCR by Mar 2021 • Process emissions from all units are sampled once in two months except Sulfur Recovery Unit (which is monitored monthly basis) and results on stack emission, and work zone monitoring data are furnished to the BSPCB and MoEF&CC (Regional Office, Ranchi). <p>Complied.</p>
8.	The liquid effluent quality must be assured on daily basis. At least five water quality monitoring stations must be set up in consultation with the State Pollution Control Board. This should include the monitoring of oil content in the river. If the effluent quality exceeds the standard prescribed at any time, the corresponding units of the plant which are contributing to the excessive pollutant loads shall be immediately stopped and operation must not be restarted till the quality of effluent discharged from the units are brought down to the required levels.	<ul style="list-style-type: none"> • Effluent quality monitoring points has been set up in consultation with BSPCB. The results are regularly furnished to the BSPCB and regional office, MoEF&CC, Ranchi. • Online effluent analyzers have been installed at the discharge of treated effluent and connected to CPCB and BSPCB server. • No effluent is being discharge to river Ganga since Oct 2013 and the line going to river Ganga has been dismantled. <p>Complied.</p>
9.	The project authority will ensure that the effluent treatment plant will be commissioned and operational within the next three months.	<ul style="list-style-type: none"> • Effluent Treatment Plant (ETP) of 1000 m³/hr capacity and Biological Treatment Plant (BTP) of 1400 m³/hr capacity have been provided for treatment of effluent. • Complied.
10.	The project authority must submit a disaster management plan duly approved by the nodal agency of the State within a period of three months. Disaster management plan	<ul style="list-style-type: none"> • Comprehensive On-site and Off-site Disaster Management Plan exist in refinery and updated regularly as per PNGRB guidelines. • On-site & Off-site mock drills are conducted quarterly and annually respectively. The Off-site drill is

	should include the worst accident scenario and its probable consequence.	<p>conducted with involvement of District Authority.</p> <ul style="list-style-type: none"> • Complied.
11.	The project authority will start construction only after the approval of Chief Controller of Explosive and a copy of consent letter should be made available to the Ministry.	<ul style="list-style-type: none"> • Complied
12.	No change in design of stacks should be made without the prior approval of the State Pollution Control Board. Alternate pollution control system and/or proper design (stacks injection system) of the stacks should be made to minimize hydrocarbon emission due to failure in the flare system in the plant.	<ul style="list-style-type: none"> • No change is done without prior approval of statutory bodies. • Low NOx burners are provided in furnaces to minimize hydrocarbon emission in stacks. • Complied
13.	The project authority must provide necessary infrastructure facilities to the construction worker during construction.	<ul style="list-style-type: none"> • Complied
14.	The project authority must take adequate measure to bring down the noise level. The protective measures taken by the project authority should be made available to this Ministry.	<ul style="list-style-type: none"> • Adequate noise control measures have been taken in new facilities in the project. • For personnel working in the proximity of high noise generating equipments, appropriate PPEs are used, and exposure is controlled through job rotation, education and awareness about PPEs compliance. • Six monthly monitoring report of noise level at different locations of plant are provided to MoEF&CC • Complied.
15.	The project authority will assess the impact on ground water contamination by the leachetes and the remedial measures taken by the project authority should be submitted to this Ministry for review. The project authority will also monitor the quality of ground water in the nearby areas and report should be submitted to the State Pollution Control Board once in every three months and to this Ministry once in six months.	<ul style="list-style-type: none"> • The ground water is checked by MoEF&CC certified agency at different locations in Refinery and nearby villages. • The report is submitted to BSPCB and MoEF&CC. • Complied.
16.	The project authority must set up laboratory facilities in the existing premises for testing and analysing gaseous emissions and water quality.	<ul style="list-style-type: none"> • A fully fledged laboratory facility is available at Barauni Refinery for testing of gaseous emission and water quality. Moreover, MoEF&CC approved third party monitoring is also done. • Complied.
17.	The project authority must submit a revised green belt details for the plant and township to this Ministry within three months for	<ul style="list-style-type: none"> • Total plot area of the refinery: 887.83 acres. • Green belt area in Refinery: 43.8 acres. • Green belt area in Refinery Township: 82.19 acres.

	approval. The green belt should be with a minimum tree density of 1000 trees per acre.	<ul style="list-style-type: none"> • Total green belt area: 125.99 acres. • Number of trees planted till date since 1995 is 111,174. • There is no further land available for tree plantation in Refinery and township. Barauni Refinery has made an agreement with East Central railway for 89.28 acre land for development of greenbelt. For additional land, discussion is going on with Forest Department of Bihar Govt.
18.	Additional area under the control of the project which is not being used for the plant utilities should be afforested and funds for this purpose should be suitably provided.	<ul style="list-style-type: none"> • Forestation is done at all places wherever plant utilities are not used. • Additional tree plantation also done in Refinery township and nearby areas. • Complied
19.	A separate environmental management cell with suitably qualified people to carry out various functions related to environmental management should be set up under the control of a senior technical person who will directly report to the head of the organization.	<ul style="list-style-type: none"> • A separate Environment Management Cell with well equipped dedicated pollution control laboratory exists at Barauni Refinery. • Complied.
20.	The fund provision (capital and recurring expenditure) for the environmental control measure should not be diverted for any other purpose. The implementation schedule for environmental control measure should be strictly followed.	<ul style="list-style-type: none"> • All facilities envisaged for environmental protection and monitoring have been provided in Barauni refinery expansion project. • In addition to one time investment in facilities for combating pollution, separate funds are allocated and utilized for specific activities such as bio-remediation of sludge, environment monitoring and studies related to environment etc. • Complied.
Further Stipulations		
1.	The Ministry of Environment and forest or any other competent authority may stipulate any further conditions after reviewing the impact assessment report or any other report prepared by the project authority.	<ul style="list-style-type: none"> • Noted for compliance.
2.	The above condition will be enforced, inter-alia, under the water (Prevention and Control of Pollution) Act, 1974; the Air (Prevention and Control of Pollution) Act, 1981 and the Environment (Protection) Act, 1986.	<ul style="list-style-type: none"> • Noted for compliance.
3.	The Ministry reserves the right to withdraw the clearance as and when necessary in the interest of the environmental protection.	<ul style="list-style-type: none"> • Noted for compliance.