

**BEFORE THE HON'BLE NATIONAL GREEN TRIBUNAL, PRINCIPAL BENCH,
FARIDKOT HOUSE, NEW DELHI
ORIGINAL APPLICATION NO. 43/2020 (EZ)**

IN THE MATTER OF:

BONANI KAKKAR

APPLICANT

VERSUS

OIL INDIA LIMITED & ORS.

RESPONDENTS

BRIEF SUMMARY BY OIL

REPLY TO RECOMMENDATIONS MADE BY THE EXPERT COMMITTEE

S. No.	Recommendations in the Final Report dated 31.12.2021	Reply and Action Taken by OIL
1.	No containment measures were taken to avoid the spread of the spilled gas condensate. This was also confirmed by OIL and its bio-remediation contractor during the interaction on October 10, 2021 at Dibrugarh. However, subsequent email communication with photographic evidence provided by OIL reveals that there were other contractors who were involved in the immediate response process. <u>The Oil Spill Contingency Plan (OSCP) for onshore operations of OIL, issued in 2013, and its related implementation and updates appears to be lacking. (Para 28(a) Page 24)</u>	<i>(Para 4s to 4u Page 17 and 18 of the Counter Affidavit dated 26.07.2022)</i> a) Pursuant to the blowout, the District Authority was immediately informed about the incident by OIL and were also requested for support including support for addressing any law-and-order situation that could arise. b) Further, the Crisis Management Team (CMT) members from Oil and Natural Gas Corporation Ltd. and an Expert Team from ONGC, Vadodara, approached the Well Head along with OIL, while taking all precautionary measures and

		<p>opened the casing valve and started pumping water through the casing valve.</p> <p>c) Water was being pumped continuously through the valve into the Well Head. In addition to that 7-8 nos. water monitors were placed for spraying of water through fire pump continuously to cool the Well Head.</p> <p>d) Additionally, several arrangements were also made by OIL to bring the Well under control such as:</p> <ul style="list-style-type: none">(i) Creation of facilities for pumping water to the blowing well.(ii) Infrastructure arrangement for capping the well.(iii) Pumping of sufficient water through the well annulus to make the flowing gas wet, thereby, reducing gas condensate spread to the nearby areas.(iv) Adequate water spraying through fire service pumps and nozzles/monitors.(v) Taking all adequate Health Safety and Environment (“HSE”) related measures.(vi) Continuous gas testing for Lower Explosive Limit (“LEL”) level around the well-plinth area.(vii) Fabricate hydraulically operated mechanized structure at OIL’s workshop for moving/placing the Blow-Out-Preventer (“BOP”) on the Well-Head.(viii) The mock drill of the unit was done on 08.06.2020 at the workshop of OIL.
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2.	<p>Backfilling of effluent pits and contaminated material with mixture of construction debris, burnt vegetation and asbestos were observed in and around the blowout area. <u>These sites need to be characterized and remediated.</u> (Para 35(d) Page 27)</p>	<p>Clean and Bio-remediated areas in and around the blowout site – <i>(Page 455 – 460 of Annexure R8 annexed with the Counter Affidavit dated 26.07.2022).</i></p> <p><u>OIL has incurred expenditure for backfilling of all the effluent pits amounting to approx. INR 40,32,000/- (Rupees Forty Lakhs Thirty-Two Thousand Only).</u></p>
3.	<p>(Dikom blowout, 2005) The visit was done by November 16, 2021. ...On the day of visit, the sludge recycling plant was not operational, and no sludge was found in the sludge bioremediation pond. The site visit and interactions with the staff put OIL in a poor light in terms of complying with the environment safeguards. Additionally, the Committee visited another abandoned well site at Talap, Tinsukia where OIL alongwith NERIST have developed a rehabilitated plot with native plant species post-bioremediation. (Para 19, Page 21)</p>	<p>Records of receipt of Oily Sludge at Sludge Processing Plant from various installations of OIL from July 2021 to July 2022 and records of receipt of Recovered Crude Oil at Dikom OCS from Sludge Processing Plant from December 2021 to July 2022. The records maintained by OIL during the regular course of its business and operations, clearly show that the Sludge Processing Plant of OIL has been fully operational.</p>
4.	<p>During the course of assessment of environmental damages, the Committee recognised several lapses in environmental clearance</p>	<p>● OIL has all the necessary statutory clearances and consents in place, for both before and after the blowout incident. (Para</p>

	<p>procedures, environmental management planning, monitoring systems, disaster management and others. (Para 23, Page 22)</p>	<p>4A from Page 4-15 of the Counter Affidavit dated 26.07.2022)</p> <ul style="list-style-type: none"> ● Further, the environmental management plans were also approved by the expert appraisal committee at the time of grant of environment clearance in the year 2020. (Para 4(i) and para 4(j) at Page 11 of the Counter Affidavit dated 26.07.2022) <p>Also, OIL has reviewed and revised 1044 SOPs after the blowout incident, which were being followed by OIL for its management and operations.</p>
<p>5.</p>	<p>No attempt was made to trace the Contaminants of Concern (CoC) in any part of the affected landscape by the said agency. (Para 28(b) Page 24)</p>	<p>Para II (L), Pages 42-46 of Counter Affidavit dated 26.07.2022 for Assessment of Environmental Quality of Soil and Vegetation Final Report by TERI vide Report dated 21.02.2022 annexed at Annexure R6 of the Counter Affidavit dated 26.07.2022.</p> <p>TERI was engaged to undertake the assessment of environmental quality of soil and vegetation in the vicinity of Baghjan Well No. 5. TERI had undertaken environmental assessment and sampling activities during the period 30.11.2021 to 04.12.2021. Report dated 21.02.2022 on Assessment of Environmental Quality of soil and vegetation in the vicinity of Baghjan Well No.5, Assam was submitted by TERI which states that no contamination has been found in the vegetation/plant samples.</p>
<p>6.</p>	<p>OIL initiated recovery and bio-remediation work on some selected contaminated land and water sites in the vicinity of blowout <i>i.e.</i>,</p>	<p>(Para 6ee and 6ff, Page 48 of the Counter Affidavit dated 26.07.2022)</p>

<p>BGN#5. Though a few sites in the affected area(s) have been remediated, the main area in and around the blowout site still awaits bioremediation. (Para 28(c) Page 24)</p>	<ul style="list-style-type: none"> ● From the blowout up till 10.08.2021, the blowout site was not properly handed over to OIL due to a variety of local factors and law-and-order situations and the same were beyond the control capacity and command of the official working with OIL. During the said 14 months, several attempts were made by OIL to get the incident site in control through peaceful means in order to commence the bio-remediation and restoration work of the plinth area. <i>(Para III (B) f & g Page no. 53-54 of the Counter Affidavit dated 26.07.2022)</i> ● Due to the aforementioned reasons, it was only on 10.08.2021 that OIL could collect its equipment and machinery at the Baghjan Well No.5 site and have the control and possession of the site. Hence, the bio-remediation work at the plinth of Baghjan Well No.5 site could commence only in the latter half of the year 2021. ● On 13.10.2021, Contract dated 13.10.2021 bearing no. 6116306 was executed between OIL and TERI <i>vide</i> which the services of TERI were further extended for a period of 01 (one) year for In-situ Bioremediation of oily sludge/oil contaminated soil/water of various production installations, fields and water bodies in Assam and Arunachal Pradesh fields. Thereafter, bioremediation work on the main blowout site plinth for an area of 69,833 square meters was undertaken by TERI. ● The Project started on 18.10.2021 and got completed on 14.03.2022. <i>(Page 312 Annexure R8 of the Counter Affidavit dated 26.07.2022).</i>
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		Graphical Representation of before-and-after of the bioremediated site is available at <i>Page 455 – 460 of Annexure R8 annexed with the Counter Affidavit dated 26.07.2022.</i>
7.	The area around the well has been roughly dressed up and fenced as on November 16, 2021. (Para 35(c), Page 27)	Clean and bio-remediated area in and around the blowout site as is evident from <i>Page 623 of the Restoration Report dated 06.05.2022 annexed at Annexure R31 of the Affidavit dated 09.05.2022.</i>
	Significant quantity of hazardous wastes like asbestos pieces were found lying in the area adjacent to the blowout site <u>which has recently been cordoned off.</u> (Para 35(d), Page 27)	All asbestos pieces from the incident site have been cleaned and no such thing appears to be lying in the area adjacent to the blowout site, which admittedly as per the Expert Committee has recently been cordoned off.
	Remediation sites (ongoing as well as completed) outside BGN#5 were without any sign board nor any enclosures to prevent harvest of possible contaminated biomass. People and cattle herds were moving around freely. Substantive grazing was also noticed. (Para 35(f), Page 27)	OIL has cordoned off the entire site and installed appropriate fencing and signboards. No cattle herds are grazing inside the blowout site as the site is completely guarded and cordoned off.
	To cordon off all future remediation sites by installing appropriate fencing and signboard (Para IV(b), Page 40)	<u>OIL has incurred an expenditure of INR 7,81,000/- (Rupees Seven Lakhs Eighty-One Thousand Only) for installation of fencing and signboards.</u>
	The four corners (or polygon points) of the completed remediation areas shall have a signage board measuring 1m by 03m indicating: BGN#5 blowout remediated area with the sub-area number, zone number and completion date together with the remediation identification number georeferenced. The delineation wooden posts must be strong enough to withstand long-term weather exposure effects. The signage board must be of metal with weather protection or coating or aluminium. (Para IV(f), Page 40)	Signboards as per the suggestions made by the Expert Committee have been installed at all the bioremediated sites. The zone-wise detail is mentioned herein below: (i) ZONE 1 – Total Area 25,000m ² ; Bio-Remediation date: 04.10.2020 (ii) ZONE 2 – Total Area 40,000m ² ; Bio-Remediation date: 04.10.2020 (iii) ZONE 3 – Total Area 35,000m ² ; Bio-Remediation date: 04.10.2020

		(iv) ZONE 4 – Total Area 60,000m ² ; Bio-Remediation date: 04.10.2020 HEAT ZONE – Total Area 60,000m ² ; Bio-Remediation date: 04.10.2020
8.	An appreciable quantity of Asbestos is laying unattended around BGN#5 area (Row 1, Column 3, Page 33)	As advised, the pieces of asbestos lying at the plinth of BGN#5 was cleared and the same was stored at the plinth itself in drums under a shed to restrict contamination of water from these pieces of asbestos. Proper signage was also installed as Hazardous materials in front of the shed.
9.	A final scanning of the area for any other underground redundant pipes needs to be carried out (Row 2, Column 3, Page 33)	Final scanning of the area has been done by OIL. Presently, no underground redundant pipe exists in the area.
10.	Debris removed partially, effluent pits to be characterized, remediated and backfilled with clean soil (Row 1, Column 3, Page 34)	As advised, restoration of BGN#5 plinth has started from 11.07.2022. This restoration job will include the following:
11.	Logs indicate an average contamination depth of 10 cm. The 20 soil samples were collected from an area of 12.56 km square. Considering the above information, an estimated 1.26 million cubic meter, of contaminated soil is pending remediation. Irrespective of sample results, OIL has to remediate a minimum area of 3.8 km square area of influence as defined by OIL. The volume of contaminated soil pending remediation considering the field log is approximately 0.38 million meters cube minus the previously remediated and ongoing remediation volumes. (Row 2, Column 3, Page 34)	(i) Demolishing of existing exposed pillow foundations of BGN#5 plinth and disposing the same. (ii) Removal of top soil (up to 30 cm depth) from plinth and disposing the same. (iii) Earth filling of the two (02) effluent pits including backfilling of plinth (30cm) with fresh soil as advised by PCBA. To make a footpath from entry gate to BGN#5 for visitors
12.	No progress on the underground ecosystem that may have been affected due to the fire. (Row 3, Column 3, Page 34)	After the completion of bio-remediation job, the test results of the soil samples reveals that the soil characteristic parameters are within the limits prescribed by statutory norms and normal

		soil characteristics have been restored, which is evident from the surrounding vegetation growth in the affected areas.
13.	Video surveillance system installed. (Row 1, Column 3, Page 35)	<u>Video surveillance system installed is continuing since 11.12.2021 till date at a cost of Rs. 2,01,000/- (Two Lacs only) plus GST per month payable by OIL to the external agency.</u>
14.	Enabling activities before remediation and restoration is ongoing. Materials and debris segregations and concrete, asphalt, piping, metals, concrete slabs, brick or word must be removed from the proposed remediation excavated material and stockpiled at selected area with review and approval by PCBA when directed by the PCBA the debris or solid waste must be transported to an approved area or location. <u>OIL must submit their proposed location for PCBA review and approval.</u> (Row 3, Column 3, Page 35)	As advised, restoration of BGN#5 plinth has started from 11.07.2022. This restoration job will include the following: (i) Demolishing of existing exposed pillow foundations of BGN#5 plinth and disposing the same. (ii) Removal of topsoil (up to 30 cm depth) from plinth and disposing the same. (iii) Earth filling of 2 nos. of effluent pits including backfilling of plinth(30cm) with fresh soil as advised by PCBA. (iv) To make a footpath from entry gate to BGN#5 for visitors OIL has a separate ' <i>Hazardous Material Storage Area</i> ' from where the waste material is transferred to the hazardous waste disposal site(s) managed and operated by PCBA.
15.	A grid-based sampling of the whole area of influence related to BGN#5 (gas blowout and related fire) into grids of 500 square meter each would have been a better approach to manage the area in a systematic manner given the visual variability of the contamination and considering the highly valuable ecosystem under the present scope of work. (Page 38)	Site was characterized based on visual and odour levels for contamination by digging site characterizing pits and collected the samples randomly. Approximately 150m to 170m around of well no. 5 (BGN#5), Baghjan was covered for sampling. The standard soil sampling using grid sampling and zone sampling was carried out. Considering the gas well incident#5, each field contains different soils with unique soil properties and crop characteristics, and therefore the representative zone

		has been selected for the random collection of soil and plant samples to assess the environmental impact. (Page 205 of Annexure R6 annexed with the Counter Affidavit dated 26.07.2022)
16.	OIL to establish a new Soil Remediation Group which is responsible for planning and execution of remediation and restoration projects in assets owned and/or operated by OIL (Para IV(a), Page 40)	OIL already has a Production Supply Services (PSS) Department along with the Health, Safety and Environment (HSE) Department which undertakes all such responsibilities of planning and execution of remediation and restoration projects in assets owned and/or operated by OIL.
17.	Characterization of the probable contaminated site following appropriate sampling strategy. OIL along with other responsible parties must first develop site specific and objective metrics for the most important and immediate environmental, social and governance problems, rather than produce catchall reports that are often inaccurate, unverifiable and, contradictory data. (Para IV(c), Page 40)	OIL has engaged credible organisations and institutes for carrying out the bio-remediation and restoration measures, and also for the purposes of assessing the environment and its impact. Such organisations have been identified by the Expert Committee at para 47 page 56 of the Final Report but the reports/ studies/ assessments made by such organisations has not been analysed by the Expert Committee in its Final Report.
18.	OIL to take measures to prevent vertical and lateral spread of contaminated materials, demonstrating no detrimental impact to adjacent potential receptors and/or dilution with clean material. OIL remediation area must meet the objectives that include measures to protect (i) Underlying clean soils (ii) Groundwater (iii) Surface water and (iv) Air. (Para IV(d) Page 40)	An average of 150m to 170m distance area around BGN Well No.5 has been bioremediated by engaging M/s TERI and found all parameters are within specified limits of the statutory norms. Further no drilling/ workover activity will be undertaken at the aforesaid site as the well has now been abandoned as per the Well Abandonment Policy followed by OIL. Therefore, pollution of underlying soil, groundwater, surface water and air in the future in and around the blowout site does not arise.
19.	Soil samples for the enabling works related to Baghjan site remediation must be analysed at an NABL accredited laboratory. (Para V(d) Page 42)	Total 37 soil and water samples were collected from the bioremediation site, which were analysed for solvent extractable total petroleum hydrocarbon (TPH) and other

		<p>necessary parameters by NABL accredited third party laboratory, namely, Noida Testing Laboratories bearing NABL Accreditation Certificate No.TC-6814. <u>Soil Sampling was done on 22.10.2021 and the Analysis Duration was between 26.10.2021 to 10.11.2021.</u></p> <p><i>(Pages 345 and 358 of Annexure R8 of the Counter Affidavit dated 26.07.2022)</i></p>
20.	<p>OIL to pursue a risk-based clean-up approach, engaging best available remediation technology to bring down the level of the contaminants in all contaminated mediums. (Para IV(f), Page 40)</p>	<p>Third-party bioremediation contractor, TERI was engaged by OIL who have carried out the cleaning and bioremediation activities in and around the site area.</p> <p><i>(Para III(B), Pages 52-57 of Counter Affidavit dated 26.07.2022)</i></p> <p><i>(For LOA refer Page 439, Annexure R17 of Affidavit dated 09.05.2022)</i></p>
21.	<p>The existing pits/effluents pits after being remediated need to be backfilled with clean soil and regraded and compacted to the original ground level.</p> <p>The site has pits closer to the well which are filled with brackish water, suggesting water contaminated with oil. (Para 35(e), Page 27)</p>	<p>Third-party bioremediation contractor, M/s TERI was engaged by OIL who have carried out the cleaning and bioremediation activities in and around the site area.</p> <p><i>(Para III(B), Pages 52-57 of Counter Affidavit dated 26.07.2022)</i></p> <p><i>(For LOA refer Page 439, Annexure R17 of Affidavit dated 09.05.2022)</i></p> <p>As advised, restoration of BGN#5 plinth has started vide MOU dated 21.07.2022 executed with PCBA. This restoration job will include the following:</p> <p>(v) Demolishing of existing exposed pillow foundations of BGN#5 plinth and disposing the same.</p>

		<p>(vi) Removal of topsoil (up to 30 cm depth) from plinth and disposing the same.</p> <p>(vii) Earth filling of 2 nos. of effluent pits including backfilling of plinth(30cm) with fresh soil as advised by PCBA.</p> <p>(viii) To make a footpath from entry gate to BGN#5 for visitors.</p>
22.	<p>Restoring the site using appropriate measures as per restoration plan along with joint monitoring of the sites by <u>CGWB (Central Ground Water Board)</u>, PCBA and District Administration (Para IV (i) Page 41)</p>	<p>Third-party bioremediation contractor, TERI was engaged by OIL who have carried out the cleaning and bioremediation activities in and around the site area.</p> <p><i>(Para III(B), Pages 52-57 of Counter Affidavit dated 26.07.2022)</i></p> <p><i>(For LOA refer Page 439, Annexure R17 of Affidavit dated 09.05.2022)</i></p> <p>As advised, restoration of BGN#5 plinth has started vide MOU dated 21.07.2022 executed with PCBA. This restoration job will include the following:</p> <p>(ix) Demolishing of existing exposed pillow foundations of BGN#5 plinth and disposing the same.</p> <p>(x) Removal of topsoil (up to 30 cm depth) from plinth and disposing the same.</p> <p>(xi) Earth filling of 2 nos. of effluent pits including backfilling of plinth(30cm) with fresh soil as advised by PCBA.</p> <p>(xii) To make a footpath from entry gate to BGN#5 for visitors.</p>

23.	<p>Conducting public awareness and training regarding risk reduction related to oil and gas exploration. <u>OIL must install a video surveillance system around the remediation areas consisting of a number of video cameras with full view of the areas. The cameras shall be able to operate 365/24/7 and provide a reliable quality picture during night time and are required to have zooming capability and enough memory to store data for a period of atleast two (02) months.</u> (Para IV (j) Page 41)</p>	<p>OIL has contributed towards the development of a handloom cluster (100 JLGs with five women members in each group), mobile health camps, and placement linked skill training to youths.</p> <p><u>OIL has incurred an amount of INR 2,77,76,000/- (Rupees Two Crores Seventy-Seven Lakhs Seventy-Six Thousand Only) on training and public awareness.</u></p> <p><u>Video surveillance system installed is continuing since 11.12.2021 till date at a cost of Rs. 2,01,000/- (Two Lacs only) plus GST per month payable by OIL to the external agency.</u></p>
24.	<p>Maintaining greenery at the site using native species, after satisfactory achievement of site-specific Remediation Target Criteria (RTC) assessed <i>via</i> post remediation sampling strategy. <u>Revegetation may be carried out in a minimum of 4 ha using naïve species.</u> (Para IV(I) Page 41)</p>	<p><i>Para II (L), Pages 42-46 of Counter Affidavit</i> dated 26.07.2022 for Assessment of Environmental Quality of Soil and Vegetation Final Report by TERI <i>vide</i> Report dated 21.02.2022 annexed at <i>Annexure R6 of the Counter Affidavit dated 26.07.2022.</i></p> <p>Report dated 21.02.2022 on Assessment of environmental quality of soil and vegetation in the vicinity of Baghjan well no. 5, Assam was submitted by TERI which states that no contamination has been found in the vegetation/plant samples. <i>(Para III(D), Page 55 of Counter Affidavit dated 26.07.2022</i> for Afforestation measures taken by OIL in the plinth area.</p>
25.		<p>OIL has managed to remove most of the construction debris, piping and related materials in accordance with the extant</p>

		Hazardous Waste Management Rules from the Baghjan Well No.5 site.
26.	The concentration of PAHs in water samples and fish tissues was found to be significantly higher than in previous studies conducted in India and elsewhere around the world. (Para 49 Page 57)	<p><i>Para II (L), Pages 42-46 of Counter Affidavit dated 26.07.2022</i> for Assessment of Environmental Quality of Soil and Vegetation Final Report by TERI <i>vide</i> Report dated 21.02.2022 annexed at <i>Annexure R6 of the Counter Affidavit dated 26.07.2022.</i></p> <p>As per the TERI Report dated 21.02.2022,</p> <p>(i) For soil sample quality analysis, the PAH level was below detectable limit.</p> <p>(ii) For water sample quality analysis, the oil & grease, PAH and heavy metals concentration were below the detection limit in all the 13 samples.</p> <p>(iii) For the vegetation plant / fish sample quality analysis, the analysis result shows that there is no accumulation of PAH, BTEX and tested heavy metals like cadmium, lead, mercury, nickel and hexavalent chromium.</p> <p>For the plant biomass, there is no accumulation of TPH and total PAH in the analysed plant biomass.</p>
27.		<p><i>Para II (B), Pages 31-32 of Counter Affidavit</i> dated 26.07.2022 for Assessment of Air Quality and Noise Levels in the vicinity of Baghjan Well No.5 by TERI <i>vide</i> Report dated 05.08.2020.</p> <p>As per the noise levels recorded for the period 19.06.2020 to 03.08.2020, the following observations were made by TERI;</p> <p>-The equivalent sound pressure levels (Leq) measured at 0.5 km from the well are exceeding the industrial noise level daytime</p>

		<p>standard of 75 dB (A) in all the monitored days except for few days.</p> <p>-However, at other points at a distance of 1 km, 1.5 km and 2 km from the fire point, the levels are within the daytime industrial noise level standard of 75dBA.</p>
28.	<p>OMCR assessed the impact of vegetation using drones, and reported plant leaves soaked in condensate, several tea plants were seen with dead leaves. ... The soil was found to be contaminated with condensate.</p> <p>Eighty-seven species of fishes were reported from Maguri-Motapung Beels which were reduced to 25 species with widespread deaths of fishes. ...Fish species richness declined by 71% and abundance by 81%.</p> <p>The bird richness declined by 59% in grassland and 85% in wetland (WII).</p> <p>(Paras 50, 52 and 53, Page 58)</p>	<p><i>Reliance in this regard can be placed upon Page 545-546 (internal page nos. 46 and 47) of the Two Seasons IUCN Report annexed at Annexure R27 of the Affidavit dated 09.05.2022.</i></p> <p><i>Emphasis is supplied on Page Nos. 641 (Bird) and 646 (Fish) of the Restoration Report dated 06.05.2022 annexed at Annexure R31 of the Affidavit dated 09.05.2022.</i></p>
29.	<p>The Committee was not made aware of any study, dataset or monitoring of different components of wetland water, sediments, and vegetation which indicated otherwise. (Para 55, Page 59)</p>	<ul style="list-style-type: none"> ● TERI was engaged by OIL vide contract no. 6116306 dated 18.10.2021 who had undertaken all the measures for bio-remediating and restoring the plinth area of the Baghjan Well No.5 blowout site. ● The Project started on 18.10.2021 and got completed on 14.03.2022. <i>(Page 312 Annexure R8 of the Counter Affidavit dated 26.07.2022).</i> <p>Graphical Representation of before-and-after of the bioremediated site is available at <i>Page 455 – 460 of Annexure R8 annexed with the Counter Affidavit dated 26.07.2022.</i></p>

30.	As a matter of fact, no systematic tracing of the pollutants released from the accident was done within the wetland, not an attempt made to understand their ultimate fate. (Para 55, Page 59)	In view of all such bio-remediation efforts and restoration measures adopted and executed by OIL, which has also been observed by the Expert Committee in its <i>Footnote No.50 at Page 84 of the Final Report dated 31.12.2021</i> , this is an unfounded and unsubstantiated allegation imputed by the Expert Committee against OIL.
31.	OIL has no protocol in place to address oil spills in wetlands, terrestrial system and ecologically sensitive areas such as DSNP. <u>This is a critical lapse given the high intensity of oil and gas operations around the MMW and the DSNP. The SoP examined by the Committee were of generic nature, highly insufficient to address the impacts on sensitive ecosystems, in events such as the Baghjan accident.</u> (Para 71, Page 63)	OIL already had well-articulated, practical approach synthesised, 1044 Standard Operating Procedures which have also been reviewed and revised by OIL post the blowout incident.
32.	The Committee has examined the Terms of Reference of the studies/assessments commissioned by OIL India for redressing the environmental damages. Unfortunately, the studies are not strategically designed, and would not align with the pressing needs of the ecological restoration and ensuring that the health of ecosystems is maintained in the long run, and the institutional and governance arrangements required for this purpose and put in place. <u>The Committee is also of the opinion that merely creating species checklists would not be adequate, unless these are backed by a thorough understanding of the ecosystem components and processes which are required to sustain the species richness, the risks to such conditions and the risk reduction pathways.</u> (Para 72, Page 63)	With the approach adopted by the Expert Committee and the extensive efforts made by OIL in restoring and remediating the environment of the blowout incident, this allegation seems to be based upon unfounded allegation, which is also in contradiction to other observations made by the Expert Committee <i>qua</i> the assessment studies conducted by OIL.

COSTS IMPOSED BY THE EXPERT COMMITTEE IN REPORT DATED 31.12.2021 (PAGE 84) ALONG WITH COSTS INCURRED BY OIL WITH DETAILS

S. No.	Components and Activities	Rate	Unit	Physical	Amount (in Rs. in Crore)	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Cost incurred by OIL
1.	ECOLOGICAL RESTORATION OF ACCIDENT SITE				138.55	71.50	40.17	26.67	0.08	0.08	0.02	0.02	0.02	0.02	-	INR 14,65,83,280 (1.1 + 1.2 + 1.3 + 1.4) This cost is only with respect to the cost incurred qua third parties engaged for restoration activities. The cost of the internal resources deployed by OIL India has not been included in this amount.
1.1 Enabling Works																INR 3,13,48,280 (Total of Point 1.1)
(a)	Site Characterization (Test pitting	28	1000 m ²	1,25,60,000	0.07	0.07										INR 33,81,818 vide LOA dated 16.09.2021 by TERI for Assessment of environmental quality of

	and Logging) in the 2 km radius area of influence or 12.56 sq. km.														soil vegetation vide TERI Report dated 21.02.2022. A. At Internal Page 15 and 16 of the TERI Report dated 21.02.2022 and Pages 204 and 205 of Annexure R6 the Counter Affidavit dated 26.07.2022. B. At Internal Page 23 of the TERI Bioremediation Report for 4 zones and Page 263 of Annexure R7 the Counter Affidavit dated 26.07.2022. C. At Internal Page 12 of the TERI Bioremediation Report for Heat Zone (accident site / plinth area) and Page 321 of Annexure R8 the Counter Affidavit dated 26.07.2022.
(b)	Site Remediation Strategy development, bench-scale, field trials and actual remediation implementation including land lease	1,050	m ³	12,56,000	131.88	65.94	39.56	26.38							A. INR 2,22,41,820 vide TERI bearing contract no. 6114478 from 06.06.2020 to 06.12.2020 for bio-remediation of the 4 zones (Annexure R7 at Page 251 of the Counter Affidavit) B. INR 15,82,142 vide TERI bearing contract no. 6116306 from 18.10.2021 to 14.03.2022 for the heat zone i.e., the plinth area (accident site) (Annexure R8 at Page 320 of the Counter Affidavit) A + B = INR 2,38,23,962

	monitoring well installation																		
	1.2 Cutting and Disposal of Trees / tea bushes / bamboo etc. in and around BGN#5				2.16														
DETAILS OF CIVIL MAINTENANCE																			
Particulars																	Total (FY20-21) (in INR, in Lakhs)		
Construction of Kill Pump area																	324.80		
Construction of water reservoir																	511.73		
Cutting and disposal of burnt trees / tea bushes / bamboo etc. in and around BGN#5																	74.68		
Cleaning Services of Oil Spillage from Roof, Wall, Trees, Ground surface, etc.																	5.80		
Oil pickup, carriage, Transportation, Storage, etc.																	6.20		
Service of boat for oil pickup & manpower, etc.																	5.40		

	remediated / clean earth																		
(d)	Dewatering and earth filling of water reservoir			Lumps um	0.40	0.40													
(e)	Miscellaneous expenditure for toilet, sheds, security huts, etc.			Lumps um	0.53	0.53													
1.3 Process Documentation					0.20														
(a)	Video surveillance in all remediation sites			Lumps um	0.10	0.05	0.05												<u>Video surveillance system installed is continuing since 11.12.2021 till date at a cost of Rs. 2,01,000/- (Two Lacs only) plus GST per month payable by OIL to the external agency.</u>
(b)	Clean-up reports to responsible parties			Lumps um	0.10	0.10													
1.4 Stakeholder Engagement					0.30														

(a)	Workshop with public and agencies on restoration progress	50,000	Meeting/ Workshop	60	0.30	0.06	0.06	0.06	0.06	0.06							
2.	ECOLOGICAL RESTORATION OF DSBR				432.25	106.90	131.91	34.39	22.20	21.80	21.23	22.88	22.58	23.30	25.06	This cost is to be shared between OIL and Government of Assam, as per the recommendation of the Expert Committee. The Expert Committee has directed OIL and Government of Assam to share the costs under this head. However, as per reports available there is no cost to be incurred in the said region, for reasons listed hereunder against each head.	
2.1.	Baseline studies (toxicology)				10.00	6.00	4.00										Not the outcome of blowout and is the responsibility of the State.
2.2.	Contaminant monitoring				5.50	1.10	1.10	1.10	1.10	1.10							The environmental assessment and monitoring study by TERI was focused to study the severity of pollutants release in and around vicinity area of blowout incident site including Dibru Saikhowa National Park and Maguri-Motapung Wetland. [Annexure R6 at page 189 of the Counter Affidavit; Assessment Report by TERI dated 21.02.2022].

2.3.	Eco Restoration Committee				0.50	0.10	0.10	0.10	0.10	0.10						Responsibility of the State.
2.4.	Website				0.70	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	OIL has formulated a plan of updating their website with the recent restoration of the area. The said attempt was not made till date as the matter was <i>sub-judice</i> . State website is the responsibility of the State.
2.5.	Management Planning and SOPs				10.00	5.00	4.00	1.00								Details below:
(a)	Dibru Saikhowa National Park				2.50	1.50	1.00									Since this area belongs to the State, therefore OIL cannot make any SOPs or Management Panning in this regard.
(b)	Maguri-Motapung wetlands				2.00	1.00	1.00									Since this area belongs to the State, therefore OIL cannot make any SOPs or Management Panning in this regard.
(c)	Eastern Brahmaputra Landscape				5.00	2.00	2.00	1.00								Since this area belongs to the State, therefore OIL cannot make any SOPs or Management Panning in this regard.
(d)	Direct Disaster Management				0.25	0.25										Since this aspect concerns the State, therefore OIL cannot make any SOPs or Management Panning in this regard.

	Planning (Upgradation)																
(e)	Oil spill SoP Drafting				0.25	0.25											OIL has maintained internal SOPs and after the blowout revised more than 1000 SOPs.
2.6.	Management of DSBR (including surveillance)				110.77	20.25	13.11	9.13	8.66	8.97	9.29	9.63	9.99	10.36	10.76		OIL has ensured that Video surveillance system installed is continuing since 11.12.2021 till date at a cost of Rs. 2,01,000/- (Two Lacs only) plus GST per month payable by OIL to the external agency. Since this area belongs to the State, therefore OIL cannot take steps in this regard.
2.6.1.	Surveillance				28.30	2.25	2.36	2.48	2.60	2.73	2.87	3.02	3.17	3.32	3.49		Since this area belongs to the State, therefore OIL cannot take steps in this regard.
(a)	Departmental Surveillance				25.16	2.00	2.10	2.21	2.32	2.43	2.55	2.68	2.81	2.95	3.10		Since this area belongs to the State, therefore OIL cannot take steps in this regard.
(b)	Community Surveillance				3.14	0.25	0.26	0.28	0.29	0.30	0.32	0.34	0.35	0.37	0.39		Since this area belongs to the State, therefore OIL cannot take steps in this regard.
2.6.2.	Notification of MMW under Wetland Rules, 2017				0.25	0.25											Since this aspect concerns the State, therefore OIL cannot take steps in this regard.

2.6.3.	Management of DSNP				56.62	15.25	8.25	4.15	3.56	3.74	3.92	4.12	4.32	4.54	4.77	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(a)	Boundary delineation and demarcation				10.00	5.00	5.00									Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(b)	Management of invasives				3.76	1.00	0.25	0.26	0.28	0.29	0.30	0.32	0.34	0.35	0.37	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(c)	Maintenance of roads and channels				3.76	1.00	0.25	0.26	0.28	0.29	0.30	0.32	0.34	0.35	0.37	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(d)	Livestock disease surveillance and vaccination				4.76	2.00	0.25	0.26	0.28	0.29	0.30	0.32	0.34	0.35	0.37	Animal Husbandry and Veterinary Officer, Tinsukia, Government of Assam, no unnatural diseases had been detected or reported from the area amongst livestock and poultry apart from certain seasonable diseases viz. works infestation, etc. (Ref. Annexure R 24 at page 452 of the Affidavit dated 09.05.2022 filed by Oil)
(e)	Species augmentation and reintroduction (need based)				27.05	5.00	2.00	2.10	2.21	2.32	2.43	2.55	2.68	2.81	2.95	As per the IUCN Report – Annexure R 27 of the Affidavit dated 09.05.2022; Ref. in Counter Affidavit dated 27.07.2022 at page 47 - Study Time by IUCN – August 2021 to December 2021

																As per the IUCN Report – Annexure R 27 of the Affidavit dated 09.05.2022; at page 522 - - Occurrence of Hoolock Gibbons in village homestead plantations / woodlands were found. Further, for this aspect baseline data is essential to understand the number of species to be reintroduced.
(f)	Information, education and communication activities				3.76	1.00	0.25	0.26	0.28	0.29	0.30	0.32	0.34	0.35	0.37	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(g)	Tourism Promotion				3.54	0.25	0.25	1.00	0.25	0.26	0.28	0.29	0.30	0.32	0.34	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
2.6.4.	Management of MMW				25.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	Details below:
(a)	Water Management				2.50	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	Ref. TERI Report dated 21.02.2022 as Annexure R6 filed with Counter Affidavit dated 27.07.2022; page 227]

																As per the IUCN Report – Annexure R 27 of the Affidavit dated 09.05.2022; Page 525 to 526 – <ul style="list-style-type: none"> - 19 species of fish were reported from MMW and Dibru River. - Wallago Attu which is categorised as “vulnerable” in IUCN Red List was also reported. - Grass Carp, an exotic species was also found in fish-catch of the Beel.
(d)	Communication, Education and Awareness				2.50	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(e)	Community based tourism development				10.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
2.7.	Ecosystem Inventory, Assessment and Monitoring System															Since this aspect concerns the State, therefore OIL cannot take steps in this regard.

2.7.1	Establishment of Monitoring hub														Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(a)	Infrastructure set up														Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
(b)	Staffing														Since this aspect concerns the State, therefore OIL cannot take steps in this regard
(c)	Training				4.00	1.00		1.00			1.00			1.00	Since this aspect concerns the State, therefore OIL cannot take steps in this regard
(d)	Setting up a database management system and data management proposals				6.50	2.00	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	Since this aspect concerns the State, therefore OIL cannot take steps in this regard
2.7.2.	Assessment Studies				17.00	10.20	6.80								Details as under:
(a)	Biodiversity assessment species, habitat				5.00	3.00	2.00								Assessment by IUCN [Ref. Annexure R 27 of the Affidavit dated 09.05.2022]

(b)	Hydrological Assessments				5.00	3.00	2.00									<p>Ref. TERI Report dated 21.02.2022 as Annexure R6 filed with Counter Affidavit dated 27.07.2022; page 227]</p> <ul style="list-style-type: none"> - After water sampling done, the water of mostly all regions were found clear. - The existence of iron odour in water is a concern of the entire State of Assam and has no relation with the blowout. <p>Since the aspect of further management concerns the State, therefore OIL cannot take steps in this regard.</p>
(c)	Fisheries Assessments				5.00	3.00	2.00								<p>As per letter dated 15.11.2021 of the Office of the District Fishery Development Officer, Tinsukia, Government of Assam, it was observed that during the past 1 year (15.11.2020 to 15.11.2021) :</p> <ul style="list-style-type: none"> - There was no sign of adverse impact and deterioration of water quality due to the said blowout. - No reports received of any extinction of fish species during the above said period. - No unnatural death of fish species was detected or reported from the area in the said period. 	

(c)	Monitoring, reporting and review				18.00		2.00	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	Since this aspect concerns the State, therefore OIL cannot take steps in this regard.
3.	ADDRESSING LIVELIHOOD AND SOCIOECONOMIC ASPECTS				625	152.50	152.50	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	40.00	(i) Compensation Pursuant to NGT Order INR 69,85,00,000 (ii) Compensation Pursuant to DC, Tinsukia Order INR 32,89,05,000 (iii) Food & Relief Camps expenses INR 41,59,84,000 (i) + (ii) + (iii) = INR 1,44,33,89,000
3.1.	Insurance																Details below:
(a)	Health Insurance (Rs. 30 lakh cover for 10 years)	15,000	per person	15,000	375.00	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	37.50	Oil India provided and continues to provide free of cost health facility and care to all affected families. This includes various health schemes as well.
(b)	Livestock insurance (for 10 years)	5,000	Per family	5,000	25.00	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	2.50	As per the report of the Office of the District Animal Husbandry and Veterinary Officer, Tinsukia, Government of Assam, no unnatural diseases had been detected or reported from the area amongst livestock and poultry apart from certain seasonable diseases viz. works infestation, etc. (Ref. Annexure R 24 at page 452 of the Affidavit dated 09.05.2022 filed by Oil)

3.2.	Compensation for lost fishing days (if required)	2,50,000	Per family	2,000	50.00	25.00	25.00									Combined compensation was paid to affected families which included all aspects.
3.3.	Compensation for lost agriculture (if required)	2,50,000	Per family	5,000	125.00	62.50	62.50									Combined compensation was paid to affected families which included all aspects.
3.4.	Compensation for lost days (if required)	2,50,000	Per family	2,000	50.00	25.00	25.00									Combined compensation was paid to affected families which included all aspects.
					1195.57									62.59	65.06	