

**STANDING COMMITTEE ON  
PETROLEUM & NATURAL GAS  
(2022-23)**

**SEVENTEENTH LOK SABHA**

**MINISTRY OF PETROLEUM & NATURAL GAS**

**[SAFETY AND SECURITY OF OIL INSTALLATIONS OF PUBLIC  
SECTOR OIL COMPANIES-WITH SPECIFIC REFERENCE  
TO BAGHJAN BLOW-OUT INCIDENT]**

**NINETEENTH REPORT**



**LOK SABHA SECRETARIAT  
NEW DELHI**

*March, 2023 / \_\_\_\_, 1944 (Saka)*

CP&NG NO.

# **NINETEENTH REPORT**

**STANDING COMMITTEE ON  
PETROLEUM & NATURAL GAS  
(2022-23)**

**(SEVENTEENTH LOK SABHA)**

**MINISTRY OF PETROLEUM & NATURAL GAS**

**[SAFETY AND SECURITY OF OIL INSTALLATIONS  
OF PUBLIC SECTOR OIL COMPANIES-WITH SPECIFIC  
REFERENCE TO BAGHJAN BLOW-OUT INCIDENT]**

*Presented to Lok Sabha on 23.03.2023*

*Laid in Rajya Sabha on 23.03.2023*



**LOK SABHA SECRETARIAT  
NEW DELHI**

*16 March, 2023 /25 Phalguna, 1944 (Saka)*

<b>CONTENTS</b>		
	COMPOSITION OF THE COMMITTEE (2022-23) .....	(iii)
	INTRODUCTION .....	(iv)
<b>REPORT</b>		
<b>PART - I</b>		
<b>I</b>	<b>INTRODUCTION</b>	1
<b>II</b>	<b>AGENCIES REGULATING PETROLEUM SECTOR</b>	1
<b>III</b>	<b>OIL INDUSTRY SAFETY DIRECTORATE (OISD)</b>	1
<b>IV</b>	<b>HEALTH, SAFETY, SECURITY AND ENVIRONMENTAL (HSSE) MANAGEMENT SYSTEM IN OIL INDIA LIMITED (OIL)</b>	2
<b>V</b>	<b>BAGHJAN OIL FIELD</b>	2
<b>VI</b>	<b>BAGHJAN WELL BLOWOUT: (BACKGROUND NOTE PAGE 1 (JULY 20, 2022))</b>	3
<b>VII</b>	<b>LAPSES COMMITTED BY OPERATOR AND CONTRACTOR</b>	7
<b>VIII</b>	<b>ROLE OF INSTALLATION MANAGER</b>	9
<b>IX</b>	<b>DELAY IN AWARD OF CONTRACT</b>	11
<b>X</b>	<b>TRAINING OF PERSONNEL</b>	11
<b>XI</b>	<b>ENQUIRIES INTO THE INCIDENT</b>	15
<b>XII</b>	<b>DISCIPLINARY ACTION AGAINST OFFICIALS OF OIL</b>	16
<b>XIII</b>	<b>NEAR MISS REPORTING</b>	17
<b>XIV</b>	<b>ANALYSIS/INVESTIGATION OF ACCIDENT/DANGEROUS OCCURRENCE</b>	18
<b>XV</b>	<b>HSE PERFORMANCE</b>	18
<b>XVI</b>	<b>RELIEF AND REHABILITATION</b>	20
<b>XVII</b>	<b>MONETARY COMPENSATION TO AFFECTED FAMILIES</b>	20
<b>XVIII</b>	<b>NGT DIRECTIONS ABOUT VIOLATIONS AND NON-COMPLIANCE BY OIL</b>	23
<b>XIX</b>	<b>ENVIRONMENTAL IMPACT ASSESSMENT</b>	24
<b>XX</b>	<b>TERI (THE ENERGY AND RESOURCES INSTITUTE) REPORT</b>	25
<b>XXI</b>	<b>DIRECTIONS OF NATIONAL GREEN TRIBUNAL (NGT)</b>	26
<b>XXII</b>	<b>RESTORATION OF ENVIRONMENT NEAR BLOWOUT SITE</b>	28
<b>XXIII</b>	<b>SECURITY MANAGEMENT SYSTEM</b>	29
<b>XXIV</b>	<b>UPGRADATION OF INFRASTRUCTURE</b>	30
<b>XXV</b>	<b>UPGRADATION OF AIRPORTS</b>	32
<b>XXVI</b>	<b>POST BLOWOUT TRAINING MEASURES</b>	33
<b>XXVII</b>	<b>SAFETY TRAINING TO LOCAL COMMUNITY</b>	35
<b>XXVIII</b>	<b>SHIFTING OF OIL CORPORATE OFFICE</b>	36
<b>XXIX</b>	<b>INSURANCE FOR OIL FIELDS</b>	37
<b>PART – II</b>		
<b>Observations / Recommendations of the Committee .....</b>		39
<b>ANNEXURES</b>		
<b>ANNEXURE I</b>	Minutes of the second sitting of the Committee (2020-21) held on 20.10.2020	

ANNEXURE II	Minutes of the Twentieth sitting of the Committee (2020-21) held on 06.08.2021	
ANNEXURE III	Minutes of the eighteenth sitting of the Committee (2021-22) held on 20.07.2022	
ANNEXURE IV	Minutes of the Tenth sitting of the Committee (2022-23) held on 16.03.2023	

(iii)

**COMPOSITION OF THE STANDING COMMITTEE ON PETROLEUM  
& NATURAL GAS (2022-23)**

Sl. No.	Name of Members
<b>LOK SABHA</b>	
<b>Shri Ramesh Bidhuri - Chairperson</b>	
2	Dr. Ramesh Chand Bind
3	Shri Pradyut Bordoloi
4	Shri Girish Chandra
5	Smt. Chinta Anuradha
6	Shri Dilip Saikia
7	Shri Topon Kumar Gogoi
8	Shri Naranbhai Bhikhabhai Kachhadiya
9	Dr. Kalanidhi Veeraswamy
10	Shri Santosh Kumar
11	Shri Rodmal Nagar
12	Shri Mitesh Rameshbhai Patel
13	Shri Unmesh Bhaiyyasaheb Patil
14	Shri M.K. Raghavan
15	Shri Chandra Sekhar Sahu
16	Shri Gajanan Chandrakant Kirtikar
17	Dr. Bharatiben Dhirubhai Shiyal
18	Shri Janardan Singh Sigrival
19	Shri Lallu Singh
20	Shri Vinod Kumar Sonkar
21	Shri Ajay Tamta
<b>RAJYA SABHA</b>	
22	Shri Shaktisinh Gohil
23	Smt. Kanta Kardam
24	Shri Mithlesh Kumar
25	Shri Pabitra Margherita
26	Shri Rambhai Harjibhai Mokariya
27	Shri Surendra Singh Nagar
28	Dr. Sasmit Patra
29	Shri Subhas Chandra Bose Pilli
30	Dr. V. Sivadasan
31	Shri Ravichandra Vaddiraju

**SECRETARIAT**

1	Shri Y.M. Kandpal	Joint Secretary
2	Shri H. Ram Prakash	Director
3	Shri Brajesh Kumar Singh	Deputy Secretary

(iv)

## **INTRODUCTION**

I, the Chairperson, Standing Committee on Petroleum & Natural Gas having been authorised by the Committee, to submit the Report on their behalf, present this Nineteenth Report on the subject 'Safety and Security of Oil Installations of Public Sector Oil Companies with specific reference to Baghjan Blow-Out incident'.

2. The Committee took briefings of the representatives of the Ministry of Petroleum & Natural Gas/Oil PSUs in connection with examination of the subject at their sittings held on 20.10.2020, 06.08.2021 & 20.07.2022.

3. The Report was considered and adopted by the Standing Committee on Petroleum and Natural Gas on 16.03.2023.

4. The Committee wish to express their thanks to the representatives of the Ministry of Petroleum and Natural Gas/PSUs and Oil PSUs for placing their views before them and furnishing the information desired in connection with examination of the subject.

5. The Committee also place on record their appreciation for the valuable assistance rendered to them by the officials of the Lok Sabha Secretariat attached to the Committee.

**New Delhi;**  
**March, 2023**  
**— — — —, 1944 (Saka)**

**RAMESH BIDHURI,**  
***Chairperson,***  
***Standing Committee on***  
***Petroleum & Natural Gas.***

## REPORT

### PART I

#### **Introduction**

1.1 The Oil & Natural Gas Industry handles highly inflammable hydro-carbons in all physical forms – solid, liquid & gas – and operates processes under high temperature and pressure with presence of Oxygen (air) and many a times active sources of ignition. Therefore, the safety in Petroleum and Natural Gas Industry is of paramount importance. It is not only critical for the operators' manpower and assets but also, by the very nature of possible adverse outcomes of safety system failure, for society at large - as such adverse outcomes, may spill over the boundary of the industry establishments. The Industry establishments, at their levels are aware of the risks involved and have safety system in place to obviate such accidents.

1.2 A major Well blowout had occurred on 27<sup>th</sup> May, 2020 at Baghjan oil well- 5 in Tinsukia district of Assam causing release of high pressure natural gas creating panic to the nearby residents. Accordingly, the Committee decided to examine "Safety and Security of Oil installations of Public Sector Oil Companies with specific reference to Baghjan Blowout incident to identify gaps in the safety and security frame work of the OIL India Ltd. and its HSSE policies.

#### **AGENCIES REGULATING PETROLEUM SECTOR**

##### **Directorate General of Mines Safety (DGMS)**

1.3 Safety in onshore is being regulated by Directorate General of Mines Safety (under Ministry of Labour) through the Oil Mines Regulations, 2017 framed under the provisions of the Mines Act, 1952. These regulations cover entire gamut of operations in oil mines right from drilling to oil / gas production including their storage and transportation by pipelines with chapters on protection against fires and on General Safety Provisions. The focus of the Mines Act, 1952 is on regulating mining operations with due emphasis on health and safety of workmen. The Act extends up to territorial waters (up to 12 nautical miles). In the Mines Act, 1952, definition of minerals includes mineral oils (which in turn include natural gas and petroleum). Thus, oil & gas industry also comes under the ambit of this Act.

##### **Oil Industry Safety Directorate (OISD)**

1.4 OISD (Oil Industry Safety Directorate) is a technical Directorate under the Ministry of Petroleum and Natural Gas. It was established in 1986. It formulates and coordinates the implementation of a series of self-regulatory measures aimed at enhancing the safety in the Oil & Gas industry in India. The major activities of OISD include development of standards and codes that would be suitable for the conditions prevailing in India, conducting External Safety Audits (ESA) regularly to check compliance *w.r.t.* implementation of safety standards, acting as a competent authority to exercise powers and functions as stipulated in Petroleum and Natural Gas (Safety in Offshore operations) Rules, 2008 to enhance safety in offshore regulations, conferment of safety awards, organizing Training Programmes / Workshops, dissemination of information on safety enhancement etc. Till date, OISD has developed 124 standards.

## **Health, Safety, Security and Environmental (HSSE) Management System in OIL India Limited (OIL)**

1.5 OIL India Limited (OIL) carries out its operations by adopting a Health, Safety, Security and Environmental (HSSE) Management System, which continually evolves and responds to the changing needs and emerging operational requirements. OIL accords top priority to HSSE aspects in its operational areas and “Safety First” is practiced as a culture in OIL. OIL is proactive to achieve the goal of ‘zero accident and no harm to Man, Machine and Material’. Continual enhancement of HSSE standards in all the activities is one of the prime corporate objectives of the organization, which is aptly reflected in OIL’s one of the vision statements “OIL is fully committed to Health, Safety & Environment”.

### **Baghjan Oil Field**

1.6 The Baghjan field is located in Doomdooma Revenue Circle of the district of Tinsukia in Upper Assam, about 61 Km from OIL Head office at Duliajan via Rajgarh Road and NH-15 and/or via Makum Bypass, which is about 76 kms.

1.7 OIL discovered this field in 2003 after drilling its first exploratory Well Baghjan-1. So far 10 exploratory wells have been drilled, and target depth of wells are around 3800 to 4300 Mtr. The area of the Baghjan field is about 20 Sq. Km. The estimated Oil 2P Reserve is about 13.59 MM3 and estimated Recoverable Reserve is about 2.785 MM3. Non-associated estimated 2P Gas Reserve in place is 13.84 BCM and Recoverable Gas estimated as 25.60 BCM. Associated 2P gas Reserve in place estimated is 13.84 BCM and Recoverable Gas estimated as 5.99 BCM. Reservoir Pressure varies from 402 Kg/ Sq. Cm to 429.5 Kg/Sq. Cm i.e. almost Hydrostatic Pressure. There are mainly three major Hydrocarbon bearing i.e. Oil & Gas horizons found in the Baghjan Field namely;

- (i) LANGPAR, 3870 Mtr, Original Formation Pressure 422kg/cm<sup>2</sup>
- (ii) LK+Th, SG III+IV and SG I+II, 3781 to 3729 Mtr, Original Reservoir Pressure Hydrostatic +10%.
- (iii) NARPUH, 3673 Mtr, Original estimated Reservoir Pressure Hydrostatic +10%.

All three Zones lie in the depth range of 3630 to 3900 Mtr TVD. The age of multiple sand reserves discovered are of Palaeocene – Lower Eocene Age.

1.8 The Baghjan Field development started from December 2005 after successful completion of Well Baghjan-2. Total 16 Development wells were successfully drilled and completed. Total wells in this field are 26 Nos (10 Exploratory and 16 Development). Type of wells are (1) Vertical -1No (Baghjan -1), (2) J bend 8 Nos, (3) S profile - 17 Nos. No Horizontal or ERD wells have been drilled till date. But there is a plan to drill ERD wells to target the prospective sand lying below the DSNP, which is about 1 Km away from the main Baghjan field.

1.9 Commercial Oil production started in December, 2005 after successful completion of Well Baghjan-2 in Bottom most sand i.e. LANGPAR sand. The Production



of the field gradually increased and reached a peak production of about 910 M3/Day in March 2012. Thereafter, the Oil production showed a declining trend and reached a level of 630 m3/Day in September 2016 with increased water cut. However, after drilling of few more development wells, production of Oil increased to level of 1000 M3/Day in November 2017. The initial Reservoir Pressure was 422 Kg/Cm<sup>2</sup> at a depth of 3647 Mtr which was 58 Kg/cm<sup>2</sup> above Hydrostatic pressure as recorded in Baghjan Well-1 in April 2003. The current Reservoir pressure is around 411.2 Kg/Cm<sup>2</sup> at a depth of 3977 Mtr recorded in May 2020. Present Production of the Baghjan field is Oil + Condensate 950 M3/Day, Water 284 M3/day and 1.3 MMSCMD Gas. Estimated Loss of Production due to blow out at Well Baghjan-5 is 90 to 95000 M3 of Gas and 10 to 15 M3 of Condensate per Day.

1.10 Well Baghjan-5 was spudded on 20.11.2006 and successful drilling to target depth of 3904 completed on 12.03.2007. This is a 'S' profile deviated well and 4 stage casing Policy adopted in this well.

1.11 The well was actually put on production from September 2015 and cumulative production up to March 2020 was 191.83 MMSCM of Gas and 44180 M3 of Condensate. Recently, it was observed that the well was producing Gas from Gas Cap of BGN001 block which may lead to faster reservoir pressure drop resulting in lesser recovery. So, it was decided to permanently plug back this Zone i.e. LANGPAR SAND and to recomplete the well in next upper sand called LK+Th sand at depth of 3760 Mt.

### **Baghjan Well Blowout:**

1.12 A major blowout occurred at OIL's high pressure well no. Baghjan-5 at Baghjan in Tinsukia District, Assam on 27<sup>th</sup> May, 2020 while working on the work over well head. Blowout is an inherent hazard of oil exploration jobs while carrying out a well intervention job in the well. Various safety measures are placed while doing the critical well intervention jobs, which makes blowout very rare across the industry. In OIL also, there already existed foolproof safety measures to prevent such hazards or mishaps at oil & gas wells. It is very complex to identify the exact reason of occurrence of a blowout. Entire operation at the well was carried out as per approved work program following the standard operating procedure (SoP). However, the cement plug that was placed as a secondary barrier as per the approved program, failed leading to the gas leakage, which ultimately turned to be full-fledged blowout. The blowout that occurred on 27<sup>th</sup> May 2020 didn't catch fire initially and steps were taken on war-footing to cap the well with the help of Crisis Management team of ONGC & OIL.

1.13 Foreign experts were also mobilized from M/s Alert Disaster Control Inc. Singapore who arrived on 07-06-2020 despite COVID restrictions. A blowout is susceptible to catch fire even with a small spark. The well was therefore being continuously water blanketed 24x7 with the help of fire tenders. However, the well unfortunately caught fire on 9<sup>th</sup> June 2020 while activities were in progress to make way for placing the Blowout Preventer (BOP) on the wellhead. The source of spark could not be ascertained. OIL lost two brave Fire fighters in the fire. Later, an electrical engineer lost his life while on duty at site. There were no casualties of local villagers in the blowout fire.

1.14 The initial attempt to cap the well using specially designed in-house hydraulically driven mechanical transporter had to be abandoned after the well caught fire. The whole

plan changed thereafter with requirement of massive infrastructure to be created at ground zero, viz. debris removal of burnt rig structure, deployment of heavy well killing equipment, creating water reservoirs, and laying pipelines for pumping huge quantity of water from nearby Dangori river etc. Debris removal took much longer time than expected due to very loose soil condition where movement of heavy vehicles was a big challenge. Two attempts of capping operation failed, once due to toppling of the Athey wagon along with BOP-stack due to loose soil condition and once due to snapping of bull line connections. Subsequently, one attempt of killing operation also failed due to failure of annulus valve.

1.15 Thereafter as per advice of M/s Alert Disaster Control, the foreign expert team who was engaged for the well control operation at Baghjan, the Snubbing Unit was mobilized from Canada for killing the well downhole due to the complications arising in the well. Formalities to bring the unit from Canada and non-availability of infrastructure to land the aircraft in Assam delayed the process further. The well was eventually capped successfully on 15.11.2020 and was subsequently abandoned permanently due to technical complexities.

1.16 The Baghjan Gas well blowout temporarily impacted OIL's daily production from the well. Subsequent to successful capping of the blow-out well, field development activities for production of oil & gas from Baghjan field is being continued and wells are being drilled in the vicinity of Baghjan-5 well. There is no indicative impact of blowout on the reservoir.

1.17 When asked by the Committee about the events leading to the Blowout at the Baghjan Well, Ministry in its written replies submitted the following

“OIL India Limited (OIL) was carrying out workover operations in its Baghjan well No.5, Tinsukia District, Assam from 19.04.2020. The responsibility of carrying out the workover job was allocated to one of the Chartered Hired service providers as per terms and conditions of contract and under supervision and monitoring of Company Representative (Installation Manager - IM) appointed by OIL. After initial well completion activities, the well was once again subdued to repair the pressure build up in the annulus. As per procedure, a cement plug was also placed as secondary barrier before repairing the pressure build-up. On 27.05.2020, at around 9AM, it was informed from the well site that as the Blowout Preventer [BOP] was nipped-down to address the pressure build-up issue, the well started displacing fluid, which clearly indicated a failure of both the barriers. The IM provided necessary instructions to shut the well immediately to avoid well kick and rushed to the site immediately. However, by the time the site personnel could arrange and shut the well, the well went into blowout condition rapidly at around 10:30 am.

District authorities were immediately informed about the incident and were also requested for support including assistance for law-and-order issues. Immediately the signs of ensuing disaster could be assessed by OIL's team. OIL fire service team along with the mutual aid partners were deployed immediately to avoid any possible fire. The head of OIL's Field Head Quarters (FHQ) activated Emergency immediately *w.e.f* 10.45 AM of 27.05.2020 as per the DMP (Disaster Management Plan) protocol. Efforts were also made by the technical team to close the well without further delay. Crisis Management Team from ONGC was

called to work jointly with OIL's expert team. International Blow-out control expert, M/s Alert Disaster Control (Asia) Pte Ltd, Singapore was also called to guide the working team. On 09.06.2020, when the joint team of OIL, ONGC and Alert was almost ready with the well control plan, the well unfortunately caught fire at around 1.15 PM, despite Fire Service personnel (along with mutual aid partners) spraying water on wellhead area uninterruptedly since 27.05.2020 to avoid any ignition."

Explaining about the crisis management made by the OIL India Limited, the officials of OIL during the oral evidence made the following submission:-

".... the blowouts are taking place all over the world and here also. In OIL India, last blowout took place in 2005. That was the first major blowout for Oil India. Immediately a crisis management team was made and certain facilities were created. However, as this was a massive blowout one and those facilities were not sufficient to tackle this. Therefore, we called all the equipment from ONGC. ONGC team was also called from Rajahmundry, Ahmedabad, Baroda etc. even during this pandemic. That also was found to be insufficient to control this fire. That is why we had to resort to import one snubbing unit from Canada as the blowout intensity was really very high. Now we have decided and we have already created more facilities to take care of such situation particularly in North East in consultation with ONGC. Both of us are creating facilities in North East...."

1.18 The Committee enquired as to whether any technical assistance was sought from global fire extinguishing companies to extinguish/douse the fire at Baghjan oil field, to which the Ministry furnished the following reply:

"Technical assistance from Global Blowout & Fire Control Company, M/s Alert Disaster Control (Asia) Pte Ltd, Singapore was taken. The intensity of blowout and well pressure was very high and the joint efforts from OIL and ONGC-CMT could not gain control over the blowing well till 30.05.2020. The well was in the vicinity of environmentally sensitive and significantly inhabited area. Viewing the various unfavorable outcome and imminent risk to environment and stakeholders, simultaneous effort to engage internationally reputed Blowout Well Control and Fire Fighting companies was initiated. By sharing the available information of the blowing well, techno-commercial proposal was sought from M/s Alert Disaster Control (Asia) Pte Ltd, Singapore, M/s Wild Well Control, USA and M/s Halliburton Offshore Services (Boots & Coots Services), USA by 31.05.2020. After techno-commercial evaluation of the proposals, the contract was awarded to M/s Alert Disaster Control (Asia) Pte Ltd, Singapore on 01.06.2020."

Explaining about the capacity to handle such blowout incident by the OIL, officials of the Ministry made the following observation during the oral evidence:-

"सर, जो रिलीफ मेजर्स और लोगों को इवैक्युएट किया गया, वह डिस्ट्रिक्ट एडमिनिस्ट्रेशन और रिसोर्सेज ऑयल कंपनीज की कंबाइंड एफर्ट से हुआ। जैसा माननीय

सदस्य ने कहा कि डिस्ट्रिक्ट एडमिनिस्ट्रेशन के पास नहीं होता है, वह सब कंपनी की सपोर्ट से हो रहा था।

दूसरा, जो मेजर चीज ऑब्जर्व की गई है, हमने भी की है और लोगों ने भी की है। ब्लोआउट इतना बड़ा था कि वहां उसको कंट्रोल करने की कैपेसिटी नहीं थी। उस समय मई-जून का महीना था। उस समय कोविड का इश्यू था। सारे फ्लाइट्स बंद थे। आपने सिंगापुर के बारे में पूछा, ये कंपनी सिंगापुर में ही बेस्ड है। सिंगापुर में कॉन्टैक्ट किया गया। उसका एक आदमी ऑस्ट्रेलिया में और दूसरा आदमी कनाडा में था। चार्टर्ड प्लेन हॉयर करके उनको इकट्ठे लाना एक मेजर इश्यू था। हमारा मिनिस्ट्री ऑफ एक्सटर्नल अफेयर्स से फुल इनवॉल्वमेंट होना, कोविड प्रोटोकॉल की परमिशन लेना, उन सभी चीजों को प्रबंधित किया जाना था। मंत्रालय भी उच्च स्तर पर, इसमें पूरी तरह से शामिल था। एक महत्वपूर्ण अवलोकन जो हमने देखा है कि हमें क्षमता बनाने की आवश्यकता है। ओएनजीसी का सिस्टम राजमुंदरी और वड़ोदरा से लेकर गए थे, लेकिन वे भी उतने सफिशिएंट नहीं थे। यह एक महत्वपूर्ण बात है जिसे हमने देखा है और हमने निर्णय लिया है कि हमारे पास पूरी क्षमता के साथ उत्तर पूर्व में एक समर्पित संकट प्रबंधन केंद्र होना चाहिए। आपने मुख्य कारण के बारे में पूछा है।"

1.19 When asked as to whether there is any human error or violation of SoP's leading to the outbreak of fire in Baghjan oil field, the Ministry in its written reply submitted the following:

"As per report on Baghjan blowout incident, the root cause of incident was due to percolation of unset cement which lightened the hydrostatic head and caused the blow out. Lapses in observing some of the SOPs were noticed.

OIL initiated disciplinary proceedings against 18 executives. Major penalty has been imposed on 2 Executives, 2 Executives have been issued administrative warning and rest have been exonerated with the advice to be more careful and vigilant in future."

1.20 The Committee sought to know why the process of extinguishing the oil well blowout had taken more than 100 days, to which the Ministry furnished the following written reply:

"Baghjan-5 blowout was a major gas well blowout with very high intensity and high well pressure. Across the industry, incident of such high-pressure blowout in onshore operations is extremely rare. The execution of well control plan had to be carried out overcoming various hurdles. The various delays in operational sequence is explained as below:-

a. The operational condition was inconducive as the work-over outfit was working with more than 200 nos of tubular double on it. The related supporting infrastructure on the well plinth also resulted in a limited accessibility to the blowing well mouth and plinth area.

**b.** Subsequent to the initial well control operations till 09.06.2020, the high intensity fire ravaged the work-over outfit, related ancillaries and most of the firefighting equipment. Cleaning the well plinth area from all fire damaged debris under intense well fire, dumping these safely at a safe distance were all slow and time-consuming processes because of serious safety hazards.

**c.** Many of the fire control equipment were burnt-off by the well fire. The same had to be sourced and mobilized from various industry partners across the country.

**d.** All approach roads including the blowout site was inundated by flood waters from nearby Dangari river restricting access to the site for many consecutive days. The major bridge on the road breached during the flood, thereby restricting movement of man and material to the site. The soil condition was loose due to repeated wave of flood and some big equipment got stuck/ toppled creating a serious safety risk in operations. All these have caused inordinate delays in operations.

**e.** Site specific improvisation required for equipment to protect from intense heat of well fire at all times during capping operation.

**f.** After successful capping of the well, the surface intervention effort had to be aborted, due to failure of the well head integrity (due to damage caused by the intense heat generated due to the well fire).

**g.** Finally, after trying all possible measures to control the blowout and subdue the well, specialized unit called the Snubbing unit was mobilized from Canada. Due to limited facility of the nearby airports, the snubbing unit was transported on road from Kolkata to Blow out site.

**h.** The first wave of Covid 19 Pandemic and associated lockdown was also a challenge in movement of machineries from various parts of the country and abroad.

**i.** Over and above the operational issues there were geo-political, environmental and social issues resulting in protests and bandhs that delayed the blowout control considerably. Local youth associations protested and road/access to site was blocked on several occasions.”

### **Lapses Committed by Operator and Contractor**

1.21 When the Committee sought to know the exact lapses or violation of SoPs that resulted in the blowout at Baghjan oil well No. 5, the Ministry in its written reply furnished the following:-

“The violation of SOP’s that resulted in the blowout are illustrated below:-

- The Waiting on Cement (WOC) which is 48 Hrs as per SOP, was compromised and M/s John Energy Ltd (JEL) crew started to pull out the pipes after 12 hours only in violation of the plan.
- The position and strength of cement plug was not tested before nipple down of Blow out Preventer (BOP).

- Started pulling out 27/8” drill pipe and nipped down BOP before complete setting of the cement sample kept at surface.
- Once pullout of pipe was completed, JEL crew removed the BOP to change the well head without any instruction from OIL
- In BGN-05, indication of the kick (flow of influx from the well) was detected at around 09:00AM by the Well site crew of JEL. After detecting the kick by the driller, the response of crew members of JEL was neither as per well control procedure nor as per Bridging document agreed by OIL and JEL. Since there was a delay in response in taking well control measures, the blowout occurred at 10:30 am.”

1.22 When the Committee enquired as to why Blowout Preventer (BOP) was removed in violation of procedural requirements regarding change of work programme, the Ministry in its written reply submitted the following:-

"JEL had removed the BOP without the knowledge of OIL's Installation Manager(IM). There was lack of knowledge and deficiency in understanding the gravity of a critical operation on the part of the JEL. JEL nipple down the BOP before completion of WOC period of 48 hours without the permission/intimation of Installation Manager (OIL) which is violation of procedural requirements regarding change of work program."

1.23 When asked by the Committee about any lack of communication between Installation Manager of OIL India and the service provider John Energy Ltd. and If so, any penalty has been imposed on the service provider, the Ministry MoPNG submitted the following in its reply:-

“Yes, there was lack of communication between Installation Manager of OIL India and the service provider John Energy Ltd. The contractor personnel failed to inform the Installation Manager and violated procedural requirements regarding change of work program (Nipple down of BOP) prior to completion of WOC period of 48 hours which can be issued only by the Installation Manager.

The following penalty was imposed to the Service Provider (M/s John Energy Limited)

- a. Contract was terminated immediately after Baghjan Blowout incident
- b. Performance Bank Guarantee deposited against the contract was revoked
- c. M/s John Energy Limited was put into Holiday list from 10.10.2020 to 30.04.2021

1.24 When the Committee wanted to know whether M/s John Energy. Ltd. has been suspended from further operations post the Baghjan incident, the Ministry in its reply stated the following:

- a. "Post Baghjan Blow-out incident, M/s JEL was advised vide letter dated 16.06.2020 of OIL to suspend the mobilization of their 2nd Rig against the contract. Further an internal Committee was formed as per Banning Policy of OIL to examine on non-performance of M/s JEL. The Committee examined the matter in detail and

recommended to terminate the contract immediately and put M/s JEL on Holiday for a period of 2 years.

- b. However, as per direction of Guwahati High Court vide Order dated 11.02.2021, M/s JEL was advised to appear before CGM (C&P) for personal hearing and accordingly, they appeared for personal hearing on 01.03.2021. Based on outcome of the same, the order for Holiday/Debarment was reviewed and the Holiday Period was reduced to 30.04.2021 vide Review Order dated 28.04.2021."

1.25 Asked as to whether OIL India has been continuing with the services of M/s John Energy Ltd. even after the blowout incident, the Ministry in its written reply stated the following:

"After the blowout incident the contract was terminated and Contractor, M/s JEL, was put into Holiday list from 10.10.2020 to 30.04.2021 for providing the service to OIL India Limited. OIL hasn't availed any Workover service from JEL, since then. However, a drilling Rig contract has been awarded to the service provider M/s. JEL, (Rig DR CH-7, for LOC NOAA in Basin Mine) against open tender after the Holiday period."

**Explaining the role of OISD to the Committee during the oral evidence, the officials of OISD made the following submission:-**

"वेल कंट्रोल में ब्लोआउट पर मेन फोकस है। ऑडिट में हम देखते हैं कि इनके बीओपी की कंडिशन कैसी है, उसके प्रेशर टेस्ट कैसे हो रहे हैं, फंक्शन टेस्ट कैसे हो रहे हैं, लोग की ट्रेनिंग वेल- कंट्रोल में कैसी है, बीओपी का ड्रिल कैसे कर रहे हैं। बीओपी के प्रीपेयर्डनेस के तहत, जब ये पुल- आउट करते हैं, तो ट्रिप-शीट भरते हैं या नहीं, इस प्रकार से इसके अन्दर काफी क्षेत्र होते हैं, जो हमारे ऑडिटर्स देखते हैं। गैप मिलने से वे रेकमेंडेशंस बनाकर आते हैं। इन रेकमेंडेशंस को बाद में कम्पनीज कम्प्लाय करती है, जिनको हम मॉनिटर करते हैं।"

### **Role of Installation Manager**

1.26 When the Committee asked as to whether there was any lapse on the part of the Installation Manager in the blow out incident, the Ministry in its written reply stated the following:-

"There is no lapse on the part of the above-mentioned Installation Manager. M/s John Energy Limited (JEL) failed to inform the Installation Manager and violated procedural requirements regarding change of work program (Nipple down of BOP) prior to completion of WOC period of 48 hours which can be issued only by the Installation Manager."

1.27 When the Committee asked as to why the crew of M/s JEL did not act swiftly to control the well after detecting the kick and wasted precious time in taking instructions from officials over the blow out, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

"Even though there were series of non-conformities of SOP carried out by M/s John Energy Ltd (JEL) without the knowledge of OIL, JEL continues to deny

any negligence on their part for delay in taking action to control the kick in the well.”

1.28 When asked whether OIL executives who were supposed to supervise this work were coordinating with M/s John Energy Ltd. or not during this period, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“All Major works were carried out under the supervision of OIL officials as per Contract. After the cementing job, well was under “Waiting on Cementation (WOC)” period and supervision was not required from OIL officials during WOC. After end of WOC, further job was supposed to be carried out under direct supervision of OIL personnel, however M/s John Energy Ltd. started the job without intimating to OIL with violation of procedural requirement.”

1.29 When asked whether HSE officials from both OIL and M/s John Energy Ltd. were to be present at the site during such major work over operations, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“During major workover operations, HSE officials from M/s John Energy Ltd and competent officials from OIL remain present at site.”

1.30 When asked as to why the Installation Manager, OGPS personnel of OIL and Tool pusher of M/s JEL were not present at the rig site during critical operation like removal of BOP and the action taken by OIL against these officials, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“After completion of the cementing job at 04:00 pm on 26th May 2020, well was under Waiting on Cementation (WoC)” period for 48 hours and hence, supervision was not required from OIL officials during WOC period as it was not a critical operation. However, considering the job after WOC, the IM and OGPS personnel could be contacted during that period by official of M/s John energy Ltd for any supervision or clarification or job preparation like arrangement of tools/equipment.”

- During the waiting period, the Tool pusher went for collection of equipment drilling bit for carrying out cement cleaning job. During the absence of Tool pusher, Driller was the Shift-in-Charge at the well site.
- After the end of WOC, further job was supposed to be carried out under direct supervision of OIL i.e. OGPS personnel, however M/s John Energy Ltd. started the job without intimation to OIL with violation of procedural requirement.
- Pending inquiry, both the Installation Manager and OGPS official were immediately suspended after the Baghjan Blowout incident. Subsequently, based on the outcome of the disciplinary committee, the grades of both the Installation Manager and OGPS official were reduced to a lower stage in the time scale of pay (one stage) for period of one year with cumulative effect.

1.31 Further Elaborating the views of Ministry regarding the Baghjan Blowout incident, the representatives of Ministry of Petroleum and Natural Gas made the following submission during the oral evidence before the Committee:-



“After Baghjan incident, which involved a blowout in a well of OIL India in Assam, MoPNG has constituted a three-member high level committee which was headed by Shri SCL Das, DG, DGH and it comprised of Shri B.C. Bora, former Chairman of ONGC and Shri D.K. Sengupta, former Director of ONGC to enquire into the causes of the incident. The Committee recommended various measures to be taken to avoid such incident in future. It took several months to control the fire in the well. The long time taken to control the fire was viewed seriously by the Ministry and the Ministry conveyed its displeasure with the direction to be more careful, proactive in maintaining all precautionary measures and safety standards to prevent such incidents in future.....”

### **Delay in Award of Contract**

1.32 As per the OISD Inquiry Report submitted on 26.08.2020, one of the major lapses committed was the starting of well operations without a formal contract in place. In fact, this rig had already completed workover of one well without contract in place.

1.33 When the Committee asked who was the official and which unit was responsible for finalizing the contract from OIL and at whose behest did the contractor commence the work and what action had been taken in this regard against the person(s) concerned, the Ministry in its written reply mentioned the following:-

"The award of Contract was handled by the Contracts Department at Field Head Quarter, Duliajan. It was processed under Contracts Global Section of OIL. The Letter of Award (LOA) for the Workover Rigs was issued to M/s John Energy Ltd. (JEL) on 23.08.2019 and M/s John Energy Limited confirmed their acceptance to the LOA vide their letter dated 23.08.2019. As per the Provision of the Contract under Clause 4.0, the 'Contract Timeline' is effective from date of issuance of LOA and we quote the clause as below :

“Effective date of contract: The contract shall become effective as on date COMPANY notifies the CONTRACTOR in writing that is has been awarded the contract. This date of issuance of Letter of Award (LOA) by the COMPANY will be the Effective Date of Contract. All terms and Conditions of the contract shall come into force with the date of issuance of LOA”

So, the contract was effective from 23.08.2019 with M/s JEL."

### **Training of personnel**

1.34 Asked by the Committee as to whether any internal review on required procedures in qualifying personnel has been made and what changes have been incorporated to ensure that the qualified personnel are able to discharge their work and respond to situations appropriately, the Ministry in its written reply submitted the following:-

"Qualifying personnel are thoroughly reviewed before placement of contract. Regular training and awareness program are carried out apart from regular statutory training for all personnel working under Workover Mine. From June

2022, every week on Friday, training is provided to around 20-21 Nos of Contractual Employees on HSE Awareness and Job role based training. More than 160 persons have been trained so far.

Qualified personnel like Driller /Toolpusher have been given additional training on Well Control by the In-house faculty in spite of having valid IWCF/IADC certificate to ensure that they are able to discharge their work and respond to situations appropriately after learning from Baghjan incident. More than 100 contractual Drillers, Assistant Drillers, Mud Attendant etc of Workover Rigs were trained in total four batches starting from 20th July 2021."

1.35 When the Committee enquired about the level of oil production at the site of the incident, the Ministry submitted the following reply:

"Well – BGN-05  
Total Natural Gas – 88,000 SCMD  
Total Crude Oil / Condensate – 29 Kilo litre per Day

(This was a gas well however, with gas production, there is an associated flow of condensate. The well was flowing gas @ 88,000 SCMD along with condensate of 29 kl per day)"

1.36 Asked about the estimated financial loss to OIL on account of this blowout incident including the collateral loss to surroundings and loss of production, etc., the Ministry furnished the following in its written reply:

"OIL India Ltd has incurred expenditure of Rs 449.03 crores related blowout of Well No 5 at Baghjan. Out of Rs 449.03 crore, Rs. 301.11 crore was incurred on arresting the blowout and Rs. 147.92 crore incurred on relief & rehabilitation and compensation to the affected public.

Based on the average daily production of natural gas and condensate from Baghjan well - 5 before the incident of blowout, the loss of production is estimated at about Rs.20 crore in total from the date of the incident till horizontal diversion of natural gas production."

During the oral evidence about the review of Baghjan incident by Safety Council, the representatives of Ministry/OIL submitted as under:

"अंत में, एनुअल मोनिटरिंग सेफ्टी काउन्सिल, जिसके चेयरमैन, सेक्रेटरी, पेट्रोलियम एंड नेचुरल गैस के द्वारा की जाती है। इसका इम्प्लीमेंटेशन स्टेट्स है, हम लोगों के पास जैसे ही रिपोर्ट आई, उसके तुरंत बाद 12 अप्रैल, 2022 को एक टास्क फोर्स बना दी थी और सेक्रेटरी, पेट्रोलियम एंड नेचुरल गैस मिनिस्ट्री ने 6 मई, 2022 को रिव्यू किया। फिर एक्सटर्नल सेफ्टी ऑडिट ओआईएसडी की तरफ से 9 मई, 2022 और 13 मई, 2022 के बीच हुआ। ओआईएसडी ने दोबारा से इसको 24 मई, 2022 को रिव्यू किया, फाइनली

ऑयल एचएससी कमेटी जिसमें इंडिपेन्डेंट डायरेक्टर रहते हैं, उसने इसको रिव्यू किया था, उसने 16 जून, 2022 को रिसेंटली रिव्यू किया था।"

1.37 Asked as to whether there are any clause for compensation/levy of penalties for poor performance or loss of production, the Ministry furnished the following reply:

"Regarding compensation/levy of penalties, applicable clauses are available in the contract for poor performance/loss of production in addition to HSE aspects."

1.38 On being asked by the Committee as to why OIL did not take corrective actions on observations made by OISD and the formats used by OIL were not in accordance with OISD guidelines and who were responsible for such omissions, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

- Post blowout, all Standard Operating Procedures (SOP) (1044 Nos.) have been revised through a Multi-Disciplinary Committee. In addition, Workover Mine under Drilling Services have been transferred to OGPS department for better monitoring and supervision.
- All formats used at OIL were prepared as per OISD guidelines.
- The daily diary was not filled-in as per statute by the IM. Presently, the same is now complied by all IMs. "

1.39 When asked to furnish reasons in detail for lapses pointed out by High Level Committee on the part of operator *i.e.* OIL and contractor *i.e.* M/s JEL, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

- i. Evaluation of the viability of the cement barrier was considered in the well program. Planning group always re-addresses well control issues each time a barrier is removed or replaced. It was clearly mentioned in the well program to carry out well head repair only after WOC period of 48 hours. OIL has a policy of tagging and testing of cement plug in temporary/permanent abandonment
- ii. Though tagging and testing were not included in the well program but WOC of 48 hrs starting from 04:00 pm of 26th May 2020 was clearly mentioned in well program as well as cementing report and there was no instruction to reduce the WOC period of 48 hrs.
- iii. Time period of Waiting on Cementation (WOC) was 48 hrs. However, M/s. John Energy limited (JEL) pulled out the drill pipe before 48 hours without any instruction from OIL and also failed to inform the Installation Manager.
- iv. Lack of knowledge and deficiency in understanding the gravity of a critical operation on the part of the JEL, which is evident from the fact that JEL without the instruction of the IM and before completion of planned WOC for 48 hours, and in absence of Production Engineer of OIL and Tool pusher of JEL had removed the BOP without the knowledge of IM.

- v. When JEL personnel observed flow from the well, they should have had immediately nipple up BOP and shut the well for initial control of the well as per contract clause 19.1 under SCC (Section-III) and Bridging Document (clause no 3.11.1.3) instead of wasting precious time over decision/instruction from OIL. Whereas as per Clause no 7.17 L (iii) under SCC (Section III) both Tool Pusher/ Tour Pusher and Driller must possess valid well control certificate (IWCF)/IADC and should be conversant with well control methods to take independent in case of well emergencies.

1.40 When asked by the Committee as to what measures have been initiated to prevent recurrence of such blowouts given the presence of 21 active wells in and around Baghjan region, the Ministry submitted the following written reply:

"SoP and set emergency procedure followed by OIL in case of blowout like situations were available. However, after the massive blowout (which was a difficult one to control), all the SoPs and Emergency Procedures were reviewed and re-assessed; and following stringent measures were taken after the Baghjan Blowout:

a. **Standard Operating Procedures:** OIL India has been following Good Petroleum Industry Practices and has Standard Operating Procedures for its activities with respect to all operations directly or indirectly related to Drilling, Workover, Production of oil & gas including maintenance, Logging or any other related services. The Blowout incident at Baghjan well no. 5 had necessitated a review of the existing SOPs and also add relevant ones for further improvement and operational excellence. The Standard Operating Procedures (SOPs) for various activities in the oil & gas installations as well as for other service departments (1044 SoPs in total) in OIL India Limited were reviewed. From now on all SOPs will be reviewed after every 2 years. However, in case of change or upgradation in equipment/ system or adoption of any new system, the relevant SOP will be reviewed / added as and when required.

b. **Increased site visits** of various levels of senior officials to different work centres with proper checklists. Such records of visits are to be maintained for periodic review by the Head of Departments, Group Heads, Head of Fields and concerned Directors.

c. **Structural change:** OIL had earlier shifted to an asset-based structure for the Main Producing Area (MPA) under Fields Headquarter with an objective of increasing production through focused attention to the matured acreages covered by the Mining Leases in Assam and Arunachal Pradesh. The Asset based structure had proved to be effective and the Geology & Reservoir (G&R) teams had been reorganized in alignment with the Assets to provide focused support. However, post Baghjan Well N0-05 incident, it was perceived that there was scope for improvement in the structure especially in areas of drilling and workover operations.

With the above in view certain structural changes were brought in, in the following areas:

- i. Workflow for custody transfer of well in different phases of its lifecycle.

ii. Restructuring of Organogram for Workover activities.

Under the above initiative, Workover Section, which was earlier a part of Drilling Services and reporting to Director (E&D) was brought under Director (Operations) along with the rig resources, allied services and personnel on 'as is where is' basis. This would ensure operational synergy, more job focus and single point responsibility in work-over operations.

d. **Mines Structure:** The above also necessitated restructuring of the "Mines Structure". Accordingly, actions were taken to reassign Mines Owner, Mines Agent, Deemed Agent, Mines Manager etc., in line with the new operational structure at Fields Headquarter.

e. **CMT (Crisis Management Team) Department:** The process of strengthening the existing CMT department was undertaken with adequate numbers of manpower and machinery. The CMT personnel along with the other related to well control operations are undergoing Certified training programmes. Frequency of mock drills is being increased to keep the members in full readiness at all times. Last Level-III off-site Mock Drill at the Secondary Tank Farm(STF) Duliajan was conducted by OIL on 21.01.2022. Process for procuring few equipment was also initiated. While some of the equipment have already arrived, the remaining are expected within a few months.

f. **Safety Audits:** Presently OIL has a robust system of safety audits with following audits carried out in every Drilling / Workover location:

- Pre- Spud in audits in Drilling Rigs before starting the operation.
- Pre-Workover audits in Workover Rigs before starting the operation.
- Surprise Safety audit during Drilling & Workover operations
- Multidisciplinary Audit in all operating drilling rigs and workover rigs annually during Internal Safety Week observance

Multidisciplinary Audit was carried out during internal safety week from 17<sup>th</sup> November to 27<sup>th</sup> November 2021."

### **Enquiries into the incident**

1.41 The enormity and severity of the blowout incident caught the attention of the Government and the judicial bodies which resulted in constitution of several internal and external Committees for enquiring the incident and making recommendations thereon. Three of such Committees require mention in this Report.

One Committee was constituted by Oil Industry Safety Directorate (OISD) consisting of Shri Zafar Ali, Additional Director (E&P), OISD, Shri Ajoy Kumar Das, GM(D), ONGC and Shri Dibyajyoti Dutta, DGM(D), ONGC to investigate the incident of blowout, to identify the root cause of the accident and to suggest remedial measures to prevent recurrence of such events.

1.42 After the submission of the Report of the Committee appointed by OISD, Ministry of Petroleum and Natural Gas constituted a three Member High Level Committee consisting of Shri S.C.L. Das, IAS, DG, DGH, Shri B.C. Bora, Former CMD, ONGC and Shri T.K. Sengupta, Former Director (Offshore) ONGC. The Committee was headed by DG, DGH. The terms of the reference of the Committee were to identify the lapses in

following laid down protocols and procedures which led to the incident and to recommend short and long-term measures to prevent the recurrence of such incidents including identifying any gaps in laid down standard operating procedures.

1.43 A Committee was also constituted by the Hon'ble National Green Tribunal consisting of Hon'ble Mr. Justice B.P. Katakey, former Judge of the Gauhati High Court, Chairperson, Member Secretary, Central Pollution Control Board (CPCB), Member, a senior expert from Council of Scientific and Industrial Research (CSIR), Member, Dr. Sarbeswar Kalita, Professor and Head of the Department of Environment Science, Guwahati University, Member, Shri Abhay Kumar Johari, IFS (Retired), Former Member, Biodiversity Board, Member, Shri Ajit Hazarika, Ex-Chairman, ONGCL, Member, Member Secretary/Senior Scientist, Assam State Pollution Control Board Member (PCB, Assam), Member, District Magistrate, Tinsukia District, Assam (DC, Tinsukia), Member

### **Disciplinary action against officials of OIL**

1.44 The enquiry of the high level Committee appointed by Ministry of Petroleum and Natural Gas and Justice B.P. Katakey Committee Report appointed by NGT had found out lapses in the planning of the workover and execution of the same.

1.45 When the Committee enquired about the lapse on the part of the Installation Manager overseeing the workover at Baghjan well-5, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“There is no lapse on the part of the above-mentioned Installation Manager. M/s John Energy Limited (JEL) failed to inform the Installation Manager and violated procedural requirements regarding change of work program (Nipple down of BOP) prior to completion of WOC period of 48 hours which can be issued only by the Installation Manager.”

Explaining the view of the accountability of officials present in site, the officials of the Ministry made the following submission during the oral evidence:-

“इसमें कहीं डाउट नहीं है कि कहीं न कहीं चूक थी। हमारे सारे एसओपीज हैं, लेकिन फिर भी यह घटना हुई। इसमें किसी को दो राय नहीं है कि किसी की कहीं न कहीं चूक थी।

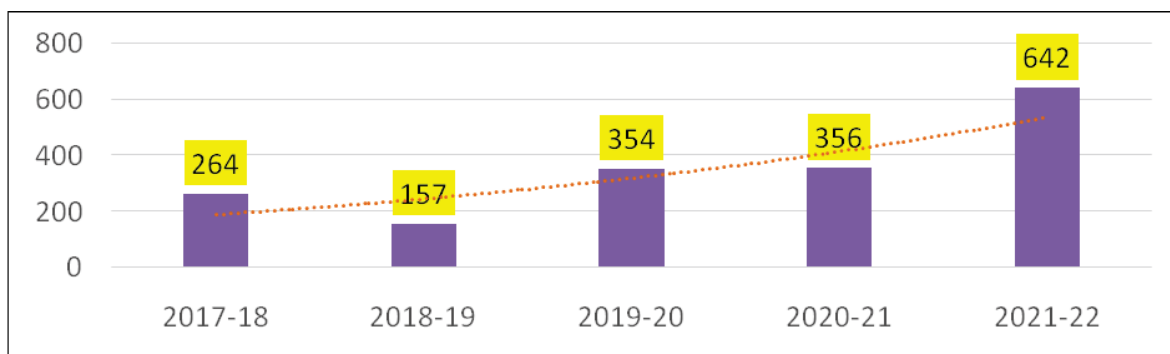
सर, आपने प्रश्न पूछा था कि जो काम हो रहा था, वह अपनी रिग थी या हायर्ड रिग थी। यह किसी कम्पनी, कॉन्ट्रैक्टर की एक हायर्ड रिग थी। वह काम कर रहा था, लेकिन वहां जिम्मेदारी काफी लोगों की थी कि किसको वहां पर क्या करना चाहिए था। उसमें नोटिस किया गया कि जिस-जिस की जिम्मेवारी बननी चाहिए थी, उसमें कहीं न कहीं चूक हुई है। सर, किसी न किसी की जिम्मेवारी होती है और उसमें भी लैप्सेज हैं। उसमें कुछ लोगों के खिलाफ ऐक्शन लिया गया है, उस पर अरुण जी प्रकाश डालेंगे।”

1.46 When enquired about the disciplinary action against the officials of OIL the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“OIL initiated disciplinary proceedings against 18 executives. Based on the outcome of the disciplinary committee, Major penalty has been imposed on 2 Executives, 2 Executives have been issued administrative warning and rest were exonerated as no charges as per Memorandum of Article of Charges as per OIL’s “Oil Indian Executive Conduct and Appeal Rules” could be established.

### Near Miss Reporting

1.47 OIL strictly implemented the system of reporting of near miss incidents. To this effect, in order to encourage reporting of Near Miss incident, a reward system is in place. In the event of any near miss incidents, investigations are carried out and corrective measures are circulated for knowledge sharing either as a report or as a safety alert through oilmail (OIL’s intranet facility). The near miss incidents are also discussed in the safety meetings at all levels including Board level through presentations. Similar system is also followed for occurrence of any accidents, fire or dangerous occurrence. Glimpse of near miss reporting of OIL for last 5 years is as under.



\*The above data includes any unsafe act and unsafe conditions.

1.48 When the Committee asked as to why the number of these incidents is increasing despite the strict adherence to SoP's, the Ministry in its written reply stated the following:-

“A near miss, is an unplanned event that has the potential to cause, but does not actually result in human injury, environmental or equipment damage, or an interruption to normal operation. In short, Near miss reporting is a proactive measure of identifying early warning signs of an incident.

An increasing trend of near misses reporting aids in taking proactive step to improve the workplace and move towards rectifying potential hazards and risk which can cause harm to human, environment, or equipment.

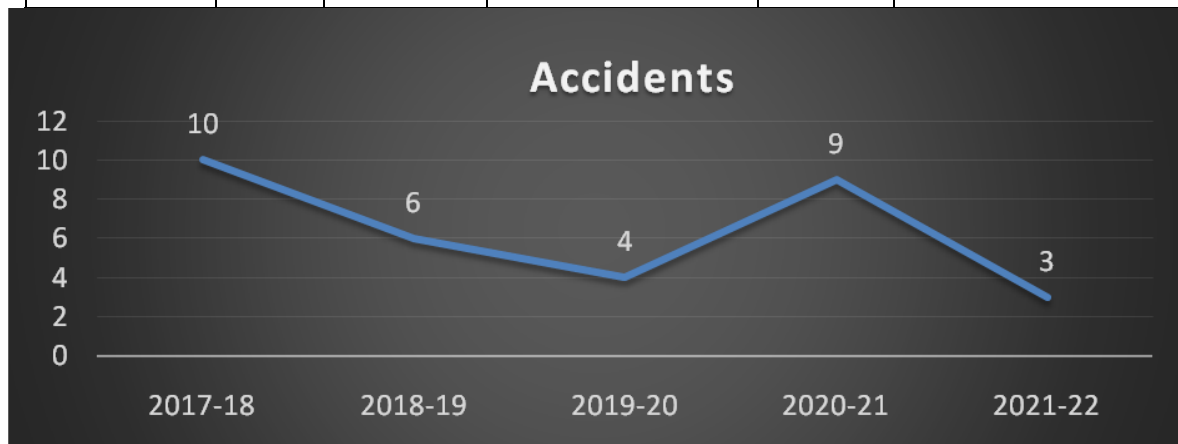
The reporting has increased due to increase in awareness and rewarding program is in place to motivate the reporting of near miss. These reports are analyzed to identify the root cause of incident and implement the control measures throughout the company to prevent reoccurrence of such incidents. **Reporting of increased**

**near miss causes reduction in no. of accidents.** Hence increase in near miss is desired for safety of the operation.”

**Analysis/Investigation of accident/dangerous occurrence**

1.49 All accidents and high potential near misses are investigated by a multidisciplinary team. Annual accident and near miss analysis are carried out and circulated.

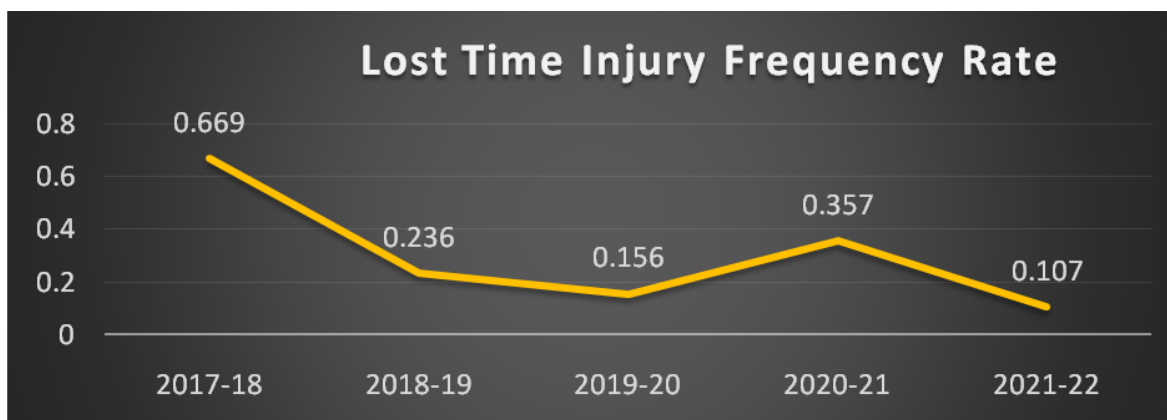
Year	Fatal	Serious	Minor Reportable	Total	Loss Time Injury Frequency Rate(LTIF)
2017-18	0	9	1	10	0.392
2018-19	0	6	0	6	0.236
2019-20	0	2	2	4	0.156
2020-21	5	3	1	9	0.357
2021-22	1	1	1	3	0.107



**HSE Performance**

1.50 Apart from number of audits, compliance of HSE recommendations, safety training, near miss reporting, OIL also tracks the Loss Time Injury Frequency Rate (LTIF) on regular basis and maintains annual record.





**IT-enabled system for core functions:** Introduction of IT-enabled system for Drilling, Workover and Production operations to ensure availability of real-time information on critical well operations to Installation Manager.

**Review of Disaster Management Plans(DMP):** The Off-Site DMP was reviewed and submitted to District Administration of Dibrugarh & Tinsukia. Moreover, mock drills being conducted including District Administration, State Disaster Management Authorities, Neighbouring Industries etc.

**Training:** Well control training being imparted to Drilling Rig personnel and it will be also extended to workover rig key personnel and production engineers. Till now around 128 Personnel has been trained.

A specialised training on “**Basic Life Safety and First Responder**” has been introduced for executive as well as employees for personnel safety at their workplaces and emergencies. Till now around 114 Personnel has been trained.

2-Day Training Programme on HSE Management System has been organised for key officials working in operational areas for enhancing the awareness on HSE on 27<sup>th</sup> to 28<sup>th</sup> July 2021.

Explaining the training being given to employees of OIL during the oral evidence, the representatives of OIL made the following submission:-

“ .....इसके अलावा हम लोगों ने ट्रेनिंग और आडिट वगैरह में सेफ्टी इनिशिएटिव्स लिए हैं। सेफ्टी आडिट, जैसा पहले आप देख सकते हैं 641 हुए थे 2020-21 में और बागजान इंसीडेंट के बाद, हम लोगों ने उसे बढ़ाकर करीब 731 कर दिया है। ये वैरियस आडिट जैसे कि, वर्क ओवर ड्रिलिंग आडिट, फायर आडिट, एन्वायरनमेंट आडिट, सरप्राइज आडिट आदि। एक्सटर्नल एजेंसीज़ हैं, जैसे ओआईएसडी, डीजीएमएस हम लोगों के लिए आडिट करती हैं। .....”

## **Relief and Rehabilitation**

1.51 When the Committee enquired about how many families had to be relocated from the Baghjan oil blowout site for safety reasons and whether they have been resettled in their original habitats, the Ministry in its written reply submitted the following:

"Around 3000 families were shifted to 12 Relief Camps for 3 to 4 months as a precautionary measure. The camps were closed when the well was brought under control. The persons staying in the camps went back to their homes."

## **Monetary Compensation to affected Families**

1.52 The National Green Tribunal (NGT) in its preliminary order dated 06.08.2020 had directed for payment of compensation to the families affected by the fire and blowout incident at Baghjan-5.

1.53 When asked by the Committee about the families identified for monetary compensation affected by the fire and blowout incident, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

"As per preliminary order dated 06-08-2020, NGT had directed for payment of interim compensation in 3 categories to local residents nearby to OIL's well Baghjan -5 as under:

a.	Category (i)	Rs. 25.00 Lakhs (whose houses have been completely gutted by fire)
b.	Category (ii)	Rs. 10.00 Lakhs (whose houses have been severely damaged)
c.	Category (iii)	Rs. 2.5 Lakhs (whose house has been moderately /partially damaged or whose standing crops and horticulture have been partially damaged)

Accordingly, OIL released the payment to the Deputy Commissioner, Tinsukia, as per the list submitted by the District Administration.

	<b>NGT Order</b>	<b>No. of families</b>	<b>Amount (Rs)</b>	<b>Total</b>
A	Category (i)	12	₹ 25,00,000.00	₹ 3,00,00,000.00
B	Category (ii)	57	₹ 10,00,000.00	₹ 5,70,00,000.00
C	Category (iii)	561	₹ 2,50,000.00	₹ 14,02,50,000.00
				₹ 22,72,50,000.00

Subsequently, as per advise of District Administration, Compensation for Category (ii) and Category (iii) was revised to Rs 15 Lakhs and 10 Lakhs respectively.

Accordingly, for Category (ii) @15 Lakhs for 173 families and @ 10 Lakhs for 439 families, a total amount of ₹ 69.85 Cr, was paid as compensation. Rs 22.725 Cr

was already paid as detailed in above table and balance Rs 47.125 Cr was later deposited with DC, Tinsukia.

	<b>Revised Order as per tripartite agreement</b>	<b>No. of families</b>	<b>Amount (Rs)</b>	<b>Total</b>
B	Category (ii)	173	₹ 15,00,000.00	₹ 25,95,00,000.00
C	Category (iii)	439	₹ 10,00,000.00	₹ 43,90,00,000.00
			A	₹ 69,85,00,000.00
			B (already paid as per NGT order)	₹ 22,72,50,000.00
			<b>Remaining (A-B)</b>	<b>₹ 47,12,50,000.00</b>

Additionally, as per the advice of Deputy Commissioner, Tinsukia one time compensation based on District Administration survey was given to the affected families as detailed below :-

	<b>Order of DC</b>	<b>No. of families</b>	<b>Amount (Rs)</b>	<b>Total</b>
A	One time compensation	1285	₹ 50,000.00	₹ 6,42,50,000.00
b	One time compensation	3887	₹ 30,000.00	₹ 11,66,10,000.00
c	One time compensation	8321	₹ 15,000.00	₹ 12,48,15,000.00
d	One time compensation	1993	₹ 10,000.00	₹ 1,99,30,000.00
				<b>₹ 32,56,05,000.00</b>

Furthermore, as per the advice of Deputy Commissioner, Tinsukia certain other compensation were disbursed as detailed below :-

	<b>Order of DC</b>	<b>Total</b>
a	Compensation to three families of deceased (not due to fire/accident) near Baghjan blowout site	₹ 18,00,000.00
b	Reimbursement to DC for various meeting held by DC amongst various authorities in connection with Baghjan	₹ 15,00,000.00
	<b>Total</b>	<b>₹ 33,00,000.00</b>

Overall, OIL paid Rs.102.74 Cr as compensation to affected families.”

1.54 On being asked by the Committee about the criteria/procedure adopted by OIL for identifying households for compensation, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“Based on the assessment, the District Administration intimated OIL about the total number of beneficiaries against various categories of affected families,

which were also recommended by the Committee constituted by the NGT. Accordingly, OIL released the amount to Deputy Commissioner, Tinsukia for payment to the beneficiaries, as identified by the District Administration.”

1.55 The Committee enquired about the number of households that were gutted due to the impact of the Baghjan blowout and details of relief and rehabilitation measures extended, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“A total of 12 Nos. of houses were gutted due to blowout at Baghjan Well No.5. Post Blowout, 1610 families (6700 nos. people) were accommodated at 12 relief camps established by OIL. All the Relief Camps were provided with food, shelter, lighting, hygiene, toilet, drinking water medical requirements and other basic amenities. The District Administration extended extensive support in running the relief camps.”

1.56 When asked about the compensation paid to the next kin of the firefighters, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“Compensation paid including the Personal Accident Insurance Coverage, Contributory Term Life insurance, Compensation under The Employee’s Compensation Act, 1923, EDLI etc. are as hereunder:

Name	GPA	Workmen Compensation	SSS	EDLI	Total Compensation
X	₹ 40,49,830.00	₹ 10,43,475.00	₹ 30 Lakhs	₹7,02,000	₹ 87,95,305.00
Y	₹ 5,03,488.00	₹ 14,59,800.00	₹ 30 Lakhs	₹7,02,000	₹ 56,65,288.00

**Terminal benefits such as PF, Gratuity paid to the dependents of the Employees are as hereunder:**

Name	PF	Gratuity	Total Amount Paid
X	₹ 88,71,100.79	₹ 20,00,000.00	₹ 1,08,71,100.79
Y	₹ 11,55,581.86	₹ 5,48,691.00	₹ 17,04,272.86

1.57 When the Committee asked about the financial assistance for education of the children of deceased firefighters, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“Compassionate employment has been provided as per Company Policy to the son of Late Tikheswar Gohain and wife of Late Durlav Gogoi .After employment their children are eligible for educational facilities as per OIL’s Children Education policy.”

### **NGT Directions about violations and non-compliance by OIL**

1.58 The Committee perused the recommendations of the Committee appointed by NGT. The following are some of the important observations:-

(i) Based on the information gathered thus far, the Committee has been able to arrive at key findings with conclusive evidence *inter-alia* of violations and non-compliance by OIL of key environmental safeguards and safety oversight that appears to render the environmental protections, particularly under the Air (Prevention and Control of Pollution) Act, 1981, Water (Prevention and Control of Pollution) Act, 1974, Hazardous Waste (Management and Handling) Rules, 1989 and more recently the Hazardous and other Wastes (Management & Transboundary Movement) Rules, 2016 ineffective.

(ii) OIL never had the CTE/NOC and/or the CTO both under the Water Act and/or under the Air Act, when it first started its drilling operations in Well Baghjan-5 in 2006. What is alarming is that the records furnished by OIL and PCB, Assam consistently indicate a clear infraction of environment safeguards as prescribed under the aforesaid laws by OIL, even for the subsequent years. As evident from the reply to the Show Cause Notice dated 19.06.2020 and the records submitted by PCB, Assam, the mandatory consent under the Water Act and Air Act was approved by PCB, Assam only for the years 2008-09, 2012-13, 2018-19.

(iii) OIL had no CTE/NOC and/or CTO either under the Water Act and/or the Air Act and/or authorization under the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016.

(iv) On the day of the blowout of Well Baghjan-5 on 27.05.2020 and explosion on 09.06.2020, OIL did not have the mandatory consents including the CTE/NOC and/or the CTO under the Water Act, Air Act and/or the Hazardous Waste (Management, Handling and Transboundary Movement) Rules, 2016. The omissions on the part of OIL amounts to a clear violation not merely of the statutory mandate but also the conditions that have been stipulated under Clause 10 (iii) and (vi) of the Environment Clearance dated 11.05.2020 with respect to the Extension Drilling & Testing of Hydrocarbons at 7 locations under the DSNP Area, where the blowout and subsequent fire occurred with respect to Well Baghjan-5.

(v) Having reviewed the documents placed before the Committee by both OIL and the Assam State Biodiversity Board, there appears to be a clear noncompliance *vis-à-vis* of conducting the Biodiversity Impact Assessment study as was mandated *vide* Clause 1 of the Order dated 04.12.2006 passed by the Hon'ble Supreme Court in the case of Goa Foundation vs. Union of India [W.P.(C) No. 460/2004]."

## **Environmental impact assessment**

1.59 Justice B. P. Katakay report sought legal action against OIL India for violating air, water and environmental protection acts for extraction of hydro-carbons in the ecologically fragile Baghjan region.

1.60 When asked by the Committee as to whether OIL India obtained mandatory approvals/clearances for extraction of hydrocarbons in and around Baghjan region, the Ministry of PNG has stated the following:-

“OIL had obtained all the mandatory statutory clearances as per the requisite applicable laws as detailed below : -

OIL had obtained Consent to Establish (“CTE”) and Consent to Operate (“CTO”) under :-

- (i) Water (Prevention and Control of Pollution) Act, 1974 (“Water Act”),
- (ii) Air (Prevention and Control of Pollution) Act, 1981 (“Air Act”); and

Also, Hazardous waste authorization was obtained under :-

- (iii) Hazardous Wastes (Management and Handling) Rules, 1989 (“Hazardous Waste Management Rules”);

For Environment Clearance of Baghjan Well No.5, the Environment Impact Assessment (EIA) Notification was published by MoEF&CC in Sept., 2006., however, the preparatory work had started prior to the notification and the drilling operations started in the month of November 2006.

Subsequently, OIL applied for EC on 19.11.2007 against drilling of development and exploratory wells at North-Hapjan-Tinsukia-Dhola area in Tinsukia District Assam and was granted EC on 01.11.2011.

1.61 According to Justice Katakay Report, the Supreme Court granted a conditional approval to Oil India stated that the Company must carry out a bio-diversity impact assessment before commencing extraction of hydro-carbons. However, Oil India did not carry out the required assessment for the same.

1.62 When asked by the Committee to furnish reasons for not carrying out bio-diversity impact assessment before commencing extraction of hydro-carbons, The Ministry in its written reply submitted the following:-

“All statutory clearances were in place during the operation at Baghjan Well no. 5. The condition for carrying out Biodiversity study was recommended against a completely different proposal of OIL namely on Extension Drilling and Testing of hydrocarbons at 7 (seven) locations under Dibru-Saikhowa National Park Area, Assam.

As the said proposal required to carry out drilling more than 4000 mtrs below a Protected Area using latest technology of Extended reach Drilling (ERD), while granting Wildlife Clearance the Standing Committee of NBWL in its meeting held on 29th July, 2017 and Hon'ble Supreme Court in its order dated 7th September,

2017, recommended to carry out Bio-diversity study and implementing the mitigation plan among other allied conditions.

It is pertinent to mention that the biodiversity is in progress and OIL has not started any drilling under the above-mentioned proposal.”

**TERI (The Energy and Resources Institute) Report**

1.63 After the blowout incident, since news reports had suggested extensive damage to the environment of the surrounding areas due to spill over of oil condensate, noise, burning of crops, vegetation, tea bushes etc. Accordingly, OIL appointed TERI (The Energy and Resource Institute) for assessment of environmental quality – water, soil and vegetation in and around Baghjan-5. A biodiversity impact assessment was also carried out by Assam State Biodiversity Board.

1.64 Oil India engaged M/s TERI (The Energy and Resources Institute) for assessment of environmental quality-water, soil and vegetation in and around Baghjan Well 5. When the Committee sought to know whether TERI has submitted its report to Oil India, and if so, what are its findings, the Ministry in its written reply stated the following:

“Yes. The final assessment report was submitted by TERI on 28.02.2022 and the findings are illustrated below :-

Sample	Findings
Soil	The sample analysis showed no occurrence of pollutants like heavy metals, Polycyclic Aromatic Hydrocarbons (PAH) and Benzene, Toluene, Ethylbenzene and Xylene (BTEX). Other physico-chemical properties analysis results showed that the soil is comparable with normal soil type.
Plant/ Vegetation	Blowout associated pollutants like Total Petroleum Hydrocarbon (TPH), BTEX and PAH was found below the detection limit.
Surface Water	Surface water was found to be free from oil and grease, PAH and heavy metal contamination.
Ground Water	The metallic salts and heavy metals such as Zn, Ni, Cr, Cr (6+), Pb and Cr were found to be below detection limits as per IS 10500:2012 drinking water standards.
Fish	The sample analysis results showed no accumulation of PAH, BTEX and tested <u>no</u> heavy metals like cadmium, lead, mercury, nickel and hexavalent chromium.

1.65 When asked by the Committee as to whether Assam State Bio-Diversity Board had submitted its report to assess the impact on biodiversity in the aftermath of the Baghjan blowout, the Ministry has stated the following:

“A tripartite MoU between Assam State Biodiversity Board, International Union for Conservation and Nature and OIL was signed on 04.05.2021 to carry out a Biodiversity Impact Assessment Study in Dibru Saikhowa National Park and Develop Comprehensive Management Plan & also, to support in implementation of the Management Plan Developed. The study would be carried out in phases as illustrated below :-

Phase	Date	Status
field survey	3 <sup>rd</sup> to 8 <sup>th</sup> Aug, 2021	Completed
impact assessment	27 <sup>th</sup> Nov to 9 <sup>th</sup> Dec, 2021	Completed
Ecosystem services review	25 <sup>th</sup> Apr to 6 <sup>th</sup> May, 2022	Completed
biodiversity management plan		Interim Report for 2 seasons submitted in Jan, 2022. and First Draft Report on Ecosystem was submitted in July, 2022. Final Report awaited
Mitigation Plan		Yet to be started

### **Directions of National Green Tribunal (NGT)**

1.66 NGT had also mentioned in their report that there were impacts on crops and ecology of the nearby areas. OIL in this regard, had been undertaking all possible efforts by engaging its own resources and engaging hired services from organizations of national repute to minimize the impacts on the environment and to recuperate from the damage caused to the crops and ecology in the vicinity of the affected area. Apart from the District Administration, the following organizations/Agencies were engaged for the purpose for accessing the impact on environment and find suitable mitigation measures:

- (i) M/s ERM India Pvt. Limited, an NABET/QCI accredited Environmental Impact Assessment (EIA) Consultant.
- (ii) The Energy Research Institute (TERI)
- (iii) Assam Agricultural University (AAU).
- (iv) CSIR- Northeast Institute of Science and Technology.
- (iv) IIT, Guwahati
- (V) Assam State Biodiversity Board

As per reports submitted by these organizations, there has been no adverse permanent effect on the surrounding areas including the Blowout site. The summary of various studies are as under:

#### **Report of Assam Agriculture University**

- The soil sample collected from the North, South, East and West direction within 500 m radius of the Baghjan (BGN -5.)
- Porosity, alkalinity, pH and electrical conductivity (EC) were in the safe limit.
- Soil pH ranged between minimum 5.33 (acidic) and maximum 7.64 (slightly saline).
- The soil carbon (WBC) data ranged from 0.97 to 2.27%.
- Soil available nitrogen was found to be in the lower range.

#### **Conclusion of The Energy Research Institute (TERI)**



- Noise level at the distance of 500m from well head were in the range of 75- 80 db.
- The monitoring results for Parameter are within the NAAQS limits.

**CSIR- North East Institute of Science and Technology (NEIST):**

- Occurrence of local earthquake tremors of smaller magnitude.
- The magnetic field declination was observed at the blowout site (Latitude 27.597150 N and Longitude 95.3798940 E).
- High frequency disturbances (noise) levels were observed as recorded by the seismographs, originated from the blowout site during Jet fire Stage.

**Indian Institute of Technology, Guwahati**

- Sound Intensity Measurement Inference: No detrimental effect to the structural integrity.
- Spectral Energy Inference: No detrimental effect to the structural integrity.
- Frequency Inference: No significant influence to the structural integrity.
- Thermal Measurement Inference: No significant effect of fire in blowout well in Baghjan well 5 to the structural integrity.

**M/s ERM India Pvt. Limited, an NABET/QCI accredited Environmental Impact Assessment (EIA) Consultant.**

- Post blowout period ambient quality monitoring results revealed that all the pollutants were as per NAAQ standards.
- Sample were collected within the 5 Km radius of BGN-5 to monitor the Physico-Chemical Parameters including TPH, PAH and BTEX.
- No abnormality was observed in Physico-Chemical Parameters
- No visible sign of condensate deposition observed at DSNP soils at the monitored locations.

**Central Pollution Control Board**

- Sample collected from 05 water body within the range from 100 to 500 Mtr from Well Head.
- All Parameters are within limits for surface water quality.
- Ambient Air Quality all parameters are within limits.

**Bioremediation**

- Effective restoration of the oil spill affected area.
- Restoration in shortest possible duration.

- Plantation of native species *Vigna mungo* (Urad bean) part of Eco restoration of contaminated site.

### **Biodiversity Study by Assam State Biodiversity Board in collaboration International Union for Conservation of Nature (IUCN)**

- The Biodiversity study is being carried out in and around Dibru-Saikhowa-National Park including MaguriMotapungbeel by Assam State Biodiversity Board.

However, NGT in its order had directed to constitute three committees under MoEF&CC, MoPNG and Govt. of Assam to study the aspects of regulatory compliance, safety in the operations and ecological impact in the area on account of the blow out respectively. MoPNG has constituted committee as per direction. The committee formed under MoEF&CC was reconstituted by Supreme Court dated 09.02.2021 due to matter concerning conflict of interest by appointment of a committee member.

### **Restoration of Environment near Blowout Site**

1.67 When asked by the Committee as to what action plan was finalized by Oil India with regard to restoration of flora and fauna and undo the environmental damage that occurred in nearby areas of the well site in Baghjan, the Ministry in its written reply stated to following:

“No environmental damage has occurred in nearby areas of well site Baghjan. Post Baghjan Blowout, OIL took up immediate bioremediation work for affected area in association with M/s TERI. Additionally, OIL carried out Environment impact assessment study by NABL accredited M/s ERM India Pvt. Ltd and M/s TERI. The study reports don't show any deviation from prescribed environmental parameters.

OIL has signed an MoU with Pollution Control Board, Assam on 21.07.2022 for carrying out mass plantation in Baghjan well No.5 plinth in Tinsukia District, Assam. Additionally, OIL is carrying out a Biodiversity Impact Assessment study in Dibru Saikhowa National Park in association with Assam State Biodiversity Board and International Union for Conservation of Nature. As per the recommendation of the study report, OIL will develop and implement an ecosystem conservation management plan.”

Elucidating about the steps taken to restore the environment in the incident site at Baghjan, the representatives of the MoPNG/OIL India Limited submitted the following during the oral evidence:-

"....हम लोगों ने इनवारमेंट की तरफ भी कुछ इनिशिएटिव लिए हैं, जैसे आप देख सकते हैं कि ये हम लोगों ने दि इनर्जी रिसोर्स इंस्टीट्यूट के द्वारा बायो रेम्यूडेशन बागजान साइट का कराया था। पहली फीगर में आप देख सकते हैं, जब बागजान चल रहा था तब ऐसा फीगर था और आज के टाइम में रेस्टोर होने के बाद ऐसा फीगर हो गया है। इसके अलावा, हम लोगों ने कुछ इनवायरमेंटल स्टडीज भी कुछ एजेंसी से करायी थी जैसे कि थर्मल मैपिंग एंड साउंड कैरेक्टरिस्टक्स सेस्मिक एंड ज्योग्राफिकल स्टडीज इनवायरमेंट इम्पैक्ट असेसमेंट एयर क्वालिटी नॉयस लेवल सभी स्टडीज ने बोला है कि वहां पर कोई मेजर इफैक्ट बागजान एक्सीडेंट के बाद नहीं आया है।

हम लोग बागजान के आसपास के क्षेत्रों में एक बायो-डायवर्सिटीज मैनेजमेंट प्लान भी लागू कर रहे हैं जिसके लिए असम स्टेट बायोडायवर्सिटी बोर्ड को इंगेज किया गया है। इंटरनेशनल यूनियन फॉर कन्जर्वेशन ऑफ नेचर के सहयोग से किया है। इसका फील्ड सर्वे 3 से 8 अगस्त, 2021 के बीच डिब्रूगढ़ से सैखोवा नेशनल पार्क, मागुरी मोतापुंग बील में हुआ था। उसका इम्पैक्ट असेसमेंट रिपोर्ट 27 नवम्बर, 2021 से 9 दिसंबर के बीच हुआ। 25 अप्रैल से 6 मई, 2020 के बीच इको सिस्टम रिव्यू हुआ, फायर ऑडिट, एन्यायर्नमेंट ऑडिट, सरप्राइज ऑडिट आदि एक्सटर्नल एजेंसीज हैं, जैसे ओआईएसडी. डीजीएमएस हम लोगों के लिए ऑडिट करती हैं।"

### **Security Management System**

1.68 Security of its people and installation is of prime importance to OIL. Accordingly, a security policy has been approved by the top management and a SOP for Security activities has been made and reviewed from time to time. All OIL installations and field locations are deployed with security personnel as per the degree of security requirement. The Security Force comprises of Central Industrial Security Force (CISF), Assam Industrial Security Force (AISF), Assam Home Guard (AHG), OIL Security, Work Contract Labourer (WCL) & Village Defence Protection (VDP). Satellite patrolling camps are established in field locations to provide immediate security assistance. Mock drills are carried out regularly with District Administration, Neighbouring companies, CISF, NDRF and community to sensitise and bring awareness on Dos & Don'ts during an emergency situation. OIL has divided its installations in three categories on the basis of Production Impact, Threat and Local Demography, viz. (i) Vital Installations, (ii) Less Vital Installations and (iii) Non-Vital Installations.

Based on above categories, all OIL installations and field locations are deployed with security personnel as per following: (i) All vital installations are guarded either by CISF, AISF and Armed Home Guards under command of Police Neighborhood Coordination Officers (NCOs)/Special Police Officers (SPOs) or a security team without arms under command and control of SPOs. (ii) All less vital installations are guarded by team of (8/10) unarmed security personnel stationed inside the location. (iii) All non-vital installations are guarded by Home Guards/ Hired security personnel or VDP members round the clock in shift. (iv) Round the clock armed patrolling for all installations are also in place. For the Crude Oil Trunk Pipeline of OIL, Line walking, Arial Patrolling and Joint Patrolling of Pipeline RoW by OIL's personnel are done in a structured manner.

Apart from above, following security measures are adopted: (i) Satellite patrolling camps (11 Nos.) are established in field locations to provide immediate security assistance. (ii) Round the clock security control room is working for any help. (iii) Enhancement in armed security personnel. (iv) Regular liaison with District police & Civil District Administration, CRPF, IB & Army. (v) Attending Quarterly Onshore Security Coordination Committee (OSCC) meeting presided by DGP Assam Police as per schedule. (vi) Attending Monthly District Level Coordination Committee (DLCC) meeting presided by DCs. (vii) Conducting security threat drills by CISF. (viii) Security personnel Participation in mock drills at Installations. (ix) Vulnerable bridges are protected by the Home guard personnel under Assam Police Department.

OIL, in order to upgrade its Security System, is taking up following measures, which are in progress: (i) CCTVs has been recommended for all vital installation and are under various phases of implementation. (ii) Drones surveillance project for few operational area and pipeline is in process. (iii) Modernization of CISF with modern gadgets such Baggage scanner, tyre killers, smart card ID, Door Frame Metal Detector (DFMD), Handheld Metal Detector (HHMD), Night Vision Devices (NVDs) etc.

Elaborating on the Security Measures followed by Oil India, the Following submission were made during the oral evidence:

“सिक््योरिटी एक्विटीज ऑयल इंस्टालेशन सीआईएसएफ, एआईएसएफ और ऑयल सिक््योरिटी फोर्स से गार्डेड हैं। हम ऑयल ऑपरेशन एरियाज़ में ड्रोन सर्वे भी करते हैं। ऑयल फील्ड पेट्रोलिंग आम्ड फोर्स पर्सनल द्वारा की जाती है। हमारी डिस्ट्रिक्ट लॅबल कमेटी मीटिंग्स भी डिस्ट्रिक्ट और स्टेट अथारिटीज़ के साथ होती है।

हमने विलेज डिफेंस पार्टीज भी रखी है, जो पाइपलाइन की पेट्रोलिंग में सपोर्ट करती है। बागजान स्टेट के कुछ फोटोज भी हैं, रिसेंटली 7 मार्च, 2022 के चित्र हैं। इसके अलावा अबेडेट वेल्स हैं, जहां हमें तेल और गैस मिलने की कोई आशा नहीं है, इसे हम पूरा रिस्टोर कर देते हैं। आप देख सकते हैं पहले कभी यहां ड्रिलिंग हुई थी और अब पता नहीं चलेगा कि यहां ड्रिलिंग हुई थी।“

### **Upgradation of Infrastructure**

1.69 The Committee observed that the Fire Control Operations at Baghjan-5 were delayed due to non-availability of infrastructure to land the aircraft carrying the Snubbing Unit mobilize from Canada. The High Level Committee had also recommended that OIL should develop a strong Crises Management Team well equipped and trained to handle blowouts. Accordingly, the Committee made queries to the Ministry of Petroleum and Natural Gas about capacity building at OIL and strengthening of infrastructure in Assam.

1.70 When asked about the status of procurement of new equipment by OIL, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“The status of procurement estimated to cost Rs. 51 crore is as under:

<b>Sl.</b>	<b>Item Description</b>	<b>Status</b>
1	Breathing Apparatus with extra cylinder	Order Completed. Material received on 11-08-2021.
2	Fire Proximity Suit	Order Completed. Material received on 24-08-2021.
3	2000 GPM Foam Monitor (4 nos.)	Order completed. Materials received on 15.09.2021.
4	1000 GPM Foam Monitor (2 nos.)	Order completed. Materials received on 15.09.2021. Installation & Commissioning completed.
5	Hydraulic Fork Lift (Dual Drive)	Order completed. Material received on 20.09.2021. Installation & Commissioning completed.
6	1000 GPM Foam Monitor (2 nos.)	Order completed. Materials received on 24.09.2021. Installation & Commissioning completed.
7	Trailer mounted Fire Pump	Order Completed. Material received on 16-11-2021.
8	50 Tonne Hydraulic Jack	Order Completed. Material received on 24-11-2021.
9	Crawler Bulldozer	Order Completed. Material received on 28/07/2022
10	Air Compressors	Order Completed. Material received on 28-12-2021.
11	Electrification Job at CMT Yard & BOP Hanger	Job in progress. EDC 31.08.2022
12	Complete Athey Wagon with mast & undercarriage with accessories	In process. EDC 30/11/2022.
13	Fire Water Pump Unit (4000 ± 5% GPM / 15140 ± 5% LPM Diesel Engine Driven )	Delivery as per schedule. EDC : 15th February, 2023
14	250 KVA Generating Set	Material received on 30.03.2022. Installation & Commissioning completed.
15	Drilling Spool & Adapter Spools	Order Completed. Material received on 24-09-2021 & 11-10-2021
16	4" & 6" Fire Hoses with Storz Couplings	Order completed. Material Received on 11-10-2021.
17	Stainless Steel Flexible and Chicksen hose assemblies	Order completed. Material Received on 08-11-2021 & 13-12-2021.
18	Accessories for Double Ram BOP, 7.1/16" x 10M ( 7 1/16 " HCR valve Assy)	Order completed. Material Received on 02-12-2021.
19	Accessories for Double Ram BOP, 7.1/16" x 10M (Hammer Lug and companion Flange)	Order completed. Material Received on 06-01-2022.
20	Accessories for Single Ram Blow Out Preventer, 13.5/8" x 10M	Order completed. Material Received on 26-11-2021.
21	Accessories for Single Ram Blow Out Preventer, 13.5/8" x 10M	Order Completed. Material received on 26.05.2022

	(Blind Flange)	
22	Pneumatically Operated Casing Cutter	Order completed. Material Received on 17-01-2022.
23	Ultra Slim Hydraulic Torque Wrench	Order completed. Material Received on 11-03-2022.
24	Single RAM BOP (13.5/8" x 10M) & Double RAM BOP (7.1/16" x 10M)	Purchase order placed. Expected delivery date: 22/09/2022
25	BLOWOUT CONTROL SOFTWARE	Order completed. Material Received on 04-11-2021.
26	Trailer mounted Well Killing pumper unit	Purchase Order placed Delivery due on 24/06/2023
27	Drilling Simulator	Tender is in process
28	Flexible Steel Hoses for Choke Manifold	Order Completed. Material received at CMT Office on 10.06.2022 & 14.06.2022.

### **Upgradation of Airports**

1.71 When asked whether the Government had any plans to expand/modernize Guwahati and Dibrugarh airports for accommodating heavy-lift aircrafts transporting fire fighting equipment for any kind of oil and gas disasters in future, The Ministry of Petroleum and Natural Gas in its written reply submitted as under:-

“As per Ministry of Civil Aviation, Guwahati Airport is equipped to receive Code-C and D aircraft (A 320 and B737/757). The runway is capable of receiving Code E aircraft with prior intimation of 24 hours. To expand/modernize Guwahati Airport for accommodating heavy-lift aircraft transporting fire-fighting equipment has not yet been planned. As regards Dibrugarh Airport, runway has been extended by 461 m from 1829 m to 2290 m for A321 type of aircraft operations. At present, there is no plan to upgrade Dibrugarh Airport for Handling Massive Air-cargo carrier.”

1.72 When asked about whether the existing roads/airports had been strengthened and expanded to bring Snubbing Unit and other such machinery for disaster management work to oil wells/fields located in the North East, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“The runway of Dibrugarh Airport has been extended by 461 m from 1829 m to 2290 m for A321 type of aircraft operations.”

1.73 When asked about whether the Ministry had ordered any study to review the road and other infrastructure to move the disaster control/ mitigation infrastructure swiftly to remote oil fields/units the country, The Ministry of Petroleum and Natural Gas in its written reply submitted as under:-

“The Ministry has not ordered any such study.”

## **Post Blowout Training Measures**

1.74 The enquiry of the High Level Committee had found out that many of the key personnel of OIL associated with the workover operation were either not having well control certification (like OGPS official) or having well control certification on “Rotary drilling well control” from IWCF only (as well control school of OIL does not have accreditation for well intervention). The Committee had also recommended that safety trainings should be imparted not only at the entry and supervisory levels but also at the middle and senior management levels, as refresher courses.

Accordingly, on being asked whether OIL had sent any batch of officials for the advance training, the Ministry in its written reply submitted as under:-

“Since January, 2021-till date OIL has sponsored 130 employees for various advanced well control trainings in association with reputed institutes to its employees as detailed below”:-

<b>Training</b>	<b>Institute</b>	<b>Number of Participants</b>
IWCF-WELL INTERVENTION PRESSURE CONTROL	INSTITUTE OF DILLING TECHNOLOGY	34
IWCF DRILLING WELL CONTROL COURSE	PETRODRILL WELL CONTROL SCHOOL, GUWAHATI	18
IWCF ROTARY DRILLING WELL CONTROL (SURFACE)	PETROLEUM TRAINING & CONSULTANCY SERVICES, MUMBAI	1
IWCF PRACTICAL ASSESSOR CERTIFICATE	PETROLEUM TRAINING & CONSULTANCY SERVICES, MUMBAI	1
IWCF(SURFACE) WELL CONTROL	PETROLEUM TRAINING & CONSULTANCY SERVICES, MUMBAI	67
IWCF LEVEL 3: DRILLER WELL CONTROL (SURFACE)	PETROLEUM TRAINING & CONSULTANCY SERVICES, MUMBAI	4
IWCF LEVEL 4: SUPERVISOR WELL CONTROL (SURFACE)	PETROLEUM TRAINING & CONSULTANCY SERVICES, MUMBAI	2
IWCF Combined Surface and Subsea Well Control Programme	PETROLEUM TRAINING & CONSULTANCY SERVICES, MUMBAI	1
BALANCE 2 SURFACE (LEVEL-4) PRACTICAL ASSESSMENT	PETROLEUM TRAINING & CONSULTANCY SERVICES, MUMBAI	1
IWCF ROTARY DRILLING WELL CONTROL (LEVEL 4: SUPERVISOR) (SURFACE)	WELL CONTROL SCHOOL, IDT, ONGC, DEHRADUN	1
	<b>Total</b>	<b>130</b>

\* International Well Control Forum (IWCF)

1.75 The Committee sought to know whether any specific MoU had been signed with any globally well known oil company to prevent re-occurrence of Baghjan like blowouts in future to which the Ministry of Petroleum and Natural Gas in its written reply submitted as under:

“OIL floated an EOI amongst the well known global companies. Against the said EOI, interest was received from 3 parties. After evaluation of the interest received, OIL is in the process of finalizing an MoU.”

Elaborating about the steps taken to train the employees in handling blowout like incidents, the representatives of Ministry/OIL made the following submission during the oral evidence:

“ .....सर, एक महत्वपूर्ण चीज हम लोगों ने ये किया है, डीएनबी एक वर्ल्ड क्लास सेफ्टी सर्विस प्रोवाइडर है, जो हम लोगों को ड्रिलिंग एंड वर्क ओवर साइट के लिए इन्टीग्रेटेड एचएससी सर्विसेज देगा। हम लोगों ने उसे कंट्रैक्ट दिया है ताकि सारी सेफ्टी एचएससी सेफ्टी मैनेजमेंट सिस्टम के इम्प्रूवमेंट के लिए सजेशन दे। हम लोगों के कुछ महत्वपूर्ण ट्रेनिंग हैं, जो 2020-21 में करीब 4 हजार 295 थी जो अब 2021-22 में 6 हजार 740 लोगों को ट्रेन कर चुके हैं। इसमें जो महत्वपूर्ण ट्रेनिंग हैं, आईडब्ल्यूसीएफ और आईएडीसी वेल कंट्रोल ट्रेनिंग है, जो स्ट्रेशली प्लेआउट को कंट्रोल करने के लिए दी जाती है।”

“ ....हमने एक महत्वपूर्ण कदम और उठाया है। हमने आर्गनाइजेशन की रीस्ट्रिक्चरिंग की है। वेल कंफ्लिट करने के लिए दो महत्वपूर्ण काम होते हैं, एक वर्क ओवर माइन और वेल कमिशनिंग। जो ऑपरेशंस थे, वे अलग-अलग डायरेक्टर्स के अंडर आते थे, डायरेक्टर एक्सप्लोरेशन एंड डेवलपमेंट के अंडर और डायरेक्टर ऑपरेशंस के अंडर। बागजान इंसीडेंट के बाद एक अच्छा सा फ्लो बनाने के लिए एक ही डायरेक्टर के अंडर, डायरेक्टर ऑपरेशंस के अंडर आ गए हैं, जिससे वेल कंफ्लिशन एक्टिविटीज़ पर प्रॉपर कंट्रोल किया जा सके।

तीसरा मुख्य इंप्रूवमेंट हमने जो किया है, वह क्राइसिस मैनेजमेंट ग्रुप को लेकर है। हम लोगों ने क्राइसिस मैनेजमेंट ग्रुप के अंदर मैनपावर बढ़ाई है। कुछ मुख्य इक्विपमेंट्स हम लोगों ने खरीदे हैं, जिसकी कीमत करीब 50 करोड़ के आसपास है। मुख्य इक्विपमेंट्स जैसे फायर वाटर पम्प, फोम मॉनीटर्स, कॉलर बुलडोजर, हाइड्रोलिक फोर्क लिफ्ट्स आदि इसमें प्रमुख हैं। इसके बाद हम लोगों ने कुछ डिजिटल इनीशिएटिव्स भी लिये हैं। जितने भी एक्सीडेंट्स होते हैं, आजकल हम लोग उसकी ऑनलाइन रिपोर्टिंग कर रहे हैं, ताकि उसका फ्लो सब लोगों को जल्दी से जल्दी पता चल जाए। वर्क ओवर प्लानिंग जो



होती है, वह भी हम लोगों ने ऑनलाइन कर दी है। जॉब सेफ्टी एनालिसिस, पीपी रिप्लेसमेंट, डॉक्युमेंट आदि सब ऑनलाइन लेकर आ गए हैं।....”

### **Safety training to Local Community**

1.76 On being asked whether there was any plan on the part of the Ministry/OIL PSUs to impart necessary firefighting training to local communities living in vicinity of OIL and gas installations, The Ministry of Petroleum and Natural Gas in its written reply submitted as under:-

“There is no plan to impart fire-fighting training to local communities living in vicinity of oil and gas installations. However, PSUs impart fire-fighting training to its employees and contractual workforce in accordance with statutes and OISD standards. Moreover, safety awareness programmes/ campaigns are being conducted for local communities living in the vicinity of oil and gas installations and along the Right of Way (ROW) of pipeline through distribution of safety pamphlets, meetings, nukkad natak, radio jingles, screening safety films etc.

As part of Tier III mock drills carried out with Mutual Aid Partners like District Administration, National Disaster Response Force, CISF, Neighboring Industries etc. OIL sensitizes the local communities on action to be taken during disaster. Pamphlets on Do's & Don'ts during emergency drills in vernacular language is also distributed among the locals.

Additionally, OIL also imparts firefighting trainings to students & staff of schools and colleges around its operational areas.”

1.77 When asked whether there was any mechanism through which the nearby villages of oil fields/units in the country were provided with firefighting equipment and other related infrastructure, The Ministry of Petroleum and Natural Gas in its written reply submitted as under:-

“Firefighting in petroleum installation is specialized activity and performed by specially trained personnel considering the nature of product which is highly inflammable and the specialized equipment used for firefighting. Petroleum Installations are required to develop an elaborate Emergency Response & Disaster Management Plan (ERDMP) as per applicable statutes. ERDMP is also submitted to District Authority. Off-site mock drills are also conducted in association with mutual aid members, local fire brigade, police, hospitals, district administration including local community.

All OIL installations have been equipped with adequate fire-fighting equipment with corresponding fire water requirement as per statutory provisions/guidelines. Additionally, strategically located fire stations of OIL which are equipped with sophisticated fire equipment and trained firefighting staff provide aid during emergency in the installations and nearby communities at large.”

### **Shifting of OIL Corporate Office**

1.78 OIL had been asked to relocate Headquarter/Corporate office to Guwahati to increase its operational and execution capability and to have close supervision & oversight of its operation in North East. This may also help in active interaction with State Government and local community. OIL had also been asked to set up a Crisis Management Centre in collaboration with ONGC.

1.79 When The Committee enquired about the current status of shifting/relocation of the corporate office of Oil India to Guwahati, the Ministry of Petroleum and Natural Gas in its written reply submitted as under:-

“Government of Assam has allotted a plot of land in Guwahati to Oil India to set up its office. OIL has taken possession of the land in Guwahati for construction of office. The design and architectural consultancy, project management and construction supervision services have been completed. The foundation stone laying ceremony was held on 22.06.2022 in the august presence of Honourable Chief Minister of Govt. of Assam and Minister of State for Petroleum & Natural Gas & Labour and Employment, Government of India.”

1.80 When the Committee enquired as to whether ONGC and OIL had any plan to set up dedicated crisis management centre in North-East, the Ministry/OIL in its written replies submitted the following:-

“Both OIL & ONGC have their set ups in NE as crisis Management Teams and committed to work together for any such crisis. Regular coordination meetings are being held in this regard. ONGC has its own “Regional Crisis Management Team” set-up at Sivasagar, Assam Asset to cater the crisis mitigation requirement of its operation in North-East region. Apart from ONGC’s requirement, this facility also provides services to other E&P companies on call basis. The Facility is operational since year 2003 and having all Blowout Control equipment and dedicated trained manpower to deal with any oil and gas well crisis. Time to time, up gradation of equipment and training of team is also being done. This facility is also having well control equipment repair and overhauling facility.”

1.81 Explaining the steps taken by the Ministry in response to the Baghjan incident, the representatives of the Ministry of MoPNG made the following comments during the oral evidence:

“....Keeping in view the necessity to increase the operational and execution capacity, OIL had been asked to relocate corporate office to Guwahati so that it can have better supervision over the activities in the North-East and interact with the State Government and local community. The MoPNG also directed ONGC and OIL to set up a crisis management centre in the North-East. Post Baghjan incident, OIL has taken several measures....”

### **Insurance for OIL fields**

1.82 When asked by the Committee whether any insurance for oil fields against fire incidents has been taken by Oil India, the Ministry furnished the following written reply:

OIL India Ltd has the following major insurance policies to cover its assets from fire and corresponding third party liability (drilling / workover rigs, production facilities, well logging tools & equipment etc.:

Sl. No.	Policy	Sum Insured (Rs. in crore)
1	Industrial All Risk Policy (IAR)	13,451.55
2	Drilling & workover Rigs Package Policy	621.09
3	Oil & gas well drilling tools All Risk Policy	185.23
4	Public Liability Insurance (PLI) Act, 1991	*AOA 5 crore/ **AOY 15 crore
5	Public Liability Insurance (PLI) Beyond Act	AOA 11.67 crore/ AOY 35.01 crore

\*AOA= Any one Accident, \*\* AOY = Any one Year

The IAR policy covers fire insurance for all the assets in the fields. However, no specific insurance policy is taken for fire incidents in the wells. For blocks under NELP, insurance policies are taken for drilling wells as per the requirements of production Sharing Contract.

Explaining the details of insurance coverage in oil wells, the representatives of Ministry of Petroleum and Natural gas and OIL submitted the following during the oral evidence:

“ ..... इंश्योरेंस के बारे में माननीय सदस्यों ने जो प्रश्न पूछा था, उसके संबंध में मैं बताना चाहूंगा कि हमारा जितना भी इन्फ्रास्ट्रक्चर है, जैसे कि पाइप लाइन्स, प्लांट्स वगैरह पूरी तरह से इन्श्योर्ड हैं। इस हेतु करीब 13 करोड़ रुपये का इंश्योरेंस है। उसके लिए सारा प्रीमियम जाता है, लेकिन जो ऑयल वेल्स हैं, उनका इंश्योरेंस नहीं होता है, क्योंकि उनसे संबंधित दुर्घटनाएं बहुत कम होती हैं और प्रीमियम बहुत ज्यादा है। अगर हम हर साल प्रीमियम देते चले जाएं, तो प्रीमियम की कॉस्ट बहुत ज्यादा आएगी। यदि 15-20 सालों में दुर्भाग्यवश इस तरह की दुर्घटनाएं हो जाएं, तो उसके लिए हम सेल्फ इंश्योरेंस करके रखते हैं, ताकि यदि कभी ऐसी दुर्घटनाएं हो, तो खर्चा हम बियर करेंगे।....”

कुएं की हमारी प्रॉपर्टी का जो नुकसान हो रहा है, उसका इंश्योरेंस नहीं है। जिसे हम अबव सरफेस और बिलो सरफेस कहते हैं, अबव सरफेस पर तो हमारा इन्सुरेंस है, उसका तो इंश्योरेंस हो जाता है, लेकिन कुएं में जो तेल था, मान लीजिए वह नष्ट हो गया तो उसका कोई इंश्योरेंस नहीं है।

## **PART – II**

### **OBSERVATIONS / RECOMMENDATIONS**

#### **Recommendation No. 1**

##### **Need for periodic review of Safety Measures in Petroleum Sector**

The Committee note that the Indian Petroleum Sector has presence in upstream, midstream and downstream sector including onshore and offshore fields, refineries, several Gas processing plants, Liquefied Natural Gas (LNG) terminals and more than 45,000 kms of crude oil and petroleum product pipelines spread across the length and breadth of the country. The Committee also note that several Acts and Rules govern the safety of oil and gas units and the same are being enforced by agencies under different Ministries of Central and State Governments.

The Committee note that the Oil and Natural Gas Industry process highly inflammable hydro-carbons under high temperature and pressure. Therefore, any accident in the Petroleum and Natural Gas Industry can cause serious outcomes like loss of lives, disruption of activities in the surroundings, huge economic loss and also irreparable damage to the local environment. Hence, the Committee observe that Safety in petroleum sector is of utmost importance and there should be zero tolerance to accidents.

The Committee further recall that many accidents happened in the Oil and Gas sector in the country during the last few years. The Baghjan oil Well blowout in Assam in May-June, 2020, sinking of Barge P-305 in Bombay High region in the wake of cyclone Tautkae in May 2021, the blast in the pipeline of GAIL in Nagaram in Andhra Pradesh in 2014 and accident at IOCL facility in Jaipur in 2009 etc., are some of the serious incidents in the last decade for the petroleum industry in the country.

The Committee further note that the Ministry of Petroleum and Natural Gas has constituted a Working Group comprising of industry professionals, legal experts, academics, etc. to look into the whole gamut of safety framework and suggest necessary changes for petroleum sector in the country in response to the recommendations made in this regard by this Committee in their 13<sup>th</sup> Report (17<sup>th</sup> Lok Sabha).

The Committee had examined the circumstances and events leading to leakage of gas and oil condensate from Well No. 5 of Baghjan oil field situated in Tinsukia district of Assam from 27 May, 2020 which was followed by fire and blowout of oil Well on 9 June, 2020 and handling of the incident subsequently by OIL. The Committee note with concern that the disaster had happened not because of any equipment failure but due to the cumulative effect of human errors during different stages of the workover operations at Baghjan-5. The Committee further note that the disaster had happened due to gross disregard of safety regulations and practices and lack of effective monitoring of workover operations. The serious incidents which happen in the petroleum sector is a cause of concern and that lessons learnt by Oil/PSUS from one incident should prevent of other accidents and should be taken seriously by PSUs. Hence, a comprehensive review of the safety requirements for the entire oil and gas industry has become all the more desirable. The Committee, therefore, recommend that the Ministry should expedite the submission of the Report by the Working Group so that review/updation of safety framework of the petroleum sector of the country may be taken up.

#### **Recommendation No. 2**

##### **Need for promoting safety culture in OIL**

The Committee note that in the Baghjan incident, the waiting on cement (WOC) which was 48 hours was compromised by OIL and its officials instructed the crew of M/s John Energy Limited (JEL) to start pull out of the same after 12 hours only in violation of the plans. Moreover, after completion of pull out, the crew of M/s JEL started removal of Blow out preventer (BOP) to change the well head, even though the cement had not set in and there was no written instructions from OIL which severely compromised the safety of the well, and therefore, appears to be major immediate cause of the incident. The Committee further note that there were serious lapses on the part of contractor M/s JEL in the form of failure to communicate the change of plan to Installation manager, failure to take prompt action after detecting initial flow of fluid from Well, failure of key persons of the company to remain present at the rig site, poor record-

keeping by rig crew, improper BOP testing and drills, inadequate response due to lack of skilled manpower, etc.

The Committee further note that the High Level Committee which investigated the causes of the incident had observed a number of lapses on the part of OIL also at the planning, execution, organizational and training and accreditation levels. The Committee also note that though M/s JEL was the Contractor in the contract, it was actually acting under close supervision and control of OIL. The representatives of OIL had under the contract the right to observe, test, check and control implementation of workover, testing programmes, equipment and stock, inspect works performed by contractor or examine records kept at Well site by the Contractor. The representatives also had the right to give instructions to the Contractor regarding the workover programme and the Contractor was bound to comply with the same under the provisions of the contract. These lapses on the part of officials of OIL in planning and execution of workover programme at Baghjan-5 have led this Committee to conclude that the safety agencies like Directorate General of Mines Security (DGMS)/ Oil Industry Safety Directorate (OISD) should lay emphasis on strict compliance with laid down procedures for carrying out various operations. Accordingly, the Committee recommend Ministry/OIL/ Safety Agencies to put up frame work and protocol of accountability to foster and promote a strong safety culture among their officials and employees and of their contractors followed by strict enforcement and encourage them in adhering to the same.

### **Recommendation No. 3**

#### **Need for review of Standard Operating Procedures (SOPs)**

The Committee note that the High Level Committee had recommended OIL to develop comprehensive manuals for workover, drilling, production etc. as developed by E&P majors covering all operations in detail, which will be guiding document covering all operations. The Committee further note that the OIL had revised the Standard Operating Procedures (SOPs) of more than 1000 activities in the oil and gas installations. The Committee, however, note that the recommendations of the High Level Committee regarding development of comprehensive manuals for workover, drilling, production etc. have not been

complied yet. Accordingly, this Committee exhort OIL to review its Standard Operating Procedures in the light of practices of international exploration and production majors and case studies of different accidents, faults, problems etc. and develop comprehensive manuals for different operations in a time bound manner which should be periodically reviewed in the light of needs and changing scenario of the industry. The Committee further recommend the Ministry to develop a review system pertaining to safety audit observations and their compliance by all the PSUs concerned in the Safety Council meeting annually.

#### **Recommendation No. 4**

##### **Need for strict action against the Contractor**

The Committee note that the lapses and disregard of contractual obligations by the Contractor M/s JEL were major proximate reasons for the Baghjan-5 incident. The main Contractor M/s JEL was put on holiday for a period of two years. However, the contractor went to Guwahati High Court and as per its advise appeared before CGM (C&P) for personal hearing on 01.03.2021. Based on the outcome, the order for holiday/debarment was reviewed and *vide* Review Order dated 28.04.2021 the holiday period was reduced to 30.04.2021. The Committee further note that OIL imposed certain penalties on the contractor and revoked performance bank guarantee deposited against the contractor. The Committee observed that a drilling rig contract has been awarded to M/s JEL against open tender after the holiday period. The Committee note that the OIL has not utilized the terms of the contract whereby the contractor is liable to bear the entire cost and expenses of killing the Well or otherwise bringing the Well under control and also for indemnifying the company and treated the Contractor with leniency. The Committee, therefore, recommend OIL to take appropriate action against the Contractor under the provisions of the contract to make it liable for the expenses incurred by OIL in the entire incident.

## **Recommendation No. 5**

### **Need for enquiry by the Ministry**

The Committee note that three Committees constituted to enquire about Baghjan incident had found a series of lapses on the part of officials of OIL concerned with the planning and execution of workover at Baghjan-5. The Committee further note that the lapses caused great damage to the people and the environment of surrounding areas besides causing huge financial loss. The Committee further note that the crisis management of the incident could have been better. while initially 18 officials were suspended in the wake of disciplinary proceedings, two were found guilty. The Committee observe that fixing of responsibilities in this regard is grossly inadequate to the proportion of damages caused and lapses committed at procedural levels by the personnel of OIL.

The responsibility of ensuring a safe work procedure vests with Oil PSUs and they need to be accountable. The role of senior officers is more of supervisory nature but the same was missing in this case. Accordingly, this Committee recommend Ministry to institute an enquiry into lack of proper supervision and monitoring in workover programme at Baghjan-5 and fix appropriate responsibility and accountability to bring out any erring and incompetent officials of OIL.

## **Recommendation No. 6**

### **Need for observance of Environmental Laws**

The Committee note that the Justice B.P. Katakey Committee Report had found that, OIL did not have the mandatory clearances under several Acts to operate in the particular well. The Committee further note that the replies of the Ministry and OIL inform that it had mandatory consent to establish or operate under abovementioned laws on the day of the blow out of Baghjan-5 and subsequent fire on 09.06.2020. However, the Ministry have stated that OIL had obtained all mandatory statutory clearances as per the requisite applicable laws.

The Committee note that a number of licenses and approvals are required under various laws pertaining to the mining and protection of environment for exploration and extraction of oil and gas. The Committee further note that these



licenses are for a specific period and they are required to be renewed after the lapse of the same. If these were to be reviewed by Directorate General of Hydrocarbons (DGH)/Ministry of Petroleum and Natural Gas from time to time, such lapses could have been noticed. There is need to institutionalise such a mechanism. The Committee, therefore, recommend the Ministry of Petroleum and Natural Gas to take up the issue with all the PSUs and review the compliance of all applicable laws in the oil and gas fields that are currently in operation. Action taken in this regard may be intimated within three months.

### **Recommendation No.7**

#### **Self Reliance to Tackle Emergency in oil and gas Installations**

The Committee note that the safety related incidents in oil Installations can cause severe damage to the installation itself, surrounding areas etc. and with hydro carbon substances, the risk of fire is very high. Many incidents in the past have caused death of human beings, damage to property and also to environment. The Committee also observe that some of the issues faced by the petroleum sector are very unique like oil well blow out, oil spill in coastal areas, etc. These events need specialized response and many a times it is seen that international experts are engaged and certain equipment are also brought from abroad to mitigate and handle such incidents. The Committee note that in Baghjan incident, the safety equipment were mobilized from ONGC/OIL in Assam, Vadodara, Ahmedabad, etc. Finally as these were inadequate, foreign expertise from Singapore were roped in and Snubbing Unit was mobilized from Canada which indicates that the country lacks requisite equipment/technology and skilled expertise in handling such incidents.

While the upstream oil companies in the country may have crisis management teams to handle safety incidents, it is desired that the country should develop capabilities in handling well blow out control and also manufacture associated equipment in the country. The Committee desire that the Ministry and the PSUs should review the response in putting out the blow out in the oil well in Baghjan thoroughly and identify the gaps and try to address all those gaps within the country and collaborate with international agencies to

attain self reliance in these areas. The Committee, therefore, recommend that the Ministry should review the deficiencies and gaps in the safety systems required to fight safety related incidents and take necessary action to create infrastructure and skill sets to deal with them in future. The Committee may be apprised about the action taken within three months.

### **Recommendation No. 8**

#### **Need for Single Safety Agency for Petroleum Sector**

The Committee note that the Oil and Gas sector is being regulated by many agencies like Directorate General of Mines Safety (DGMS), Petroleum and Explosives Safety Organisation (PESO), Oil Industry Safety Directorate (OISD), Petroleum & Natural Gas Regulatory Board (PNGRB), Directorate General of Shipping (DGS), Fire Departments and Lifts Departments from State Governments, etc., for different activities in the petroleum sector. One of the safety enforcement agencies in the Ministry of Petroleum & Natural Gas is OISD, but it has no statutory powers as it is only a technical directorate and all its officials are on deputation. Since many agencies are performing focused and limited role in enforcing the rules and regulations under the laws mandated to them, a holistic approach is missing for the sector. Many a time the gaps in legislation is also not noticed as many regulators are busy enforcing their mandate alone.

The Committee further note that they had vide their recommendation No. 3, in their Report No. 12 (15<sup>th</sup> Lok Sabha) and recommendation No. 10, in their Report No. 24 (16<sup>th</sup> Lok Sabha) and recommendation No. 5 in their Report No. 13 (17<sup>th</sup> Lok Sabha) recommended for formation of single agency to enforce safety related rules and regulations in the petroleum sector. The Committee also note that the High Level Committee (HLC) constituted by the Government of India to enquire into the sequence of events leading to stranding of vessels and accident after the Cyclone Tauktae had also concluded that the Government consider setting up a single statutory regulator for exercising effective oversight on safety aspects of all onshore and offshore oil fields.

This Committee reiterate their earlier recommendation for a single safety agency for oil and gas sector and expect the Ministry to implement the same for

ensuring the safety culture in Oil PSUs and regulating agencies. A weak safety frame work is detrimental to not only general public but also to the oil companies. The accidents besides derailing their normal activities, lower confidence of the public and investors. Therefore, formation of a single regulatory authority for the oil and gas sector is a requirement of the time in the interest of the industry. Accordingly, this Committee again recommend to the Ministry of Petroleum & Natural Gas to undertake serious deliberations and take effective steps towards formation of single regulatory body for oil and gas industry.

### **Recommendation No. 9**

#### **Needs for advance Training of employees of OIL**

The Committee note that the High Level Committee constituted to enquire into Baghjan incident mentioned above recommended for mandatory training in Well control for all the key personnel of OIL associated with workover operations and production engineers working in Well Services section like OGPS as many of the key personnel of OIL associated with the workover operation of Baghjan-5 had not been trained in Well intervention.

The Committee further note that the Well control school of OIL had no accreditation for Well control and neither it had dedicated faculty nor it was properly equipped. The Committee also note that OIL has sponsored 130 employees for various advanced Well control trainings in association with reputed institutes since then and desire that officials of ONGC and private sector should be mandated to train their personnel. The Committee, therefore, recommend OIL to upgrade its Well training schools by equipping them well with dedicated faculty and infrastructure and to undertake the advance training in Well intervention for its remaining key employees associated with workover operations/production engineers. The Committee may also be apprised by OIL about the action taken in this regard.

## **Recommendation No. 10**

### **Restructuring HSE Management System by Oil PSU's**

The Committee note that a series of lapses at the planning and execution level caused the Baghjan-5 incident. The Committee further note that the Justice Katak Committee had observed that OIL did not have the mandatory consent to establish or operate under various environmental laws on the day of Blow out incident at of Baghjan-5 i.e. 9<sup>th</sup> June, 2020. These lapses and disregard of environmental laws have led this Committee to conclude that the monitoring from higher level functionaries of OIL was weak. The Committee desire OIL to introduce an IT-enabled system to Drilling, Workover and Production operations to ensure availability of real-time information on critical Well operations to key personnel and senior management for strengthening of Oil Well Services. Accordingly, the Committee recommend OIL to increase the frequency of meetings of Health Safety Environment (HSE) sub Committee and also strengthen its HSE management system in the light of lessons drawn from Baghjan-5 incident and other incidents in the upstream sector.

The Committee further feel that the current safety structure may need review as the HSE Officials in PSU organizations report to their top management and hence could be under pressure to allow violations / be indifferent to complete the work on time. Therefore, the Committee recommend that the Ministry/DGH and the safety agencies like OISD/DGMS to review the existing structure and implement a mechanism by which the safety functions are headed by officials from other PSUs to ensure reasonable autonomy to the safety functionaries and help in developing a strong safety culture in the organization.

## **Recommendation No. 11**

### **Strengthening of Infrastructure near Oil Installations**

The Committee note that there are many oil and gas Installations in the North East and several new projects are being undertaken. The Committee observe that North East region including Assam and Tripura has got oil and gas fields, refinery in Assam, LPG bottling plants and city gas distribution pipelines. Indradhanush Gas Grid Ltd. (IGGL) is also laying pipelines under North-Eastern Natural Gas Grid project to connect major cities across North-Eastern Region

with a gas grid to provide sufficient supply of natural gas. In this scenario, it is essential that along with energy infrastructure the associated safety, security and environment related response system should also be augmented and kept in readiness to meet any emergency. The Committee observe that during the blow out incident in 2020 in Baghjan, the snubbing units from Canada could not be landed at Guwahati Airport and had to be unloaded at Kolkata Airport which had the required infrastructure and then moved by road which caused avoidable delay. The Committee, therefore, recommend that the Ministry should do comprehensive area survey of the North-Eastern Region and map all the oil and gas fields/installations /units etc. and also the nearest road/ rail/ airport infrastructure available for handling disaster management equipment/machineries required in case of emergency and take coordinated action in association with the Ministries concerned to strengthen the aviation/rail and road infrastructure in the region.

#### **Recommendation No. 12**

##### **Emergency Response Centres**

The Committee note that the country has many industrial clusters and also in many cities like Mumbai, Vadodara, Vizag, Chennai, Kochi , Guwahati etc. oil and gas installations/Units are found to be concentrated. In addition to these installations and Units, there are several industries operating in their vicinity in these cities. The Committee observe that there was a proposal to establish Emergency Response Centres in some of these cities so as to respond to the safety incidents at short notice in and around these industrial clusters. The Committee also note that the work related to setting up of five ERCs at IOCL-Jaipur, HPCL-Vizag, BPCL-Manmad, ONGC-Hazira, and GAIL-Guna have been progressing.

The Committee observed that a similar facility is required to be set up in Guwahati too. There are several oil and gas related plants/units in and around Guwahati and therefore, the ERC can provide effective crisis management alongwith bolstering the safety infrastructure in North East region. The

Committee, therefore, recommend that Ministry should take necessary action for setting up a Emergency Response Centre in Guwahati at the earliest.

### **Recommendation No.13**

#### **Training for Local Communities**

The Committee note that the local communities near to the oil and gas fields/units/installations play an important role in the safe and secure functioning of these installations. These are the people who are likely to be affected due to the unforeseen incident/accidents that may happen in these units. So it is very important that local communities and population are made aware of the possible safety related incidents and also the response required in those situations. The Committee also observe that the local communities also step in to help the organizations to respond to the situation and support the operations.

In this regard, the Committee desire that a proper structured and formal training module particularly in fire fighting as well as rescue, first-aid and other such basic safety requirements to the local population could be of immense value and help whenever such emergencies arise. Therefore, the Committee recommend that the Ministry should persuade all the PSUs to educate and train the local communities in basic safety training requirements and also equip them with basic facilities like fire fighters and fire tenders which can be useful for both the communities and nearby towns as well in meeting the emergency requirements of the organization.

### **Recommendation no 14**

#### **Bio remediation measures in BAGHJAN site**

The Committee note that there were extensive damages to the local environment due to the Baghjan Well blow out incident . Damages to crops, tea estates and vegetation due to spillover of oil condensate were reported. The OIL took up bio remediation work immediately and appointed TERI for assessment of environmental quality namely water, soil and vegetation in and around Baghjan. The Committee note that TERI has submitted its final assesment on 28.02.2022 . A

bio diversity impact assessment was also carried out by Assam Bio diversity board. Additionally OIL carried out environmental assessment study by NABL accredited M/s ERM India Pvt Ltd and M/s TERI. The study reports don't show any deviation from prescribed environmental parameters. Further ,the Committee note that OIL is carrying out many studies for conservation management and has also signed an MOU with CPCB for green plantation, etc.

The Committee desire that OIL should complete all their assessments and carryout the necessary action without dilution of their commitments towards the environment. The Committee recommend that the Ministry should regularly review and monitor the progress made by OIL in this regard.

New Delhi;  
March, 2023  
Phalguna, 1944 (Saka)

**RAMESH BIDHURI,**  
*Chairperson,*  
*Standing Committee on*  
*Petroleum & Natural Gas.*