

Newsletter

Volume 1 | Issue 1 | June 2017



ONGC TERI Biotech Limited

The Evolution

Oil and Natural Gas Corporation Limited (ONGC) joined hands with The Energy and Resources Institute (TERI) in forming ONGC TERI Biotech Limited (OTBL) a joint venture company, with an aim to monetize the technologies developed, find sustainable solutions and provide 'green' technology services to the oil and gas sector. Initially, ONGC and TERI entered into a AMOU on 'Biotech Services' on March 22, 2006. Later the ONGC Board, in its 160th meeting, passed the resolution for formation of a Joint Venture Company with an initial Authorized Capital of '10.00 million'.

Thus, OTBL was registered on March 26, 2007, with ONGC and TERI contributing 49.98% & 48.02%, respectively in this paid up capital of company. While ONGC to extend necessary financial and commercial support and also assists in marketing of specialized services of OTBL in India

and abroad, TERI provides requisite technology-specific, also provides 'Oilzaper', microbial techniques and training to OTBL personnel and also keeps a tab on technology up gradation and introduces new technologies for field operations from time to time. ONGC and TERI transfer/ provide right to use of all technology/ know-how developed/patented in the house to OTBL.

The first project undertaken by OTBL was Microbial Enhanced Oil Recovery (MEOR), Wax Deposition Prevention (WDP), Paraffin Deposition Bacteria (PDB), which was initiated at ONGC Ahmedabad, India. After that OTBL received many projects in the field of bioremediation, wax deposition prevention, and enhanced oil recovery from stripper oil wells.



Oil Spill near WSS (Well Service Station)
• Excavation of TPH (Total Petroleum Hydrocarbon) contaminated soil for Bioremediation

In-situ and Ex-situ Bioremediation of TPH contaminated soil by OTBL

OTBL has done In-situ and Ex-situ Bioremediation of 450,000 M³ of TPH contaminated soil in oil fields of ONGC, Oil India, and many other companies in India and Middle East contraries.

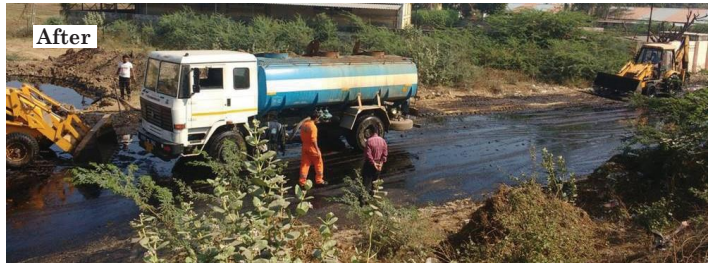
Bioremediation of TPH contaminated soil involves:

- Excavation of oil soaked soil for Bioremediation
- Transportation of TPH contaminated soil to Bioremediation site
- Construction of secured Bioremediation site for Ex-situ bioremediation
- Ex-situ Bioremediation of TPH contaminated soil in secured Bioremediation site
- Backfilling of treated soil



Bio-augmentation of TPH contaminated soil for Bioremediation at ONGC Ahmedabad

Lifting of free oil before bioremediation



Oil Spill near WSS
Recovery of liquid portion of free oil at flow line leakage point in Kalol oil field Ahmadabad Gujarat (India)

To execute the first MEOR project, OTBL started a small lab at Mehsana near Jotana Gram in Gujrat, India. This microbial lab has the facility of producing bulk microbial culture and its quality testing used by OTBL for producing microbes required for execution of MEOR, WDP, and PDB projects. Lab also utilizes centralized facility for monitoring bioremediation samples from western regions. The slurry is then transported to the well site through tankers. The field staff executes the microbial job as per work plan.

OTBL has regional offices in four major ONGC Assets across India and one regional office at Duliqjan to provide service to Oil India Ltd. Each of these OTBL regional offices has field and office staff, which monitors and executes projects on the field.



During Bioremediation Process: Application of water on TPH contaminated soil at ONGC Ahmedabad (India)



OTBL First Project MEOR Job 2007-8



OTBL Ahmedabad Office Key Employees 2016

OTBL Ahmedabad Regional Office

OTBL Ahmedabad, the first OTBL regional office, was opened in 2007. This office works as the Western regional office and monitors the project work being undertaken in Ahmedabad, Mehsana and Ankleshwar. OTBL Ahmedabad has brought and worked on the many projects in OTBL.

While In the beginning, OTBL Regional Office at Ahmedabad used to execute the entire projects of ONGC Gujarat oil field and provided technical, marketing, and monitoring support to the rest of the OTBL regional offices.

Some of these projects have been listed below:

- ◆ In-situ bioremediation at 600 well sites of ONGC Ahmedabad Asset 2007.
- ◆ Execution of 50 MEOR and WDP jobs at ONGC Ahmedabad Asset 2008.
- ◆ Bioremediation of 27,000 M³ of oil contaminated soil in secure bioremediation pit.
- ◆ Bioremediation of 36,000 M³ of oil soaked soil and restoration of 50 farmers' land in Gujarat, India.
- ◆ Constructed eight Secure Bioremediation Pits at ONGC Ahmedabad Asset.
- ◆ Cleaning of oil spills land area in the ONGC operation area including restoration of oil spilled farm land, restoration of TPH contaminated water, ponds, canals, housing colonies, and well sites waste oil pits.
- ◆ Execution of Microbial Enhanced Oil Recovery technology in oil wells of ONGC Assets.
- ◆ 2014 (10) OTBL 62 ONGC Ahmedabad NOA No. AMD/MM/ASSET/P-7/SC/24/(NOA)/2014-15 DTD, 22.12.14. Cleaning & line leakage-60227 MT, Duration-5 years.



OTBL field laboratory facility at Mehsana, Gujarat, India



OTBL field Laboratory and Execution Of Microbial enhanced oil recovery technology by OTBL ONGC Oil field

A Sneek Peek into Otbl Projects

Restoration of 600 Well Site waste oil Pits at ONGC Ahmedabad Asset

OTBL had started providing bioremediation services from 2007 onwards. During this period, ONGC Ahmedabad Asset handed over the responsibility of implementing bioremediation on 600 waste oil pits of ONGC Ahmedabad Asset well sites to OTBL. OTBL completed this huge task in 1.5 years. This work has set an example for all the other assets of ONGC to restore waste oil pits at the well sites of ONGC. At present ONGC has very less waste oil pits in field and this has only been possible only with OTBL bioremediation projects.

Restoration of 50 Farmers' Land in Navagam Area of ONGC Ahmedabad Asset

ONGC Ahmedabad Asset had a lot of oil spill area in farmers' land, especially in Area-II Navagam. This not only posed as fire and environmental hazard

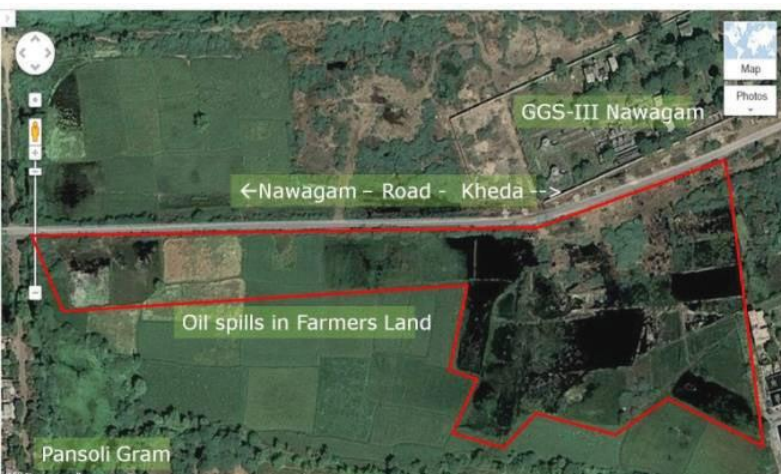
to locals but also faced resistance from locals. OTBL Ahmedabad Asset planned to restore all the farmers' land contaminated due to oil spills and bioremediation of the oil contaminated soil in a Secure Bioremediation site. In this regard, the initial survey started in 2009 and the project was finalized in 2010.

OTBL started this project 'Bioremediation of Oil Soaked Soil of 36000 M³. It was one of the biggest projects undertaken by OTBL in 2012. Around 50 farmers' land were covered in this project, mostly situated on both the sides of the road of Gram Pansoli, GGS-III Navagam. OTBL completed this bioremediation project in 30 months. The outcome of this work can be seen from Google earth where the difference of before and after restoration in the farmers' land can be clearly seen.

Oil Spill in Shivam Society Kadi 2017

This incident of oil spill occurred within a housing society and was reported during afternoon. The main road of the society was blocked due to the oil spill and some of the oil got accumulated in an open plot in the society. The OTBL team reached at site within two hours of reporting and started the cleaning work.

OTBL team cleared the main road of the society within six hours and the remaining spilled oil was collected the next day. After completion of pipe line maintenance work by ONGC, OTBL replaced the oily soil with fresh soil. This site was cleared within 3 days and the locals appreciated the work done by OTBL.



OTBL cleaning and bioremediation project can be seen in Google earth also.





Clean up of oil spill site near Narmada Canal in Gujarat, India

Oil Spill under Narmada Canal in Ahmedabad Area 2014

The Narmada Canal oil spill was reported by villagers in 2014 near Serisha Village in Gujarat, India. This oil spill occurred due to flow line ruptured this oil accidentally entered into underground tunnels, constructed to maintain the natural flow during monsoon caught fire, damaging the concrete of main canal. ONGC Ahmedabad Asset contacted OTBL for restoration and recovery.

The site was not easy to work at as the depth of the oil spilled area was around one meter. The length of the tunnel was 120 meter, below the canal (underground). Narmada Authority wanted a clean site to inspect damage and initiate repair work. The OTBL team worked meticulously for five continuous days in a row and cleared all the oily parts from the water and shifted it to nearby bioremediation site.

After OTBL successfully completed the cleaning work on both sides of the tunnel, Narmada Canal Authority started the restoration and repairing work of Narmada Main Canal.



Clean up of oil spill site near Narmada Canal Gujarat, India



Bioremediation of Oil Spill at Roadside of Ahmedabad-Mehsana Highway Road near ONGC Well Stimulation Service (WSS) office in Kalol, Gujarat, India

This oil spill happened on the road side of Ahmedabad-Mehsana Highway just in front of WSS gate. The spill occurred during optical cable laying work in the area. An 8-inch trunk line

was flowing 3-4 meter below the surface. During horizontal drilling of the cable line the oil pipe got punctured and leaking started leading to the spill and contaminated all the underground channels in the area, such as drinking water lines, sewage line, etc. After some time it appeared on the surface and the oil started spreading on the road. Due to this oil spill the approach road of Village Saij had to be blocked and the whole traffic was diverted to the

main Road. OTBL workers present at site informed the ONGC office at Ahmedabad. OTBL Ahmedabad office immediately informed about the oil spill incident to ONGC officials and arranged all the machinery for controlling the oil spill.

OTBL team immediately started working to control the oil spill, worked many days and night till the completion of work. The entire oil spill cleanup work took 5 days to complete.

Execution of WDP job at ONGC Mehsana Asset



OTBL's ACHIEVEMENTS

Projects Successfully Completed by OTBL till March 31, 2017

Services	Volume	Unit
Bioremediation	450,000	M ³
PDB Jobs	282 Wells	NO.
MeOR Jobs	97 Wells	NO.
WDP Jobs	160 km Pipeline	KM.



OTBL Head office
Darbari Seth Block, IHC Complex,
Lodhi Road, New Delhi

Green Initiative by Otbl

Environment Conservation Programme by OTBL for Gujarat Schools

Students to engage in 'Adopt a Plant' initiative with 1,500 saplings in three cities

ONGC TERI Biotech Limited (OTBL) recently launched a new educational programme called '**Protectors of the Environment**' for young school children and adults to sensitize them about and motivate them for environment conservation under its Corporate Social Responsibility (CSR) initiatives. This programme employs several tools, such as visual instruction and hands-on application and learning, has been designed in a manner so as to inspire children to translate '**thought**' into '**action**'.

The programme is being conducted in 15 underprivileged government and private schools of Ahmedabad, Ankleshwar, and Mehsana in Gujarat—an **operational area for Otbl**, and involves more than 2,000 students from class VI to IX. As part of this programme, to disseminate knowledge on the principles of sustainable development through the medium of word, TERI has specially developed books for the students to help them learn about the concepts of renewable energy, water, and waste management. As part of the programme, the students will also be undertaking a plantation drive and monitor the growth of the trees.

Designed in **three phases over a period of one year**, the major areas of activities throughout the course of the programme will be as following:

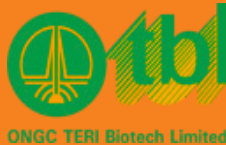
First Phase: Formation of a group of students called **Environment Protectors**, followed by establishment of a plant protector club. In the first phase the students were introduced to the 'Adopt a Plant' initiative—under which 500 saplings will be planted in each city.

Second Phase: The second phase, included interactive activities, performing arts, and project-based learning, through which environment experts addressed environment issues raised by students. The participants were sensitized and made aware of the impact of their actions on the environment and the measures to be taken by them for a cleaner environment. The plantation drive, a part of the second phase, is yet to be initiated and is only on hold due to monsoon and will begin after July.

third Phase: An impact analysis of the programme will be conducted to analyse how beneficial the programme has been for the environment. The most proactive environment protector will be applauded for their efforts **towards a Greener Planet**.

OTBL's ESTEEMED CLIENTELE

- ◆ Oil and Natural Gas Corporation Ltd (ONGC)
 - ◆ Oil India Ltd
- ◆ Numaligarh Refinery & Petrochemicals Ltd
 - ◆ Reliance Industries Ltd
- ◆ BG Exploration & Production India Ltd
- ◆ Masila Petroleum Exploration –Yemen
 - ◆ Jindal Petroleum- Georgia
 - ◆ HPCL, India
 - ◆ BPCL Mumbai



ONGC TERI Biotech Limited

CONTACT US:

Director & CEO

ONGC TERI Biotech Ltd

Darbari Seth Block, TERI

India Habitat Centre, Lodhi Road, New Delhi-110003

Tel.: +91-11-24682300, Fax: +91-11-24682144, +91-11-24682145

Email: banwaril@teri.res.in, blal@otbl.co.in, dinesh.rawat@otbl.co.in

Website: www.otbl.co.in