

Technical Feasibility Report for diversion of 29.32 ha of forestland for drilling of 12 oil & gas wells, one Central Effluent Pit and one Production Installation in Kumchai Oilfield in Ningru PML located in Changlang District in the State of Arunachal Pradesh

OIL INDIA LIMITED (OIL), a Government of India Navaratna Enterprise, is currently engaged in carrying out exploration, development and transportation activities in its operational areas in Upper Assam, Arunachal Pradesh and Mizoram in the North Eastern part of India for petroleum exploration. OIL is also undertaking hydrocarbon exploration activities in few other Indian states and few overseas countries.

Govt. of India and Arunachal Pradesh awarded Petroleum Mining Lease of Ningru PML for exploration and development of oil & gas in the area to Oil India Limited in Changlang and Namsai districts of Arunachal Pradesh.

Arunachal Pradesh lies at the country's north-eastern tip, at an altitude of around 200-300 meters in Kumchai area, to the plains of the Brahmaputra valley, surrounded by Bhutan, China and Burma. Assam lies to its south. It is a state with regions of different levels of elevation namely Upper Himalayas, Middle Himalayas, Sub Himalayas and the plains region. The climate of each region depends on its elevations. Areas with very high elevation get a cold climate. Middle Himalayas gets a temperate climate, where fruits like apples, oranges are grown. Areas at the sub-Himalayan and sea-level elevation experience a typical sub-continental climate, with hot summer and mild winter.

1.0 PROPOSED LOCATIONS IN KUMCHAI OILFIELD AREA UNDER NAMPONG FOREST DIVISION, JAIRAMPUR IN CHANGLANG DISTRICT OF ARUNACHAL PRADESH

In Principle Forest Clearance Approval for drilling of 7 wells and establishing one Central Effluent Pit (CEP) involving 29.32 ha of forestland was obtained in the year 1992 in Kumchai oilfield of Ningru PML area. However, the proposal was revoked in the year 2001. On re-grant of Ningru PML by the State Govt. of Arunachal Pradesh, OIL applied for revival of the referred revoked proposal vide application dated 14.12.2018 with additional proposal of drilling wells and setting up of a Production installation in the referred 7 drilling well plinths. The details of the proposed drilling wells/Production Installation/Central Effluent Pit are as under

Location Co-ordinates

Sl. No.	Plinth Area	Locations/Installation	Latitude	Longitude
1	KUZ	Drilling of Well- KUZ with additional Loc- K	27°34'29.46"N	96° 3'29.74"E
2	KUX	Drilling of well- KUX with additional Loc- D	27°34'13.95"N	96° 3'10.84"E
3	KUAC	Drilling of well-KUAC	27°34'1.61"N	96° 3'3.09"E
4	KUAE	Drilling of well- KUAE with additional Loc X	27°33'58.83"N	96° 2'59.94"E

5	KUAG	Drilling of well-KUAG with additional wells Loc-C & Loc-Q	27°33'41.16"N	96° 2'29.64"E
6	KUR	Drilling of well KUR with one Production Installation set up (Instl-3)	27°33'42.56"N	96° 1'58.91"E
7	KUAJ	Drilling of well-KUAJ	27°33'11.31"N	96° 2'3.32"E
8	CEP	For setting up of CEP	27°33'0.41"N	96° 1'33.46"E

2.0 TECHNICAL FEASIBILITY FOR THE LOCATIONS OF KUMCHAI AREA:

Geo-scientific works carried out in the Area:

Kumchai structure was first identified during the interpretation of single fold seismic data in the year 1964-66. Thereafter, different vintage of seismic data with varying foldage were acquired (12 fold, 48 fold CDP) up to 1989. On the basis of available 2D seismic data, the Kumchai structure was interpreted as a four way anticlinal closure with highest part near to the drilled wells of KMC-1 and KMC-2. In June 1989, study for development of the field was carried out with a proposal for twenty one (21) development/extension locations. Following this, periodic review of the area was carried out with specific objectives. A total of fifteen (15) locations were drilled up to 2019. The review of the pressure-production behavior of the area was carried out in 2008-2009. The first 3D seismic data (Kherem-Kumchai 3D) in the field was acquired during 2006-2008 covering an area of around 146.11 sq km. A detailed review for development of the area was carried out in May, 2011. In Nov' 2011, a review of Kherem-Kumchai area based on 3D seismic (Kherem-Kumchai 3D) data for generation of exploratory locations within Girujan and Tipam Formations was carried out. In March 2018, a review of the Kumchai Girujan Sand reservoirs was carried out using Kherem-Kumchai 3D seismic data for generation of extension/development locations. Again, a recent study has been carried out in FY 2019-20 for extensive development drilling campaign and ten (10) new locations have been released by the competent authority.

Geophysical Survey:

2D and 3D seismic activities were extensively carried out in Kumchai area. The proposed locations fall under Kherem-Kumchai 3D. Continuous effort to enhance data quality is made for better understanding of the subsurface geology of the area.

Exploratory Drilling:

First exploratory well was drilled in Kumchai area at Well No. Kumchai-1 in 1977 with TD 5450 m but due to abnormally high pressures and related downhole problems the well was abandoned. A number of hydrocarbon bearing sand ranges were encountered within the Girujan Formation. Subsequently, 14 wells were drilled in this Ningru area of Arunachal Pradesh. Most of the wells were successful with multistack reservoirs in Girujan Formation.

Technical Assessment:

Kumchai area is a highly prospective area from oil and gas production point of view. The field is mainly producing from lenticular Girujan sands. It has been contributing to the state economy since early eighties with the current average crude oil production of 80 KLPD and gas 158000 SCUMPD. So far the oilfield under Ningru PML has produced 0.95 MMSKL crude oil and 0.74 BCM gas. It is expected that the new exploratory wells will add more avenues of oil/gas with further drilling in this area.

Stratigraphy of the Kumchai area:

The expected Stratigraphy within the block could be as follows:

AGE	FORMATION	LITHOLOGICAL DESCRIPTION
Mio-Pliocene	Alluvium /Dhekiajuli	Alluvium/Dhekiajuli clay/sand
	Namsang	Sand/Clay
Miocene	Girujan	Girujan Clay
	Tipam	Tipam Sandstone

Operational Feasibility for Drilling of the Proposed Locations:

The identified Locations fall entirely in and around Kumchai oilfield. NH-15 is the most prominent road in the region. The proposed locations are at a distance of about 25 km from NH-15. The locations can be accessed from Namsai town (NH-15) through Namsai-Piyong-Diyun Road.

Production facility is already there at Kumchai EPS and has been planned to augment the handling capacity of more crude oil and gas. Moreover, the existing pipeline (Kumchai-Bordumsa) has been permitted for extension about 61 km by State Government recently upto Digboi area. Both oil and gas pipelines are sanctioned at both State level of Assam and Arunachal Pradesh where Civil survey has already been completed.

The nearest airport from the proposed locations is Tezu airport of Tezu, Arunachal Pradesh at a distance of about 73 km. However, Dibrugarh Airport (Assam) is 134 km away and well connected daily to all parts of India. Nearest long distance Railway station is Tinsukia, Assam around 93 km from the locations.

Road maps

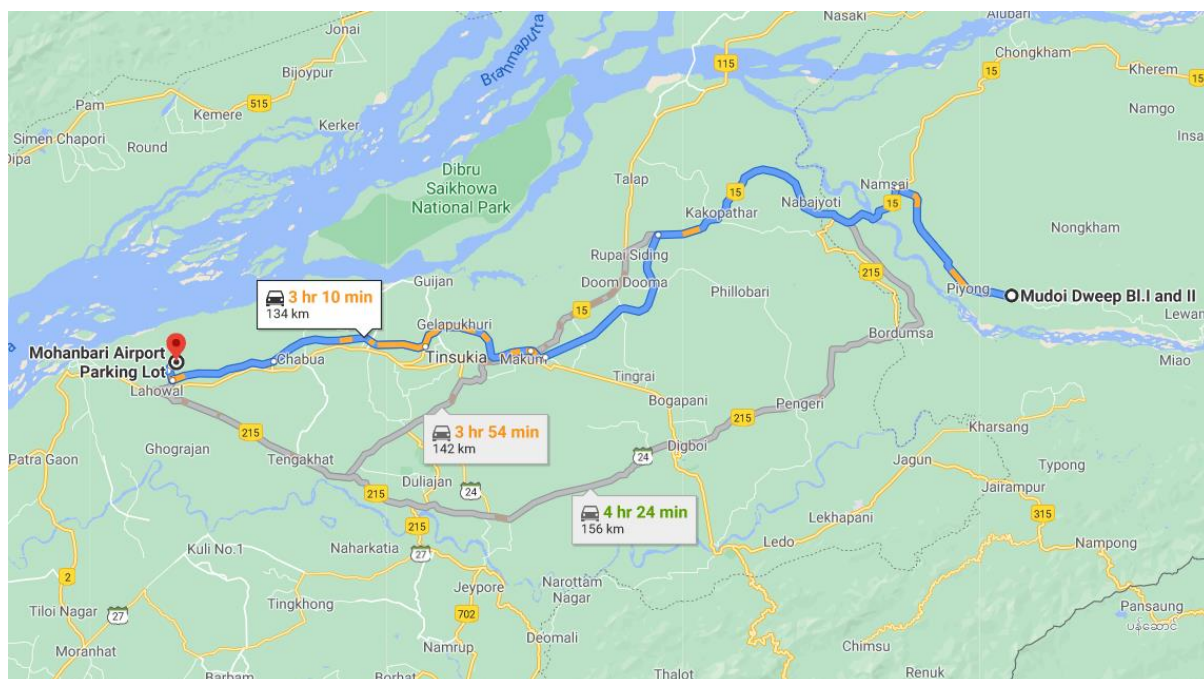


Figure: Road map of proposed locations to Airports Dibrugarh.

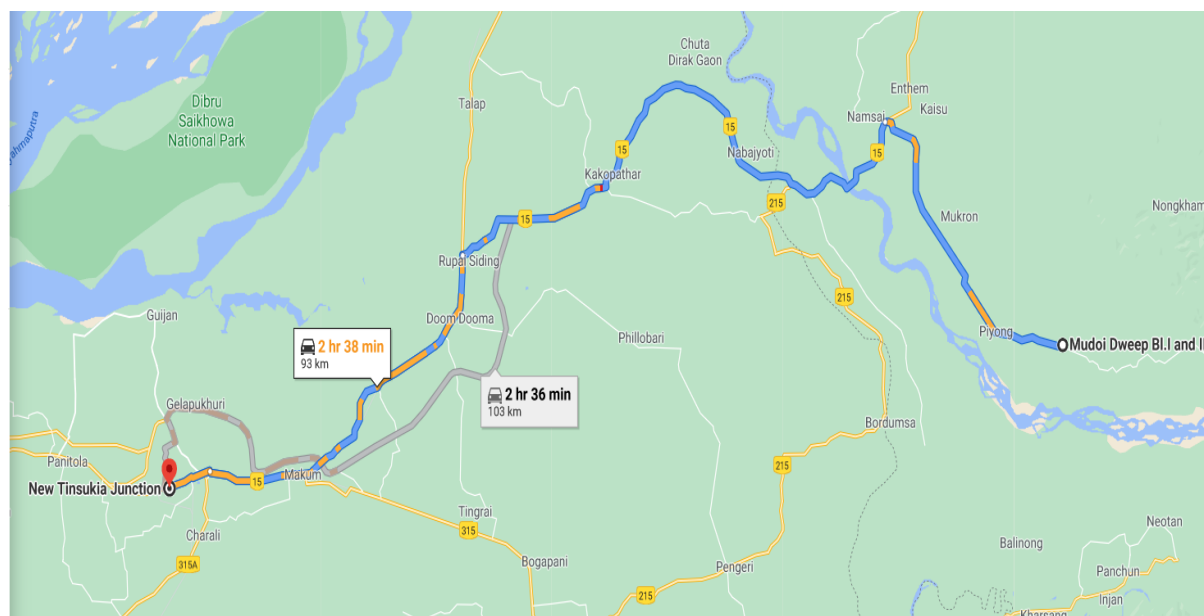


Figure: Road map of proposed locations to Tinsukia Railway Station.

Accessibility to the proposed locations:

Motorable road is available from Inao Tinali to access the Kumchai oilfield. Approach roads will be constructed to this road from seven (7) plinths and one central effluent pit and may require further re-enforcement prior to preparation of plinth area and carrying out of operational activities.

Economic Feasibility:

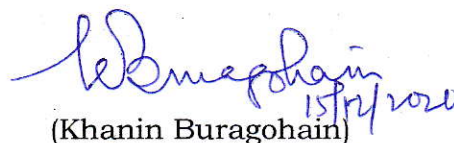
Block being located in the petroliferous basin of Upper Assam Shelf, all sub surface geological conditions necessary for generation of hydrocarbons are present in the area as evidenced from the existing nearby oil producing wells in Kumchai fields.

Expected royalty is around 15 crore to the State economy per year from these seven wells. Resources pertaining to the extended area will additionally enhance the quantum of entire field.

The estimated expenditure for completing each well is around ₹ 40 Crore. Based on the preliminary technical study with available geoscientific data & operational feasibility, OIL expects that the completion of new wells in Kumchai area to offer a tenable cost- benefit scenario for carrying out the exploration activities.

Production of oil/ gas will help in meeting energy needs of the country and will lead directly to socio-economic development of the area and its vicinity as a whole.

Yours truly,
OIL INDIA LIMITED


(Khanin Buragohain)
DGM & Block Manager

Date: 15.12.2020
Place : Duliajan