1.0 INTRODUCTION

M/s NRL is located near Numaligarh Town, which falls under Morangi Block, Bokakhat Sub-division of Golaghat district in the state of Assam. Numaligarh Refinery Limited (NRL) was incorporated on 22nd April 1993 and designed to process 3 MMTPA low sulphur indigenous crude oil produced from Upper Assam oil fields by adopting state-of-art technologies. Its requirement for crude is being fulfilled from the oil fields of ONGC and Oil India Limited (OIL). The refinery comprises of Crude Distillation Unit (CDU), Vacuum Distillation Unit (VDU), Hydro Cracker Unit (HCU), Delayed Coke Unit (DCU), Hydrogen Unit (H_2U), Motor Spirit Unit (MSU), Sulphur Recovery Unit (SRU) and a Coke Calcination Unit (CCU). NRL produces three types of end products namely Light Distillates, Middle Distillates and Heavy Ends. The main products under Light Distillates are Liquefied Petroleum Gas (LPG), Naphtha, MS BS-II and MS E-III, under Middle Distillates the main products are Superior Kerosene Oil (SKO), Aviation Turbine Fuel (ATF), High Speed Diesel (HSD) BS-II, HSD E-III and under Heavy Ends, the main products are Raw Petroleum Coke (RPC) and Sulphur. M/s NRL has also implemented its own Marketing Terminal. The Refinery and the Marketing Terminals are operated by fully automated systems. The products are supplied to various destinations like north-eastern states, eastern and northern regions of the country through pipeline, road and rail. With the commissioning of Numaligarh Refinery, the demand for major petroleum products has also moved out to other parts of the country. NRL's Special Winter Grade Diesel has already made inroads into the Kingdom of Bhutan. Efforts are being made for export of NRL products to geographically contiguous countries like Bangladesh and Myanmar which are logistically easy to access from NRL through road, rail and river route.

NRL is having excellent track record and progressive outlook in regularly upgrading its technology as well as undertaking expansion programmes. It has pursued a proactive environmental management policy and has established an environmental management system, in recognition of which, it has received a number of prestigious awards. With its concern, commitment and contribution to socio-economic development of the state combined with a track record of continuous growth, it has

been conferred the status of Mini Ratna PSU. The company enjoys track record of excellent performance in terms of production, financial results, energy conservation, safety and environmental protection.

In recognition of its endeavour towards protecting and caring for the environment, NRL has bagged a number of prestigious awards. Some of the prestigious awards may be mentioned as under:

- First prize of TERI Corporate Environmental Excellence Awards 2008 consecutively for second year in recognition of its leadership efforts towards Environment Management.
- BPCL Chairman's Appreciation Award 2008 in Green Category.
- Second prize of National Energy Conservation Awards 2008 from Bureau of Energy Efficiency under Ministry of Power.
- Second prize of Oil & Gas Conservation Awards 2008 in the category of Furnace & Boiler Efficiency.
- Second prize in the Refineries category of the prestigious Oil Industry Safety Awards for the year 2007-08.
- The "Shreshtha Suraksha Puraskar 2007 instituted by National Safety Council.
- Third prize of Jawahar Lal Nehru Centenary Awards for Energy Performance of Refineries having composite energy factor >5 for the year 2007-08.

1.1 EXISTING FACILITIES

The refinery produces different petroleum products, especially domestic and automobile fuels such as LPG, Naphtha, ATF, SKO, BS-II Grade HSD, Euro-III Grade HSD, RPC and elemental sulphur as by-product.

In order to value addition for currently available surplus Naphtha as well as to meet the market demand of MS in North-eastern, Eastern and Northern regions, the Motor Spirit Plant (MSP) consisting of three main units viz., Naphtha Hydrotreater (NHTU), Catalytic Reforming Unit (CRU) and Isomerization Unit, have been successfully commissioned to produce the BS-III and Euro-III grade of MS. Manufacture of MS production was undertaken also at the existing refinery premises by blending naphtha with various components. The main existing units of NRL are as under:

Units		Capacity
Crude Distillation Unit (CDU)	:	3.00 MMTPA
Vacuum Distillation Unit (VDU)	:	1.32 MMTPA
Delayed Coke Unit (DCU)`	:	0.306 MMTPA
Hydro Cracker Unit (HCU)	:	1.10 MMTPA
Hydrogen Generation Unit (H2U)	:	38000 TPA
Motor Spirit Unit (MSP)	:	225 TPA
Coke Calcination Unit (CCU)	:	0.104 MMTPA
Sulphur Recovery Unit (SRU)	:	4000 TPA

Besides these, the offsite facilities available with the refinery are Captive Power Plant (CPP), Raw Water Treatment Plant (RWTP), Effluent Treatment Plant (ETP), Flare System, Plant/Instrument Air, Cooling Water, DM Water, Fire Water System and Tank Farm for storage of crude and intermediate/ finished products.

1.2 PROPOSED PROJECT

The proposal relates to supply of 160 TMTPA of petroleum grade naphtha to M/s Bramhaputra Cracker & Polymer Limited (BCPL) as feedstock as per directive of Ministry. The Naphtha splitter unit (NSU) was incorporated in the original design package with an objective to produce Reformer feed Naphtha from full range Naphtha ex CDU within the CDU/VDU unit area. As per the agreement with M/s Brahmaputra Crackers & Polymers Limited (BCPL), NRL is committed to supply 160 TMTPA of petrochemical grade naphtha to M/s BCPL as feedstock.

1.3 OBJECTIVE OF EIA STUDY

The main objective of the study is to know the baseline status of all the environmental attributes in the study area of 10 Km radius around the proposed NS Project site in order to identify the critical attributes of the environment and predict the impact of the proposed project in the environment. Accordingly, mitigation measures shall be suggested for implementation by the project proponent to save and improve the environment. The study addresses the requirements as well as information sought by the ministry vide their letter ref. no. J-11011/534/2009-IA-II(I) dated 09-11-2009, Govt. of India, Ministry of Environment & Forests (IA Division), Paryavaran Bhawan, CGO Complex, Lodi Road, New Delhi - 110003.

Based on the presentation made by the project proponent during finalization of TOR, seasonal data collected during December'07-February'08 for Diesel Quality Up-gradation project (DQUP) is used for EIA study

1.4 PROJECT LOCATION

1.4.1 Project Location

The proposed project will be located within the battery limit of existing CDU/VDU Unit area of NRL, where sufficient land and other common infrastructure facilities are readily available.

The details of the location of the proposed Naphtha Cracker Unit (NCU) would be as follows – the existing Delayed Coker Unit (DCU) at the east, Hydro Cracker Unit (HCU) at the west, substation and central control room at the south and tank farm area at the north.

The NRL complex is located near Numaligarh Town of Morangi Block under Bokakhat Sub-division of Golaghat district of Assam. The site is located at longitude 93°47'22.58" E and latitude 26°34'53.01" N. Physiographically, the site & surroundings show a monotonous plain topography towards north and south-east, while the south-western part of the area represents an undulating topography. There is no major town or industrial establishment within 10-kms. The Golaghat town, which is the district headquarter is located in east-south-eastern direction at a distance of about 26-kms. National Highway, NH-37 which connects Numaligarh to Guwahati in north-western direction is passing at a distance of about 11-kms whereas NH-39 is passing adjacent to the refinery. The nearest airport Jorhat is located at a road distance of about 68-kms in eastern direction. The location of NRL Complex in the study area has been presented in Plate - 1.1.

1.4.2 Justification of the Project

- The proposed NS project shall be located within the existing premises of NRL and within the battery limit of CDU and VDU.

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- The additional power requirement of 200 KW for the proposed NS project and would be met through the existing CPP comprising of two GT Sets of 30 MW capacity each, which are adequate to take care of the proposed project.
- Additional water requirement for the proposed project is estimated less than 5 m^3/hr. Present average water requirement is around 600–700 m^3/hr against the permissible limit of 1200 m^3/hr. The existing infrastructure for water supply is adequate to meet the additional requirements.

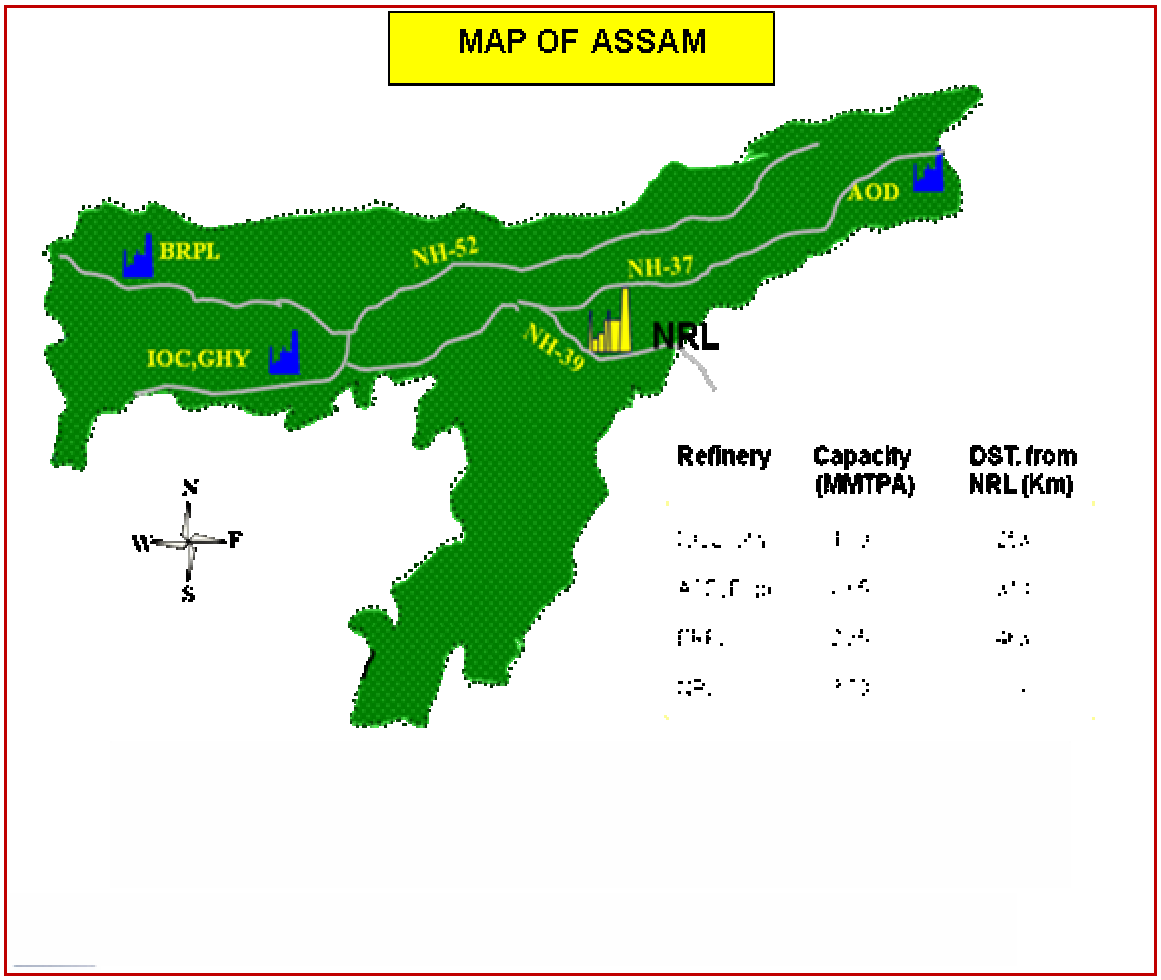

Plate – 1.1
Location Map

PLATE-1.2
SITE & SURROUNDINGS OF THE STUDY AREA