

OIL INDIA LIMITED
(A Government of India Enterprise)
P.O. Duliajan, Pin – 786602
Dist-Dibrugarh, Assam

Corrigendum No. 2 dated 06.05.2020 to E-Tender No. CDG4164P21 for hiring services for acquisition of 200 LKM of 2D and 185 SQKM of 3D seismic data in the OALP-III Block: AA-ONHP-2018/5 and its adjoining areas in the state of Tripura.

This Corrigendum is issued to notify the following changes/additions:

1. Clause No. 3.1.2.6 of Part-2 (Bid Evaluation Criteria) should be read as below
(Correction in BEC clause due to typographical error, cross reference and clarity):

Foreign Bidders: Bidder(s) shall have experience mentioned in clause 3.1.2.1, 3.1.2.2, 3.1.2.3, 3.1.2.4 and 3.1.2.5 out of which the Bidder(s) must have successfully carried out a minimum of **100 LKM of onshore 2D Seismic Data Acquisition and 92.5 SQKM of onshore 3D seismic data acquisition OR 142.5 SQKM of onshore 3D seismic data acquisition** in two countries other than the country of origin in the last **Seven (07)** years as preceding the date of Original Bid Closing.

OR

Bidder (s) shall have experience mentioned in clause 3.1.2.1, 3.1.2.2, 3.1.2.3, 3.1.2.4 and 3.1.2.5, out of which the Bidder(s) must have successfully carried out a minimum of **100LKM of onshore 2D seismic data acquisition and 92.5 SQKM of Onshore 3D Seismic Data Acquisition OR 142.5 SQKM of onshore 3D seismic data acquisition** in a single survey block in India in the last Seven (07) years as preceding the date of Original Bid Closing.
2. Clause No. 3.1.3 of Part-2 (Bid Evaluation Criteria) should be read as below
(Correction in BEC clause due to typographical error, cross reference and clarity):

Indian Company/Indian Joint Venture Company as bidder: Either the Indian Company/Indian Joint Venture Company or its Technical Collaborator must meet the criteria under clause 3.1.2 above. [In case the Collaborator(s) is/are of foreign origin, they have to meet the experience criteria set in clause 3.1.2.6 and 3.1.2.7 above in addition to others, otherwise the same is exempted for Indian JV Partner(s)/Collaborator(s)].
3. Clause No. 5.2.1 of Part-3 Section –II (Scope of Work/ Terms of Reference/ Technical Specifications/ Special Conditions of Contract) should be read as below:

Data Acquisition Strategy: Bidder shall deploy minimum one (1) set of seismic crew to accomplish the above mentioned jobs in 14 (fourteen) operating months. At least one (1) no. of crew has to be deployed in the block to complete the data acquisition in the stipulated time. The area demarcated as **South Tripura Block** is shown as **Fig.1**. Shot hole drilling is the major challenges to achieve good production and quality data. The tentative Seismic data acquisition period (Field Season for 2D is 2020-21 and for 3D is 2020-21 and 2021-22). Bidder shall deploy adequate nos. of drilling rigs of advanced technology in the field to maintain the desired daily average production towards timely completion of the survey **as per Clause 2.11 of Part-3 Section-II**. The survey acquisition geometry & survey design for **South Tripura block** is given in **Table-2 and Table-3**.
4. Clause No. 17.18 of Part-3 Section –II (Scope of Work/ Terms of Reference/ Technical Specifications/ Special Conditions of Contract) should be read as below:

The Bidder's personnel must be sound enough to provide the above services in international standard, failing which Company reserves the right to ask for removal of any Bidder's personnel(except key personnel) within 24 hours notice and in case of key personnel within 4 (four) days issue of notice. The formulae for calculation of LKM mentioned in Clause 2.0 of Part-3 Section-III (Schedule of Rates) should be read as below:

- a. The formula for calculation of LKM for any incomplete line is hereunder,

$$\text{Calculation of LKM} = \frac{\text{No. of accepted shots taken} \times 50 \text{ m}}{1000 \text{ m}}$$

- b. The formula for calculation of LKM for any complete line & payment as per plan is hereunder,

$$\text{Calculation of LKM} = \frac{(\text{No. of accepted shots taken} - 1) \times 50 \text{ m}}{1000 \text{ m}}$$

5. Following sub-clause should be read as part of Clause No. 5.7 of Part-3 Section –II (Scope of Work/ Terms of Reference/ Technical Specifications/ Special Conditions of Contract):

- m) The Uphole / LVL survey is expected to start within 90 days from the date of issue of LOA [after obtaining requisite statutory work approvals / permits from the Government authorities] , as and when necessary even if the period / time falls in monsoon season. Coordinates of Uphole / LVL will be provided to the successful bidder before starting of this survey. All equipment required for LVL/uphole survey will be certified by the company representative before commencing LVL/uphole survey. However, first invoice of completed LVL / uphole survey will be processed along with first invoice raised against mobilisation /actual seismic production.

6. The revised **Appendix-I** (Page 126 of 144) should be read as enclosed herewith.

7. Note (iii) of **Annexure-I** should be read as below:

The bidder who do not meet the technical experience criteria on their own and are bidding on the strength of Technical collaborator/Joint venture/consortium/parent/subsidiary company must deploy the key personnel viz. QC Processing Geophysicist, Seismologist & Observer from their technical counterpart for the entire duration of contract.

8. The revised **Annexure-II** (Page 132-134 of 144) should be read as enclosed herewith.

9. The revised **Checklist-I** (Page 135-138 of 144) should be read as enclosed herewith.

10. Bidders may refer to **Figure1** (Proposed 2D Block AA-ONHP-2018/5) and **Forest Cover Map** of the Block enclosed herewith.
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Specifications of Analog geophone strings:

Low distortion high sensitivity geophone string with following specifications:

Sl.No.	Parameters	Values
1	Sensitivity	120-170V/m/sec
2	Distortion	<0.2%
3	Natural Frequency	Upto 10 Hz
4	Tilt	0to15°
5	Spurious Frequency	>240Hz
6	Operating Temperature	Upto90°C
7	Polarity	SEG standard

The likely products are Sercel SG-10/Sensor SM24HS/Equivalents.

EQUIPMENT FOR 2D SEISMIC DATA ACQUISITION

The equipment to be deployed by the Bidder for the survey must be state-of-the-art and conform to international industry standards.

DESCRIPTION:

A. **SURVEY EQUIPMENT:** Not more than four (4) years old as on the date of publication of NIT.

- * DGPS (RTK) Units capable of operating in L1 & L2 modes with required accessories and software in adequate quantity.
- * Total Stations with data loggers, accessories and survey software in adequate quantity.

B. **SEISMIC RECORDING SYSTEM:** Not more than four (4) years old as on the date of publication of NIT. The equipment must be in perfect working condition. The number of remote field units/ recording equipment and cables and geophones to be deployed must be adequate to achieve a required production to complete the project/work within the stipulated time frame. The recording equipment must be:

- * Seismic Data Recording System – Telemetry System with 24-bit $\Delta\Sigma$ Technology
- * 24 bit recorder and correlator/stacker.
- * Minimum 10,000 channels capability at 2 ms sampling.
- * Seismic Data Acquisition System with real time QC Monitoring of recorded data. OIL will QC the acquired Shot gathers on daily basis post completion of each day recording operation.
- * The time break delay between Radio Shooting system (Confirmed & predicted TB) shall be less than 1 millisecond (ms).
- * Sufficient Accessories, Encoder/Decoder, Sufficient Remote Units, Interconnect boxes etc.

Geophone: Offered Geophone must be SM24/ SG-10 OR equivalent OR better. The offered Geophones must be fully compatible with seismic data acquisition system. The No. of geophones per station (string) must be 12 (twelve) and industry standard spike length. In case of Analog Geophone, the configuration must be: 6 x 2 [(6 in Series and two (2) such series in parallel)]. The response of Geophones/nodes with external geophone/ nodes with built in sensor should be as per specifications of OEM.

- * Cables and Geophones: Not more than three (3) year old as on the date of NIT.

C. **LVL/UP-HOLE SURVEY EQUIPMENT:** Not more than four (4) years old as on the date of publication of NIT.

- * 24 channel digital recorder with 0.1 ms sampling interval.
- * Cables for 300 m offset with 10 m take-outs. The cables must meet manufacturer's specifications.

- * Refraction Geophone 4.5 Hz. The Geophones must meet manufacturer's specifications.
- * Uphole Survey Digital Recorder with a minimum of 4 channels and down hole cable, hydrophone/geophones suitable for logging to 100 m weight drop/explosive as source.
- * Bidder shall deploy 2 nos. of equipments (one is for LVL and other for Up-hole survey).

D. COMPUTING: Stand-alone workstations with adequate RAM, disk-space for the following software packages – All the hardware shall not be more than three (3) years old as on the date of NIT & must be in perfect working condition along with all necessary software which the bidder proposes to use.

- * Survey data management & processing.
- * 2D/3D field management/planning.
- * 2D/3D survey simulation (OMNI/MESA or equivalent).
- * LVL/Uphole data processing and interpretation.

Bidder shall deploy minimum 4 (four) nos. of standalone workstations for above mentioned softwares.

All the workstations need shall have facility to be connected to colour plotter, A3 size multi-functional printers and IBM 3592/DVD/LTO-5 cartridge drive for back-ups and any other facilities required to control the quality of survey and to provide the technical inputs required by Company.

E. EQUIPMENT FOR FIELD 2D DATA PROCESSING:

The Field Processing Software with latest version (Seismic Processing packages along with version, date of release) with suitable hardware - not more than three (3) years old (software) as on the date of publication of NIT.

The field processing software must be capable of processing 2D/3D Seismic Data upto Pre-Stack Time Migration. The processing software must be covered under maintenance for the entire duration of the tender with OIL

The workstation needs to be connected to colour plotter, line printers and IBM 3592/DVD/DLT/LTO-5 cartridge drives for back-ups and any other facilities required to control the quality of survey and to provide the technical inputs required by Company.

The hardware, ancillary equipment viz. Printers, Plotters, Tape Drives, Networking etc. shall not be more than three (3) years old as on the date of NIT and must be in perfect working condition.

F. COMMUNICATION EQUIPMENT:

Communication equipment to be provided including walkie-talkies, VHF radios, SSB radios, sufficient for the project and the units must meet the manufacturer's specifications.

G. TRANSPORT:

The bidder has to decide and bring requisite quantity of specialized transport for crew, explosive vans and jeeps for explosive movement, Instrument van to carry out seismic survey in areas as described in Section-II. All the available indigenous transport has to be arranged by the bidder, locally. All the transports must be in perfect working condition and meet all the desired specification including insurance and the requisite licenses for the purpose of use. All the vehicles must be equipped with all seat belts, First Aid Kit, Spare wheel, fire-extinguisher etc.

H. Shot-hole Drilling Rigs:

Bidder shall deploy adequate mechanized drilling rigs as described in Scope of Works, Part-III, Section-II to drill the shot holes in the areas.

Note:

1. All the equipment as mentioned in the Annexure-II must meet or exceed the required specifications mentioned.
2. The Bidder has to submit the documentary evidence in support of the Vintage of the Equipment which bidder proposes to deploy in the field for the execution of the tender. Bids shall be rejected if the equipment and the key personnel offered do not meet the specified requirement.
3. The Bidder may mobilize additional crew and equipment at no extra cost to the Company for increasing the productivity to improve upon the work completion time, to which the Company shall have no objection.
4. Bidder must fill-up and submit the Check List-1

Check list - 1

**EQUIPMENT AND ACCESSORIES TO BE DEPLOYED FOR 2D
AND 3D SEISMIC SURVEY FOR THE BLOCK: AA-ONHP-
2018/5 AND ITS ADJOINING AREAS**

Sl. No.	NIT Criteria	Block: AA-ONHP-2018/5 and its adjoining areas		
		Equipment (Make, Model & Vintage)	Quantity	Supporting Documents with file and page references of uploaded documents
A	SURVEY EQUIPMENT: The survey equipment shall not be more than four (4) years old as on the date of NIT and must be in perfect working conditions.			
	DGPS (RTK) Units capable of operating in L1 & L2 modes with required accessories and software in adequate quantity.			
	Total Stations with data loggers, accessories and survey software in adequate quantity.			
B	SEISMIC DATA RECORDING EQUIPMENT: Seismic Recording Systems shall not be more than four (4) years old as on the date of NIT. The equipment must be in perfect working condition. The number of remote field units/recording equipment, to be deployed must be adequate to have the capability of sufficient roll over for recording of requisite number of shots per day to complete the project within the stipulated time frame. The recording equipment must be:			
	Seismic Data Recording System–State of the art Acquisition System with 24-bit $\Delta\Sigma$ Technology.			
	Recording capability of minimum 10000 channels at 2 ms sampling per shot.			
	Sufficient, Accessories, Encoder/Decoder, etc.			
	Bidder has to deploy Seismic Data Acquisition System with real time QC Monitoring of recorded data. OIL will QC the acquired Shot gathers on daily basis post completion of each day recording operation.			
	The time break delay between Radio Shooting system (Confirmed & predicted TB) shall be less than 1 millisecond (ms).			
	GEOPHONES: Geophones and Cables shall not be more than three (3) years old as on the date of NIT.			
	Geophone: Contractor should use Geophones which must be industry standard. The response of Geophones should be as per specifications of OEM.			
	Offered Geophone must be industry standard, viz; SM24/SG-10 or equivalent or better in case of High Performance Low Distortion analogue geophones.			
	The offered Geophones must be fully compatible with seismic data acquisition system along with necessary interface.			

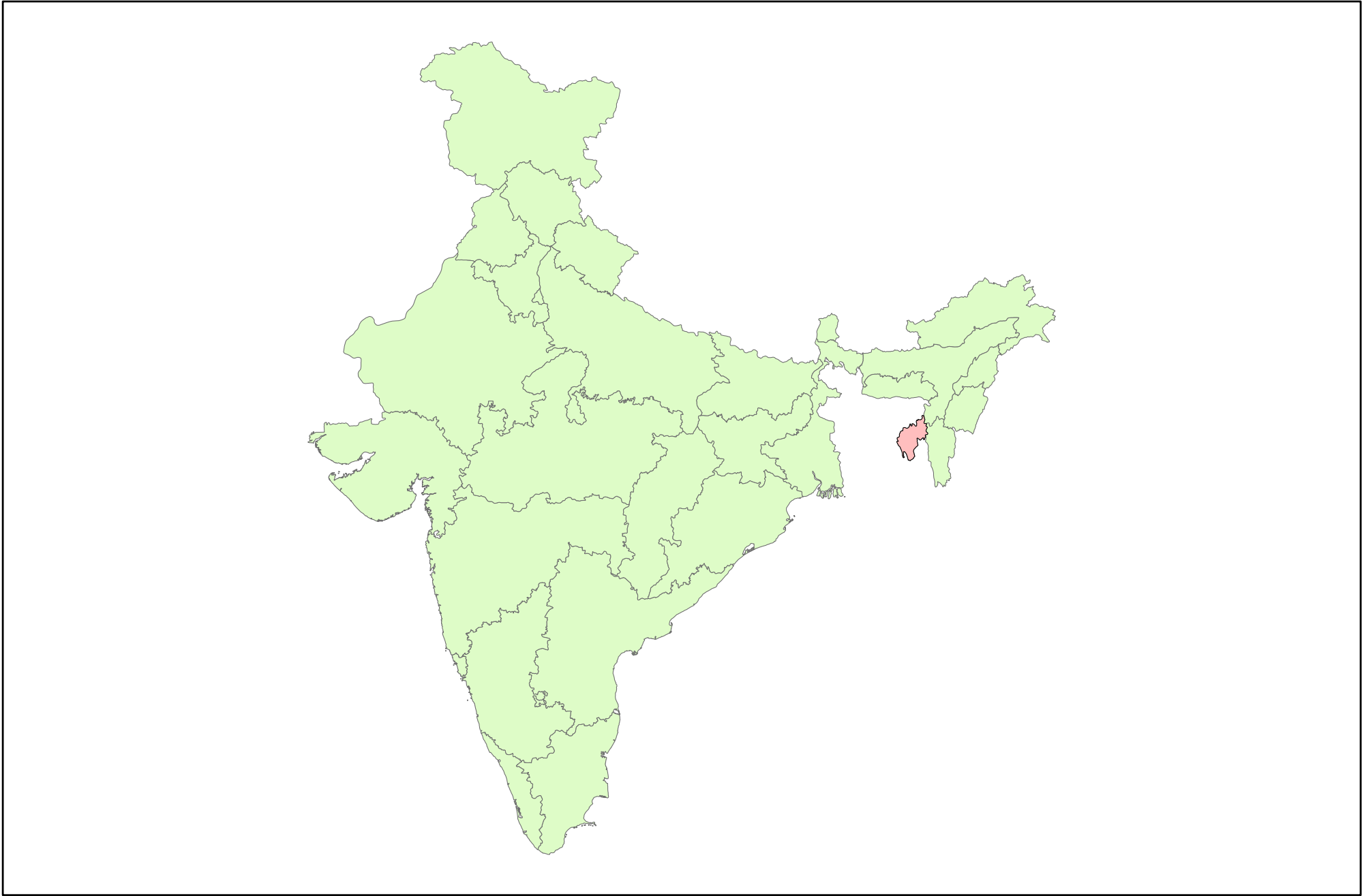
Sl. No.	NIT Criteria	Block: AA-ONHP-2018/5 and its adjoining areas		
		Equipment (Make, Model & Vintage)	Quantity	Supporting Documents with file and page references of uploaded documents
	The No. of geophones per station must be 12 (twelve) with industry standard spike length. The configuration must be: 6 x 2 [(6 in Series and two (2) such series in parallel)]			
C	UPHOLE/LVL SURVEY EQUIPMENT: Uphole/LVL Survey equipment shall not be more than four (4) years old as on the date of NIT and must be in perfect working condition. Bidder shall deploy 2 nos. of equipments (one is for LVL and other for Up-hole survey). The system must comprise of the following:			
	24 channel digital recorder with 0.1 ms sampling interval.			
	Suitable cables for Uphole/LVL Survey meeting manufacturer's			
	Refraction Geophone 4.5 Hz. The Geophones must meet			
	Uphole Survey Digital Recorder with a minimum of 4 channels and down hole cable, hydrophone/geophones suitable for logging to 100 m weight drop/explosive as source			
	One equipment set for LVL Survey			
	One equipment set for UPHOLE Survey			
D	COMPUTING: Stand-alone workstations with adequate RAM, disk-space for the following software packages – All the hardware shall not be more than three (3) years old as on the date of NIT & must be in perfect working condition along with all necessary software which the bidder proposes to use.			
	Survey data management & processing			
	2D/3D field management/planning			
	2D/3D survey simulation (OMNI/MESA/NORSAR or equivalent)			
	LVL/Uphole data processing and interpretation			

Sl. No.	NIT Criteria	Block: AA-ONHP-2018/5 and its adjoining areas		
		Equipment (Make, Model & Vintage)	Quantity	Supporting Documents with file and page references of uploaded documents
E	EQUIPMENT FOR 2D/3D DATA FIELD QC PROCESSING			
	Full-fledged 2D/3D Seismic Data Processing software for Field QC processing of acquired 2D seismic data			
	The hardware (CPU Type and MHz, RAM & Hard Disk Capacity), ancillary equipment viz. Printers, Plotters, Tape Drives, Networking etc. shall not be more than three (3) years old as on the date of NIT and must be in perfect working condition			
	The workstation needs to be connected to colour plotter, line printers and IBM 3592/DVD/LTO-5 cartridge drives for back-ups and any other facilities required to control the quality of survey and to provide the technical inputs required by Company			
	The Field Processing Software Version (Seismic Processing packages along with version, date of release) shall be of latest version (not more than three (3) years old) as on the date of NIT. <u>The field processing software must be capable of processing 2D/3D Seismic Data up to Pre-Stack Time Migration. The processing software must be covered under maintenance contract for the entire duration of the contract with OIL</u>			
F	COMMUNICATION EQUIPMENT			
	All the communication sets should be adequate in number and in a perfect working condition			
G	TRANSPORT EQUIPMENT			
	The bidder has to decide and bring requisite quantity of specialized transport for crew, explosive vans and jeeps for explosive movement, Instrument van, to carry out seismic survey in areas as described in Section-II of PART-3. All the available indigenous transport has to be arranged by the bidder, locally. All the transports must be in perfect working condition and meet all the desired specification including insurance and the requisite licenses for the purpose of use. All the vehicles must be equipped with all seat belts, First Aid Kit, Spare wheel, fire-extinguisher etc as per HSE standards.			

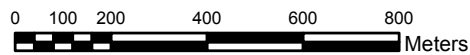
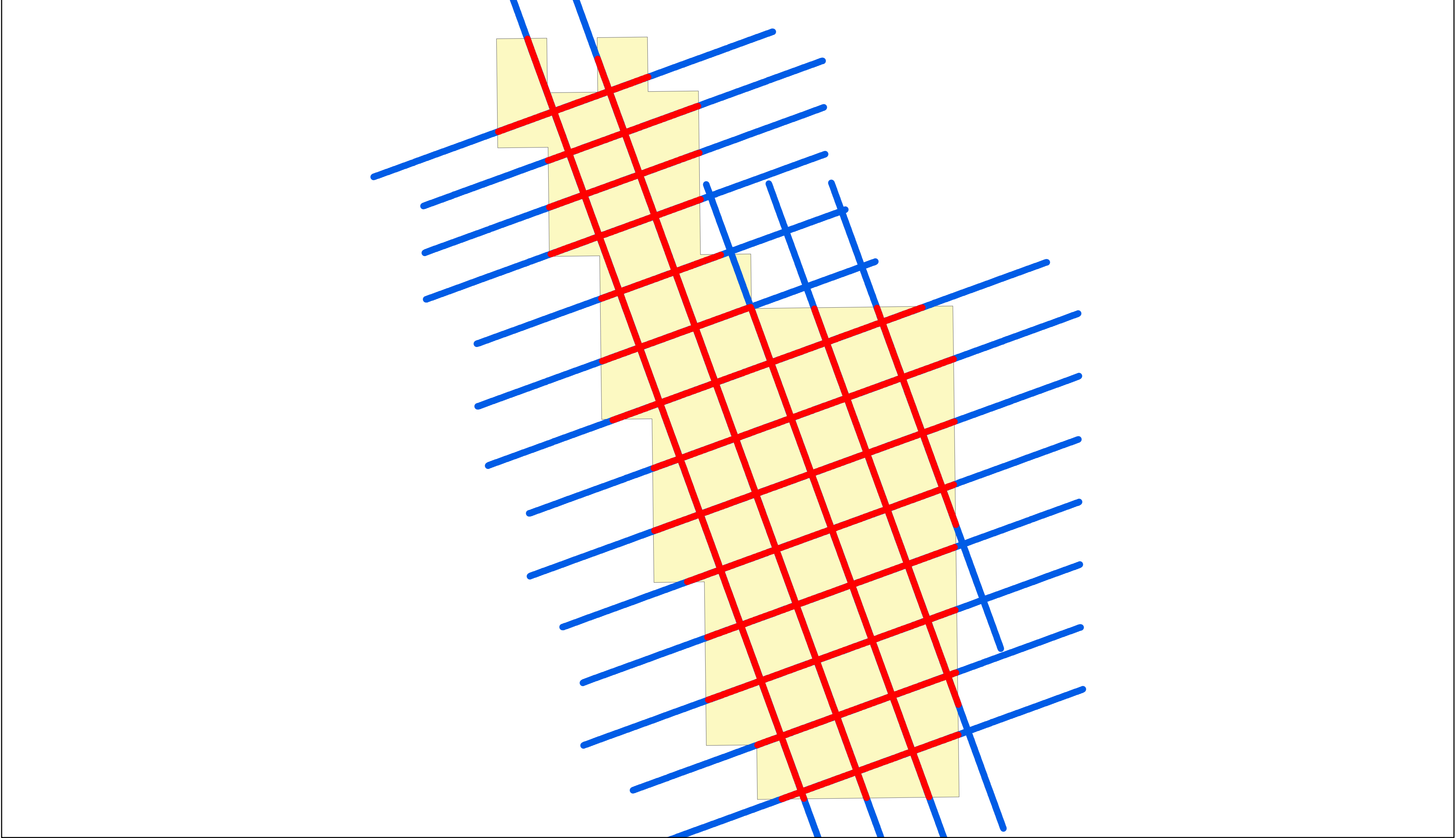
Sl. No.	NIT Criteria	Block: AA-ONHP-2018/5 and its adjoining areas		
		Equipment (Make, Model & Vintage)	Quantity	Supporting Documents with file and page references of uploaded documents
H	Shot-hole Drilling Rigs: Bidder shall deploy adequate Portable mechanized drilling rigs as described in Scope of Works, Part-III, Section-II to drill the shot holes in the areas.			
	Portable mechanized drilling rigs with air compressor drilling/ pneumatic drilling, water drilling rigs			

Note:

1. Bidder shall mobilize all the equipment and accessories required for 2D and 3D Seismic survey operation in the Block as per Check list-1 during mobilization period.
2. Bidder must provide the vintage against the A to E as asked in NIT.

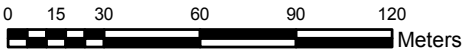
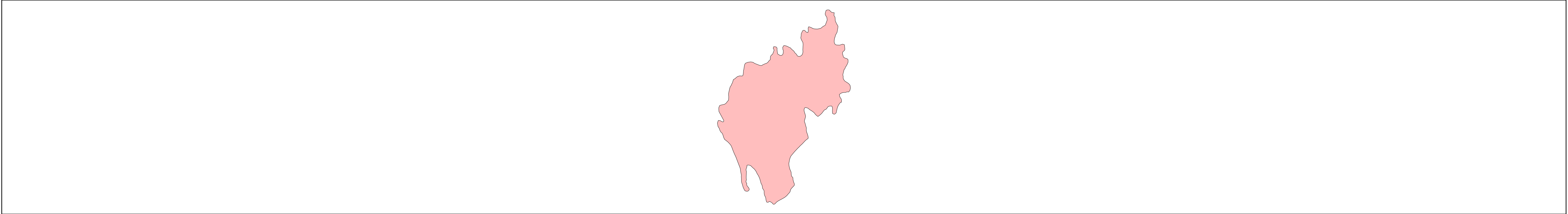


Tripura State in INDIA



Block: AA-ONHP-2018/5 with tentatively proposed shot (red colour) & receiver (blue colour) points along 2D Seismic Lines

Zoomed view of Tripura State



**TENTATIVELY PROPOSED SHOT (RED) & RECEIVER (BLUE) POINTS ALONG 2D SEISMIC LINES
(BLOCK: AA-ONHP-2018/5 falls in Tripura State of INDIA)**



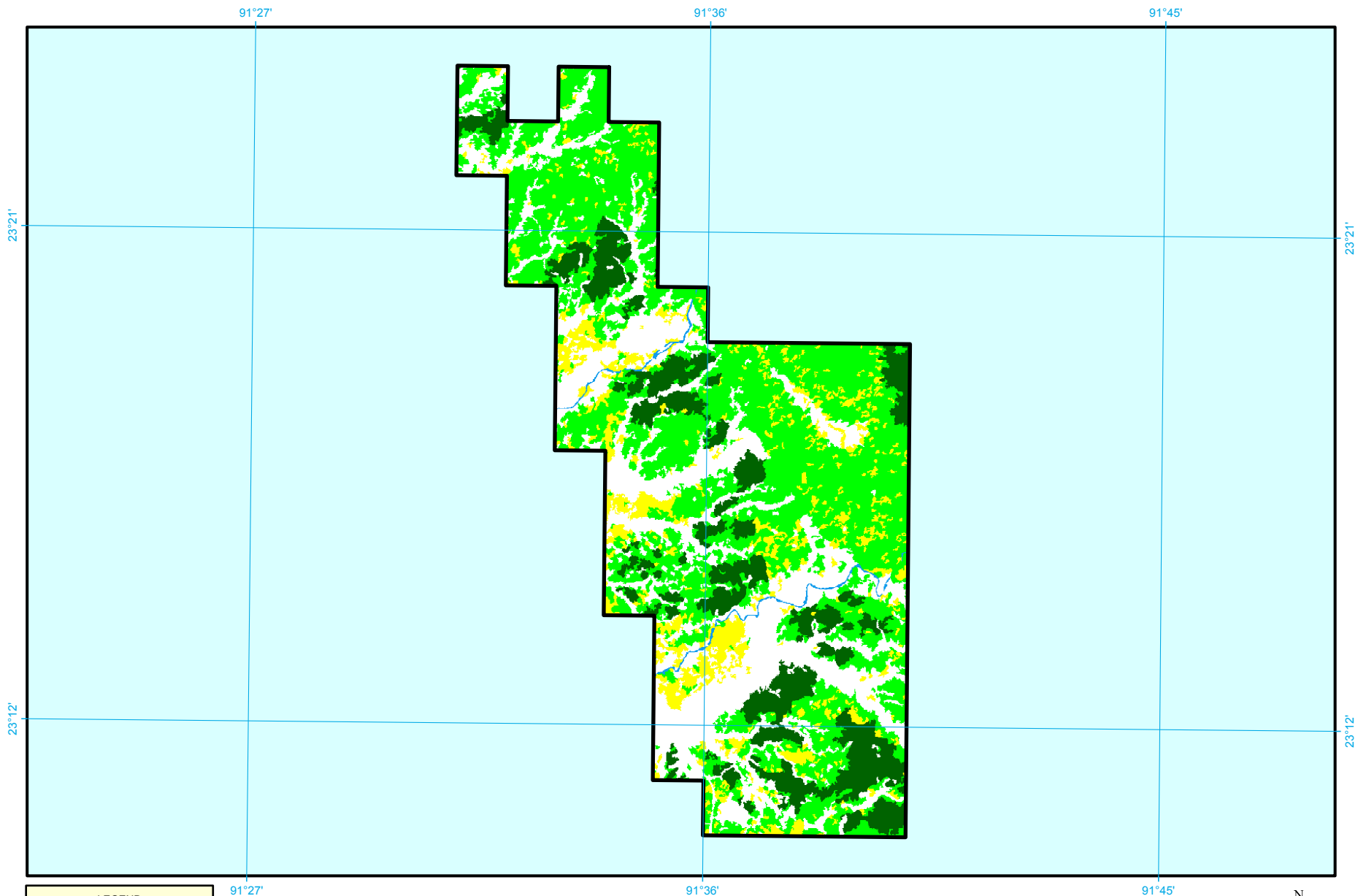
Figure 1

OIL INDIA LIMITED

FRONTIER BASIN PROJECT

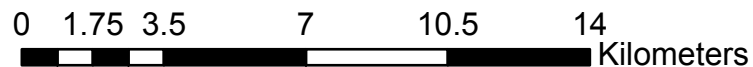
Duliajan, ASSAM - 786602

Date: 18.04.2020



LEGEND	
	BLOCK_AA_ONHP_2018_5
SHEET_79M	
Class_Name	
	Water
	Non_Forest
	Open Forest
	Moderately Dense Forest
	Very Dense Forest

FOREST COVER MAP with in BLOCK: AA-ONHP-2018/5 **(Based on the Digital Interpretation of IRS** **Resourcesat 2 LISS III 2015-16 Data)**



Coordinate System: WGS 1984 UTM Zone 46N
 Central Meridian: 93°0'0"E