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

CORRIGENDUM

Addendum No. 2 dated 18.11.2016 to IFB No. CDG2555P17

This Addendum No. 2 dated 18.11.2016 to IFB No. CDG2555P17 for 'Hiring of Services for Acquisition of 100 Sq. Km of 3D Seismic Data using state of the art equipment in Baghjan area of Assam, India', is issued to include the changes subsequent to the pre-bid conference as furnished in Annexure-I given herein below:

2.0 All other Terms and Conditions of the Bid Document remain unchanged.

(G C Dev Choudhury)
DGM-Contracts (HoD)
For Resident Chief Executive

<table>
<tr><th>Srl. No.</th><th>Clause Description</th><th>ORIGINAL CLAUSE</th><th>AMENDED CLAUSE</th></tr>
<tr><td>1</td><td>CLAUSE 2.4 of PART- 3, SECTION-II, SCOPE OF WORK/TERMS OF REFERENCE/TECHNICAL SPECIFICATIONS/SPECIAL CONDITIONS OF CONTRACT</td><td>The Bidder shall deploy latest generation of seismic data acquisition system with 24 bit delta-sigma technology and facilities of recording minimum 10000 channels per shot record. Bidder must have enough field electronics to lay on the ground so that the Tendered quantum of work can be completed in scheduled time.

The Block co-ordinates (WGS 84) are given in Table below.

Table-1: Coordinates of block
SURVEY BLOCK
<table><tr><th>Corner Points</th><th>Easting</th><th>Northing</th></tr><tr><td>A</td><td>3271167.00</td><td>1100458.00</td></tr><tr><td>B</td><td>3274999.00</td><td>1103379.00</td></tr><tr><td>C</td><td>3282450.00</td><td>1103379.00</td></tr><tr><td>D</td><td>3282450.00</td><td>1094025.00</td></tr><tr><td>E</td><td>3271167.00</td><td>1094025.00</td></tr></table></td><td>The Bidder shall deploy latest generation of seismic data acquisition system with 24 bit delta-sigma technology and facilities of recording minimum 10000 channels per shot record. Bidder must have enough field electronics to lay on the ground so that the Tendered quantum of work can be completed in scheduled time.
The Block co-ordinates (LAMBERT & WGS 84) are given in Table below.
<u>Table-1: Coordinates of block</u>
<table><tr><th rowspan="2">Corner Points</th><th colspan="2">LAMBART (LCC)</th><th colspan="2">WGS 84</th></tr><tr><th>EASTING</th><th>NORTHING</th><th>LATITUDE</th><th>LONGITUDE</th></tr><tr><td>A</td><td>3271167.0000</td><td>1100458.0000</td><td>27° 35' 00.56022" N</td><td>95° 21' 14.07722" E</td></tr><tr><td>B</td><td>3274999.0000</td><td>1103379.0000</td><td>27° 36' 30.34039" N</td><td>95° 23' 38.20787" E</td></tr><tr><td>C</td><td>3282450.0000</td><td>1103379.0000</td><td>27° 36' 20.27451" N</td><td>95° 28' 09.95745" E</td></tr><tr><td>D</td><td>3282450.0000</td><td>1094025.0000</td><td>27° 31' 16.37004" N</td><td>95° 27' 55.68358" E</td></tr><tr><td>E</td><td>3271167.0000</td><td>1094025.0000</td><td>27° 31' 31.54808" N</td><td>95° 21' 04.46757" E</td></tr></table>
<table><tr><th rowspan="2">Corner Points</th><th colspan="2">LAMBART (LCC)</th><th colspan="2">WGS 84</th></tr><tr><th>EASTING</th><th>NORTHING</th><th>LATITUDE</th><th>LONGITUDE</th></tr><tr><td>1</td><td>3269846.6000</td><td>1099572.7000</td><td>27° 34' 33.55271" N</td><td>95° 20' 24.60879" E</td></tr><tr><td>2</td><td>3276727.1800</td><td>1104771.7000</td><td>27° 37' 13.26532" N</td><td>95° 24' 43.34293" E</td></tr><tr><td>3</td><td>3283166.6000</td><td>1104771.7000</td><td>27° 37' 04.54533" N</td><td>95° 28' 38.22208" E</td></tr><tr><td>4</td><td>3283166.6000</td><td>1092501.7000</td><td>27° 30' 25.90294" N</td><td>95° 28' 19.47389" E</td></tr><tr><td>5</td><td>3269846.6000</td><td>1092501.7000</td><td>27° 30' 43.80909" N</td><td>95° 20' 14.07439" E</td></tr></table>
AREA - 1
AREA - 2
<table><tr><th rowspan="2">Corner Points</th><th colspan="2">LAMBART (LCC)</th><th colspan="2">WGS 84</th></tr><tr><th>EASTING</th><th>NORTHING</th><th>LATITUDE</th><th>LONGITUDE</th></tr><tr><td>F</td><td>3272366.7500</td><td>1101372.6000</td><td>27° 35' 28.67597" N</td><td>95° 21' 59.19615" E</td></tr><tr><td>G</td><td>3273972.4400</td><td>1102596.6000</td><td>27° 36' 06.29665" N</td><td>95° 22' 59.59061" E</td></tr><tr><td>H</td><td>3281367.0700</td><td>1102596.6000</td><td>27° 35' 56.32712" N</td><td>95° 27' 29.26980" E</td></tr><tr><td>I</td><td>3281367.0700</td><td>1096837.1500</td><td>27° 32' 49.20737" N</td><td>95° 27' 20.49730" E</td></tr><tr><td>J</td><td>3272366.7500</td><td>1096837.1500</td><td>27° 33' 01.31849" N</td><td>95° 21' 52.40376" E</td></tr></table></td></tr>
<tr><td>2</td><td>CLAUSE 5.2.1 of PART- 3, SECTION-II, SCOPE OF WORK/TERMS OF REFERENCE/TECHNICAL SPECIFICATIONS/SPECIAL CONDITIONS OF CONTRACT</td><td>5.2.1 Data Acquisition Strategy: The proposed survey block area has difficult surface logistics that pose serious challenges to successful data acquisition program. Shot-holes and layout of receivers are not allowed inside the swamp (notified Eco-sensitive zone) and its close periphery, and this leads to low fold and missing offsets for the bins of subsurface coverage in the affected area. Further, repeated shots are not advisable as per ground situation. Therefore, in order compensate the fold and the missing offsets, more nos. channels (5462 channels and 24 lines operations) need to be deployed for each shot near the swamp and the river-bank area, and this area is demarcated as Area-2 in the map (Fig.3 refers). The rest of the area within the survey block is demarcated as Area-1 (Fig.3 refers) wherein, relatively lesser nos. of channels (4160 channels per shot) is required. The survey acquisition geometry & survey design for the Area-1 and Area-2 are given in Table-2 and Table-3 respectively

Table-2 (Acquisition Geometry & parameters for the Area-1)
<table><tr><th>Sl. No.</th><th>Parameters</th><th>Values/description</th></tr><tr><td>1</td><td>Geometry</td><td>Orthogonal</td></tr><tr><td>2</td><td>Receiver Interval (RI)</td><td>30m</td></tr></table></td><td>5.2.1 Data Acquisition Strategy: The proposed survey block area has difficult surface logistics that pose serious challenges to successful data acquisition program. Shot-holes and layout of receivers are not allowed inside the swamp (notified Eco-sensitive zone) and its close periphery, and this leads to low fold and missing offsets for the bins of subsurface coverage in the affected area. Further, repeated shots are not advisable as per ground situation. Therefore, in order compensate the fold and the missing offsets, more nos. channels (5760 channels and 24 lines operations) need to be deployed for each shot near the swamp and the river-bank area, and this area is demarcated as Area-2 in the map (Fig.3 refers). The rest of the area within the survey block is demarcated as Area-1 (Fig.3 refers) wherein, relatively lesser nos. of channels (4224 channels per shot) is required. The survey acquisition geometry & survey design for the Area-1 and Area-2 are given in Table-2 and Table-3 respectively

Table-2 (Acquisition Geometry & parameters for the Area-1)
<table><tr><th>Sl. No.</th><th>Parameters</th><th>Values/description</th></tr><tr><td>1</td><td>Geometry</td><td>Orthogonal</td></tr><tr><td>2</td><td>Receiver Interval (RI)</td><td>30m</td></tr><tr><td>3</td><td>Shot-point interval (SI)</td><td>30m</td></tr><tr><td>4</td><td>Receiver line interval (RLI)</td><td>360m</td></tr></table></td></tr>
</table>

3	Shot-point interval (SI)	30m
4	Receiver line interval (RLI)	360m
5	Shot-line interval (SLI)	360m
6	Nos. of Recv. Line in the Swath	16
7	In-line offset	3900m
8	X-line offset	3000m
9	Nos. of receivers in a line	260
10	Swath roll	Single line roll, swath centered shooting
11	Source type	Shot-holes
12	Total nos. of Channels (receiver) in the recording spread (template)	4160
13	Shot-hole depth	18-20 m
14	Recv. Line Orientation	North-South
16	Data Recording	Real Time data recording
17	Receivers	Analog, All the receivers used in the survey should be of same specifications and same make as per the description provided in Appendix-III

Table-3 (Acquisition Geometry & parameters for the Area-2)

Sl. No.	Parameters	Values/description
1.	Geometry	Orthogonal
2.	Receiver Interval (RI)	30m
3.	Shot-point interval (SI)	30m
4.	Receiver line interval (RLI)	360m
5.	Shot-line interval (SLI)	360m
6.	Nos. of Recv. Line in the Swath	24 (16 lines + 8 lines) wherein 260 channels for 16 lines each and 162 channels for 8 lines each
7.	In-line offset	3900m
8.	X-line offset	3000m
9.	Nos. of receivers in a line	260
10.	Swath roll	Single line roll, swath centered shooting
11.	Source type	Shot-holes
12.	Total nos. of Channels (receiver) in the recording spread (template)	5462
13.	Shot-hole depth	18-20m
14.	Recv. Line Orientation	North-South
15.	Data Recording	Real Time data recording
16.	Data Sampling Interval	2 ms
17.	Record Length	6 sec
18.	Receivers	Analog, All the receivers used in the survey should be of same specifications and same make as per the description provided in Appendix-III

5	Shot-line interval (SLI)	360m
6	Nos. of Recv. Line in the Swath	16
7	In-line offset	3900m
8	X-line offset	3000m
9	Nos. of receivers in a line	264
10	Swath roll	Single line roll, swath centered shooting
11	Source type	Shot-holes
12	Total nos. of Channels (receiver) in the recording spread (template)	4224
13	Shot-hole depth	18-20 m
14	Recv. Line Orientation	North-South
16	Data Recording	Real Time data recording
17	Receivers	Analog, All the receivers used in the survey should be of same specifications and same make as per the description provided in Appendix-III

Table-3 (Acquisition Geometry & parameters for the Area-2)

Sl. No.	Parameters	Values/description
1.	Geometry	Orthogonal
2.	Receiver Interval (RI)	30m
3.	Shot-point interval (SI)	30m
4.	Receiver line interval (RLI)	360m
5.	Shot-line interval (SLI)	360m
6.	Nos. of Recv. Line in the Swath	24 (16 lines + 8 lines) wherein 264 channels for 16 lines each and 192 channels for 8 lines each
7.	In-line offset	3900m
8.	X-line offset	3000m
9.	Nos. of receivers in a line	264
10.	Swath roll	Single line roll, swath centered shooting
11.	Source type	Shot-holes
12.	Total nos. of Channels (receiver) in the recording spread (template)	5760
13.	Shot-hole depth	18-20m
14.	Recv. Line Orientation	North-South
15.	Data Recording	Real Time data recording
16.	Data Sampling Interval	2 ms
17.	Record Length	6 sec
18.	Receivers	Analog, All the receivers used in the survey should be of same specifications and same make as per the description provided in Appendix-III

<table>
<tr><td>3</td><td>CLAUSE 8.6 of PART- 3, SECTION-II, SCOPE OF WORK/TERMS OF REFERENCE/TECHNICAL SPECIFICATIONS/SPECIAL CONDITIONS OF CONTRACT</td><td>8.6 The Bidder shall carry out shallow refraction or LVL and Uphole surveys in acquisition area along trace lines. The LVL survey should be done at a rate of one in every 500m area where as the Up-hole surveys are to be done at a rate of one in one sq.km area along the trace lines in the normal areas including the water covered areas upto 2 m water depth. The Up-hole survey should be carried out up to a depth of about 30 meters. The LVL/ Uphole recording equipment should be capable of recording a minimum of 24 channels with 0.1ms sampling interval. In areas where the surface logistic does not allow shooting LVL/ Uphole profile at the specified location, the Bidder will attempt to recover the same from a closest possible location.</td><td>8.6 The Bidder shall carry out shallow refraction or LVL and Uphole surveys in acquisition area along trace lines. The LVL survey should be done at a rate of one in every 500m area where as the Up-hole surveys are to be done at a rate of one in one sq.km area along the trace lines in the normal areas including the water covered areas upto 2 m water depth. The Up-hole survey should be minimum 40 m for Area-1 and Area-2. The LVL/ Uphole recording equipment should be capable of recording a minimum of 24 channels with 0.1ms sampling interval. In areas where the surface logistic does not allow shooting LVL/ Uphole profile at the specified location, the Bidder will attempt to recover the same from a closest possible location.</td></tr>
<tr><td>4</td><td>CLAUSE 9.2 of PART- 3, SECTION-II, SCOPE OF WORK/TERMS OF REFERENCE/TECHNICAL SPECIFICATIONS/SPECIAL CONDITIONS OF CONTRACT</td><td>9.2 Contractor shall mobilize seismic acquisition crew along with requisite equipment & accessories to be deployed for successful completion of the entire assigned survey work within eight (08) Operating Months from the date of commencement. Company will finalize the initial scheme of proposed survey work in consultation with Contractor to enable them in planning the field operations suitably. The map indicating survey block/lines will be provided by Company to Contractor.

Contractor will arrange for the preparation of pre-plots of the survey lines & conversion of co-ordinates from one datum to another, if required with Company’s consent. The SPS files/SP coordinates may be provided to Contractor, if required.</td><td>9.2 Contractor shall mobilize seismic acquisition crew along with requisite equipment & accessories to be deployed for successful completion of the entire assigned survey work within ninety (90) days from the date of commencement. Company will finalize the initial scheme of proposed survey work in consultation with Contractor to enable them in planning the field operations suitably. The map indicating survey block/lines will be provided by Company to Contractor.
Contractor will arrange for the preparation of pre-plots of the survey lines & conversion of co-ordinates from one datum to another, if required with Company’s consent. The SPS files/SP coordinates may be provided to Contractor, if required.</td></tr>
<tr><td>5</td><td>CLAUSE 10.2 of PART- 3, SECTION-II, SCOPE OF WORK/TERMS OF REFERENCE/TECHNICAL SPECIFICATIONS/SPECIAL CONDITIONS OF CONTRACT</td><td>10.2 The bidder shall carryout experimental work before commencing actual 3D data acquisition operations. Twenty days of experimental work shall be conducted to acquire 60 GLKM of 2D seismic data to know the factors affecting data quality and for assessment of probable logistical problems that may come up during the intended 3D data acquisition. Total duration of the experimental work is maximum 20 days excluding National and Local holidays. The bidder will not be allowed to start 3D seismic data acquisition unless at least 45 GLKM of the total planned experimental work (2D data acquisition) gets complete with recording of minimum of 70%(~17 shots) of the planned shots in every ground line kilometer.</td><td>10.2 The bidder shall carryout experimental work before commencing actual 3D data acquisition operations. Twenty days of experimental work shall be conducted to acquire 60 GLKM of 2D seismic data to know the factors affecting data quality and for assessment of probable logistical problems that may come up during the intended 3D data acquisition. Total duration of the experimental work is maximum 20 days excluding National and Local holidays. The bidder will not be allowed to start 3D seismic data acquisition unless at least 45 GLKM of the total planned experimental work (2D data acquisition) gets complete with recording of minimum of 70%(~17 shots) of the planned shots in every ground line kilometer.

The 20 days duration for acquiring of 60 GLKM 2D data under experimental works is excluding the 90 days stipulated for Mobilization. This twenty (20) days experimental work will commence once mobilization is completed in all respect (certified by the company representatives).</td></tr>
<tr><td>6</td><td>CLAUSE 11.1 of PART- 3, SECTION-II, SCOPE OF WORK/TERMS OF REFERENCE/TECHNICAL SPECIFICATIONS/SPECIAL CONDITIONS OF CONTRACT</td><td>11.1 The experimental work is meant for acquisition of around 60.00 GLKM of 2D data acquisition in order to know the data quality and for assessment of probable logistical problems that may come up during the intended 3D data acquisition. The parameters of the 2D acquisition are given in the Table-4. Fig.2 refers the map showing positions of the 2D-lines within the survey block, and the data acquisition is to be done as per the priority of 2D-lines given by the Company during acquisition. Total duration of the experimental work is maximum 20 days, and this duration is for 20 days at a continuation except the National and Local holidays within; there will be no standby or force majeure. Bidder shall submit data along with detailed report on the completion of entire experimental work. The Company will give its views within 24 hours of the receipt of the report on experimental shooting. The seismic production shooting (i.e. 3D data acquisition) will not start unless the Company is satisfied with the results of experimental work (2D data acquisition).

Table-4: Acquisition parameters of 2D-seismic lines under experimental survey
<table>
<tr><th>Sl.No.</th><th>Parameters</th><th>Values</th></tr>
<tr><td>1</td><td>Spread</td><td>Split Spread</td></tr>
<tr><td>2</td><td>Receiver Interval (RI)</td><td>40m</td></tr>
<tr><td>3</td><td>Shot Interval(SI)</td><td>40m</td></tr>
<tr><td>4</td><td>Shot-hole depth</td><td>18-20m</td></tr>
<tr><td>5</td><td>Nos. of channels per shot (i.e. in live spread)</td><td>222</td></tr>
<tr><td>6</td><td>Near Offset</td><td>20m</td></tr>
<tr><td>7</td><td>Far Offset</td><td>4420m</td></tr>
<tr><td>8</td><td>Fold (Nominal)</td><td>111</td></tr>
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<tr><td>11</td><td>Spread</td><td>Symmetrical Split spread</td></tr>
</table></td></tr>
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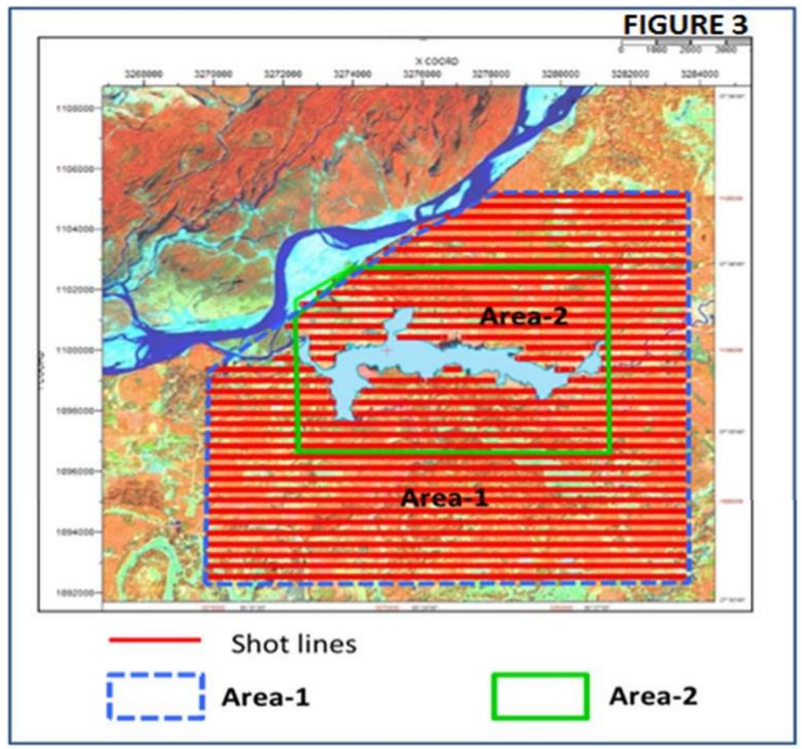
</table>

7	Figure-3, Page 79 of 121	**FIGURE 3** 	**FIGURE 3**