

OIL INDIA LIMITED
 (A Government of India Enterprise)
 P.O. Duliajan-786602, Assam, India
 E-mail: material@oilindia.in

INVITATION FOR BID
LOCAL COMPETITIVE BID

OIL INDIA LIMITED invites Local Competitive Bid (LCB) through its e-procurement portal <https://etender.srm.oilindia.in/irj/portal> for the following items:

Tender No	Bid Closing/ Opening Date	Item & Qty
SDI8091P16 DT:06.08.20	01.10.2015	SKID MOUNTED WELL TEST SEPERATOR NOS
SDI8159P16 DT; 12.08.20	01.10.2015	05 NOS EMULSION TREATER

Tender fee (Non-refundable): Rs 1,000.00; Bid Closing/Opening Time: **(11 Hrs.) IST/(14 Hrs.) IST**; Period of sale of documents **till One week prior to bid closing date**. The complete bid documents and details for purchasing bid documents, participation in E-tenders are available on OIL's e-procurement portal <https://etender.srm.oilindia.in/irj/portal> as well as OIL's website www.oil-india.com.

NOTE: All addenda, Corrigenda, time extension etc. to the tenders will be hosted on above website and e-portal only and no separate notification shall be issued in the press. Bidders should regularly visit above website and e-portal to keep themselves updated.



OIL INDIA LIMITED
(A Government of India Enterprises)
PO : Duliajan – 786602
Assam (India)

TELEPHONE NO. (91-374) 2808719

FAX NO: (91-374) 2800533

Email: ranjanbarman@oilindia.in ; erp_mm@oilindia.in

FORWARDING LETTER

Tender No.	: SDI8091P16 Dated 06.08.2015
Tender Fee	: Rs 1,000.00
Bid Security Amount	: Rs 1,75,000.00
Bidding Type	: SINGLE STAGE TWO BID SYSTEM
Bid Closing on	: As mentioned in the e-portal
Bid Opening on	: -do-
Performance Security	: Applicable
Integrity Pact	: Applicable

OIL invites Bids for **Skid Mounted Well Test Separator – 7 nos.** through its e-Procurement site under **SINGLE STAGE TWO BID SYSTEM**. The bidding documents and other terms and conditions are available at Booklet No. MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders. The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area -> Tender Documents

The general details of tender can be viewed by opening the RFx [Tender] under RFx and Auctions.. The details of items tendered can be **found in the Item Data and details uploaded under Technical RFx.**

NOTES:

The tender will be governed by:

- “General Terms & Conditions” for e-Procurement as per Booklet No. MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders.
- Technical specifications and Quantity as per **Annexure – 1A**.
- The prescribed Bid Forms for submission of bids are available in the Technical RFx -> External Area -> Tender Documents.
- In the event of receipt of only a single offer against the tender within B.C. date, OIL reserves the right to extend the B.C. date as deemed fit by the Company. During the extended period, the bidders who have already submitted the bids on or before the original B.C. date, shall not be permitted to revise their quotation.
- All corrigenda, addenda, amendments, time extension, clarifications etc. To the tender will be hoisted on OIL’s website (www.oil-india.com) and in the e-portal (<https://etenders.srm.oilindia.in/irj/portal>) only and no separate notification shall be issued

in the press. Prospective bidders are requested to regularly visit the website and e-portal to keep themselves updated.

- f) Any sum of money due and payable to the contractor (including Security Deposit refundable to them) under this or any other contract may be appropriated by Oil India Limited and set-off against any claim of Oil India Limited (or such other person or persons contracting through Oil India Limited) for payment of sum of money arising out of this contract or under any other contract made by the contractor with Oil India Limited (or such other person or persons contracting through Oil India Limited).
- g) Bidder are advised to fill up the Technical bid check list (**Annexure EEE**) and Response sheet (**Annexure FFF**) given in MS excel format in Technical RFx -> External Area - > Tender Documents. The above filled up document to be uploaded in the **Technical RFX** Response.

Special Note:

1.0 General Qualification Criteria:

In addition to the general BRC/BEC, following criteria on Bidders' Experience and their financial capabilities shall be considered (**documentary evidence to be provided along with the bid in Technical RFx -> External Area - > Tender Documents**) as on the Bid Closing Date:

Criteria	Complied / Not Complied.
	Documentary evidence submitted / not submitted
a) Annual financial turnover of the firm in any of the last 3 financial years or current financial year should not be less than Rs 175 Lakhs.	

Note: Documentary evidence in respect of the above should be submitted in the form of copies of relevant Purchase Orders along with copies of any of the documents in respect of satisfactory execution of each of those Purchase Orders, such as – (i) Satisfactory Inspection Report (OR) (ii) Satisfactory Supply Completion / Installation Report (OR) (iii) Consignee Receipted Delivery Challans (OR) (iv) Central Excise Gate Pass / Tax , Invoices issued under relevant rules of Central Excise / VAT (OR) (v) any other documentary evidence that can substantiate the satisfactory execution of each of the purchase orders cited above. For Annual financial turnover enclose the audited Annual Reports or balance sheet certified by a chartered accountant.

2.0 Application showing full address/email address with Tender Fee (Non-refundable) of Rs. 1,000.00 in favour of M/s Oil India Limited and payable at Duliajan is to be sent to Head-Materials, Oil India Limited, P.O. Duliajan, Assam-786602. Application shall be accepted only upto one week prior to the bid closing date (or as amended in e-portal). The envelope containing the application for participation should clearly indicate “REQUEST FOR ISSUE OF USER ID AND PASSWORD FOR E TENDER NO ...” for easy identification and timely issue of user ID and password. On receipt of requisite tender fee, USER_ID and initial PASSWORD will be communicated to the bidder (through e-mail) and will be allowed to participate in the tender through OIL’s e- Procurement portal. No physical tender documents will be provided. Details of NIT can be viewed using “Guest Login” provided in the e-Procurement portal. The link to e-Procurement portal has been also provided through OIL’s web site www.oil-india.com.

NOTE:

a) **Tender Fee may also be paid online upto one week prior to the bid closing date (or as amended in e-portal).**

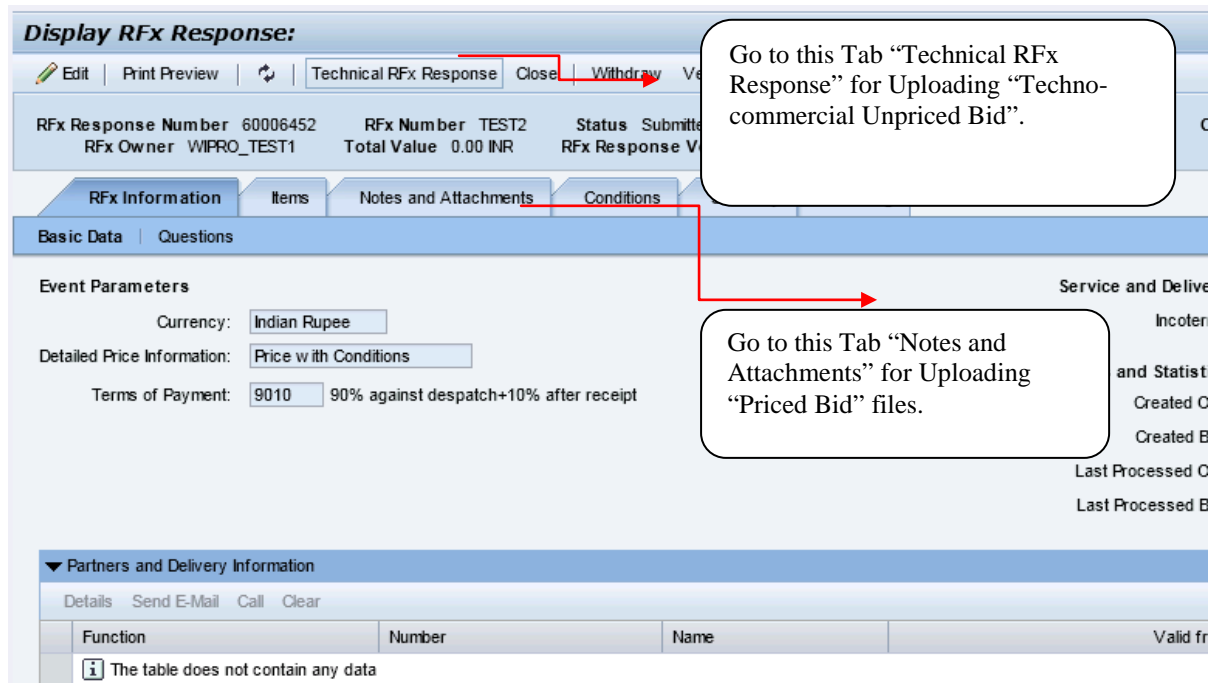
b) **PSUs and SSI units are provided tender documents Free of Cost (as per govt guidelines), however they have to apply to OIL's designated office to issue the tender documents before the last date of sale of tender document mentioned in the tender.**

3.0 The tender is invited under SINGLE STAGE-TWO BID SYSTEM. The bidders are required to submit both the “TECHNO-COMMERCIAL UNPRICED BID” and “PRICED BID” through electronic format in the OIL’s e-Tender portal within the Bid Closing Date and Time stipulated in the e-Tender.

3.1 Please ensure that Technical Bid / all technical related documents related to the tender are uploaded in the Technical RFX Response-> User - > Technical Bid only. The “TECHNO-COMMERCIAL UNPRICED BID” shall contain all techno-commercial details except the prices. Please note that no price details should be uploaded in Technical RFX Response.

3.2 The “PRICE BID” must contain the price schedule and the bidder’s commercial terms and conditions. The prices of the items should be quoted in “Conditions Tab”. Details of prices as per Bid format / Commercial bid can be uploaded as Attachment under the attachment option under “Notes & Attachments”.

3.3 A screen shot in this regard is given below. Offer not complying with above submission procedure will be rejected as per Bid Rejection Criteria mentioned in Annexure-CCC.



On “EDIT” Mode- The following screen will appear. Bidders are advised to Upload “Techno-Commercial Unpriced Bid” and “Priced Bid” in the places as indicated above:

Bid on “EDIT” Mode

Edit RFX Response:

Submit | Read Only | Print Preview | Check Technical RFX Response | Close | Save | Verify signature of Response | Sign Response

RFX Response Number 60006452 RFX Number TEST2 Status Withdrawn Submission Deadline 13.04.2013 11:00:00 INDIA
 RFX Owner WIPRO_TEST1 Total Value 0.00 INR RFX Response Version Number 2 RFX Version Number 5

RFX Information | Items | **Notes and Attachments** | Conditions | Summary

Area for uploading Techno-Commercial Unpriced Bid*

▼ Notes

Add | Clear

Assigned To	Category	Text Preview

▼ Attachments

Sign Attachment | Add Attachment | Edit Description | Versioning | Delete | Create Qualification Prof

Assigned To	Category	Description	File Name	Version	Processor	Checked
The table does not contain any data						

Area for uploading Priced Bid**

Note :

* The “Techno-Commercial Unpriced Bid” shall contain all techno-commercial details **except the prices.**

** The “Price bid” must contain the price schedule and the bidder’s commercial terms and conditions. For uploading Price Bid, first click on Sign Attachment, a browser window will open, select the file from the PC and click on Sign to sign the Sign. On Signing a new file with extension .SSIG will be created. Close that window. Next click on Add Attachment, a browser window will open, select the .SSIG signed file from the PC and name the file under Description, Assigned to General Data and click on OK to save the File.

4.0 Please note that all tender forms and supporting documents are to be submitted through OIL’s e-Procurement site only except following documents which are to be submitted manually in sealed envelope super scribed with **Tender no.** and **Due date** to **Head Materials, Materials Department, Oil India Limited, Duliajan - 786602, Assam** on or before the Bid Closing Date and Time mentioned in the Tender.

- a) **Original Bid Security**
- b) **Detailed Catalogue (if any)**
- c) **Any other document required to be submitted in original as per tender requirement**

All documents submitted in physical form should be signed on all pages by the authorised signatory of the bidder and to be submitted in triplicate.

5.0 Benefits to Micro & Small Enterprises (MSEs) as per prevailing Govt guidelines as applicable on B.C date shall be given. MSEs who are interested in availing the benefits will upload with their offer proof of their being MSE registered for the item tendered. The MSE are also required to upload scanned copies of relevant documents indicating details of registration alongwith validity, name of the registering organization and details of the item, ownership etc., failing which, their offer may not be liable for consideration of benefits to MSEs.

6.0 Bidders are requested to examine all instructions, forms, terms and specifications in the bid. Failure to furnish all information required as per the NIT or submission of offers not substantially responsive to the bid in every respect will be at the bidders risk and may result in rejection of its offer without seeking any clarifications.

7.0 Bidders must ensure that their bid is uploaded in the system before the tender closing date and time. Also, they must ensure that above documents which are to be submitted in a sealed

envelope are also submitted at the above mentioned address before the bid closing date and time failing which the offer shall be rejected.

8.0 Bid must be submitted electronically only through OIL's e-procurement portal. Bid submitted in any other form will be rejected.

9.0 **SINGLE STAGE TWO BID SYSTEM** shall be followed for this tender and only the PRICED-BIDS of the bidders whose offers are commercially and technically acceptable shall be opened for further evaluation.

10.0 a) **The Integrity Pact is applicable against this tender. Therefore, please submit the Integrity Pact document duly signed along with your quotation as per BRC. OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide Annexure DDD of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be submitted by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit Integrity Pact with the offer, their bid shall be rejected straightway".**

b) **The name of the OIL's Independent External Monitors at present are as under:**

**SHRI RAGHAW SHARAN PANDEY, IAS (Retd.),
Former Secretary, MOP & NG,
e-Mail ID : rspandey_99@yahoo.com**

**SHRI RAJIV MATHUR, IPS (Retd.)
Former Director, IB, Govt. of India,
e-Mail ID : rajivmathur23@gmail.com**

11.0 The tender shall be governed by the Bid Rejection & Bid Evaluation Criteria given in enclosed **Annexure-CCC**. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (as per **Annexure-CCC**) contradict the Clauses of the tender and / or "General Terms & Conditions" as per Booklet No. MM/LOCAL/E-01/2005 for E-procurement (LCB Tenders) elsewhere, those in the BEC / BRC shall prevail.

12.0 To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.

13.0 Please do refer the User Manual provided on the portal on the procedure How to create Response for submitting offer.

NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Yours Faithfully

**Sd-
(R.BARMAN)
SR. MANAGER MATERIALS (IP)
FOR : HEAD-MATERIALS**

Tender No & Date:SDI8091P16 dated 06.08.2015**BID REJECTION CRITERIA (BRC) / BID EVALUATION CRITERIA (BEC)**

The following BRC/BEC will govern the evaluation of the bids received against this tender. Bids that do not comply with stipulated BRC/BEC in full will be treated as non responsive and such bids shall prima-facie be rejected. Bid evaluation will be done only for those bids that pass through the “Bid Rejection Criteria” as stipulated in this document.

Other terms and conditions of the enquiry shall be as per General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders. However, if any of the Clauses of the Bid Rejection Criteria / Bid Evaluation Criteria (BRC / BEC) contradict the Clauses of the tender or MM/LOCAL/E-01/2005 elsewhere, those in the BRC / BEC shall prevail.

<u>Criteria</u>	Complied / Not Complied. (Remarks if any)
<p>1.0 BID REJECTION CRITERIA (BRC):</p> <p>The bid shall conform generally to the terms and conditions given in this document. Notwithstanding the general conformity of the bids to the stipulated specifications, the following requirements will have to be particularly met by the Bidders without which the same will be considered as non-responsive and rejected.</p> <p>A) TECHNICAL:</p> <p>(I) <u>BIDDERS EXPERIENCE</u></p> <p>1.0 The bidder must have minimum experience of 5 (Five) years in the field of design, fabrication, assembly, supply of at least two (02) nos of skid mounted Gas-Oil Separator of capacity not less than 200 KLPD of fluid and 3.60 MMSCUFD of gas to any oil and gas industry. The gas-oil separators must be modular in structure (skid mounted) along with all the accessories like valves, control gears and flow/pressure control valves to hook up readily to production process. Necessary credentials are to be submitted along with list of past customers in the form of copy of Purchase Order, Commissioning Report and Completion Certificate from the Clients along with the bid. In absence of the same the offers will summarily be rejected.</p> <p>(II) <u>CONFORMITY TO THE NIT SPECIFICATIONS</u></p> <p>1.0 The bidder must submit expressed undertaking that the manufactured item(s) will conform to the technical specifications as stipulated in the NIT in all respect.</p> <p>2.0 The bidder must confirm that the offered unit/goods are fresh manufacture.</p>	

- 3.0 Bidder must confirm that the inspection of the gas oil separators will be carried out as per scope of inspection specified in Note No. K of Technical Specifications of the NIT.
- 4.0 The bidder is to categorically confirm to comply all the clauses of special terms and conditions of NIT.

B) COMMERCIAL:

- i). Validity of the bid shall be minimum 120 days from the Bid Closing Date.
- ii). Bid security:
The bid must be accompanied by Bid Security of **Rs 1,75,000.00** in OIL's prescribed format as Bank Guarantee or a Bank Draft/Cashier cheque in favour of OIL. The Bid Security may be submitted manually in sealed envelope superscribed with Tender no. and Bid Closing date to Head Materials, Materials Department, Oil India Limited, Duliajan- 786602, Assam on or before the Bid Closing Date and Time mentioned in the Tender. **The Bank Guarantee towards Bid Security shall be valid for 10 months from Bid closing date. (i.e. upto 01.08.2016).**

Bid Security may also be paid online on or before the Bid Closing Date and Time mentioned in the Tender.

If bid security in ORIGINAL of above mentioned Amount and Validity is not received or paid online within bid closing date and time, the bid submitted through electronic form will be rejected without any further consideration.

For exemption for submission of Bid Security, please refer Clause No. 8.8 of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders.

The format of Bank Guarantee towards Bid Security (Annexure – VII) has been amended to Annexure – VII (Revised) and bidders should submit Bank Guarantee towards Bid Security as per Annexure – VII (Revised) only.

In case of extension of Bid Closing date against the tender where a bidder has already submitted his bid with requisite bid security validity within the original B.C. Date, such bidders will extend validity of bid security covering the extended period of the bid closing date.

- iii). Bids are invited under “Single Stage Two Bid System”. Bidders have to submit both the “Techno-commercial Unpriced Bids” and “Priced Bids” through electronic form in the OIL’s e-Tender portal within the bid Closing date and time stipulated in the e-tender. The Techno-commercial

Unpriced bid is to be submitted as per scope of works and Technical specification of the tender and the priced bid as per the online Commercial bid format. For details of submission procedure, please refer relevant para of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders. Any offer not complying with the above shall be rejected straightway.

v). Performance Security:

a) The successful Bidder will have to provide Performance Security @ 10% of total cost of Equipment + Installation & Commissioning . The Performance Security must be valid for one year from the date of successful commissioning of the equipment or 18 months from the date of despatch whichever is earlier.

The validity requirement of Performance Security is assuming despatch within stipulated delivery period and confirmation to all terms and conditions of order. In case of any delay in despatch or non-confirmation to all terms and conditions of order, validity of the Performance Security is to be extended suitably as advised by OIL.

For exemption for submission of Performance Security, please refer Clause No. 9.12 of General Terms and Conditions vide MM/LOCAL/E-01/2005 for E-Procurement LCB Tenders.

iv). *The Bank Guarantee should be allowed to be encashed at all branches within India.*

v). The prices offered will have to be firm through delivery and not subject to variation on any account. A bid submitted with an adjustable price will be treated as non-responsive and rejected.

vi). Bids received after the bid closing date and time will be rejected. Similarly, modifications to bids received after the bid closing date & time will not be considered.

vii). All the Bids must be Digitally Signed using “Class 3” digital certificate with Organisation’s name (*e-commerce application*) as per Indian IT Act obtained from the licensed Certifying Authorities operating under the Root Certifying Authority of India (RCAI), Controller of Certifying Authorities (CCA) of India. The bid signed using other than “Class 3 with Organisation’s Name” digital certificate, will be rejected.

viii). Technical RFx Response folder is meant for Technical bid only. Therefore, No price should be given in Technical RFx Response folder, otherwise the offer will be rejected.

ix). Price should be maintained in the “online price schedule” only. The price submitted other than the “online price schedule” shall not be considered.

xi). Integrity Pact :

OIL shall be entering into an Integrity Pact with the bidders as per format enclosed vide Annexure DDD of the tender document. This Integrity Pact proforma has been duly signed digitally by OIL's competent signatory. The proforma has to be submitted by the bidder (along with the technical bid) duly signed (digitally) by the same signatory who signed the bid, i.e., who is duly authorized to sign the bid. Uploading the Integrity Pact with digital signature will be construed that all pages of the Integrity Pact has been signed by the bidder's authorized signatory who sign the Bid. If any bidder refuses to sign Integrity Pact or declines to submit Integrity Pact with the offer, their bid shall be rejected straightway".

xii). A bid shall be rejected straightway if it does not conform to any one of the following clauses:

- (a) Validity of bid shorter than the validity indicated in the Tender.**
- (b) Original Bid Security not received within the stipulated date & time mentioned in the Tender.**
- (c) Bid Security with (i) Validity shorter than the validity indicated in Tender and/or (ii) Bid Security amount lesser than the amount indicated in the Tender.**
- (d) In case the Party refuses to sign Integrity Pact.**
- (e) Average Annual Turnover of a bidder lower than the average Annual turnover mentioned in the Tender.**

2.0 BID EVALUATION CRITERIA (BEC)

The bids conforming to the terms and conditions stipulated in the tender and considered to be responsive after subjecting to the Bid Rejection Criteria as well as verification of original of any or all documents/ documentary evidences pertaining to BRC, will be considered for further evaluation as per the Bid Evaluation Criteria given below.

A) COMMERCIAL:

- i). To evaluate the inter-se-ranking of the offers, Assam Entry Tax on purchase value will be loaded as per prevailing Govt. of Assam guidelines as applicable on bid closing date. Bidders may check this with the appropriate authority while submitting their offer.
- ii) Priced bids of only those bidders will be opened whose offers are found technically acceptable. The technically acceptable bidders will be informed before opening of the "priced bid".

iii). To ascertain the substantial responsiveness of the bid OIL reserves the right to ask the bidder for clarification in respect of clauses covered under BRC also and such clarifications fulfilling the BRC clauses in toto must be received on or before the deadline given by the company, failing which the offer will be summarily rejected.	
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NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

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TECHNICAL SPECIFICATIONS WITH QUANTITY

Tender No & Date: SDI8091P16 Dated 06.08.2015

	Complied / Not Complied. (Remarks if any)
<p>ITEM NO. 10 ; QUANTITY : 02 NOS.</p> <p>Design, fabrication, unitization, testing and supply of two phase oil & gas separator as per API specification 12J, ASME section VIII Div-I complete with all mountings, accessories, piping and valves - all unitized and protected suitably and mounted on a robust oil field type skid as per the following specifications :</p> <p>A. Service requirement: The separator unit will be used for initial production testing of well. The unit is to be designed and manufactured to meet the following service requirement:</p> <ul style="list-style-type: none"> i) To separate liquid (Oil & Water) and gas efficiently from the well stream. ii) To arrest 99% entrained liquid particles from the separated gas for the particle size up to 10 micron. iii) To measure and record the gas flow rate of the separated gas. iv) Suitable provision to take liquid and gas samples for analysis. <p>B. Separator Sizing Parameters: The test separator unit is to be sized to suit the following service condition:</p> <ul style="list-style-type: none"> i) Separator Configuration: The separator should be horizontal, cylindrical shell type having dished end. ii) Well Stream Characteristics: As the test unit will be used for initial production testing of newly drilled wells, the unit will be subjected to the well stream having a wide range of characteristics. The likely range of characteristics of the well fluid is given below for design purpose. <ul style="list-style-type: none"> a) Water content (Produced) : 0% - 90% b) API gravity of oil : 20 Deg - 35 Deg c) Water specific gravity : 1.02 - 1.08 d) Gas gravity : 0.65 - 0.80 (Air = 1) e) Pour Point of oil : 27 Deg - 33 Deg C. f) Wax (Paraffin) content : 10% maximum by volume g) Sand /solid/slit content : There may be some amount of sand/slit/drilling fluids content in the well stream iii) Operating Pressure & Temperature: The separator is to be sized for the following operating conditions: <ul style="list-style-type: none"> a) Operating pressure : 30 Kg/ Sq. Cm (430 Psig) 	

b) Operating temperature : 30 Deg C - 43 Deg C

iv) Total throughput: The separator is to be sized for the following through put conditions:

a) Liquid: Normal flow rate : 400 KLPD (2516 BPD)

Maximum flow rate : 600 KLPD (3774 BPD)

b) Gas: Normal flow rate : 200,000 SCUM per day (7.20 MMSCUFD)

Maximum flow rate : 300,000 SCUM per day (10.80 MMSCUFD)

C. Mechanical Design & Fabrication of the vessel/separator unit: The separator, piping and valves must be designed and fabricated considering the following parameters in addition to the parameters given in para A and B above.

a) The vessel outer diameter must not be less than 762 mm (30")

b) Design temperature: 50 Deg C (120 Deg F)

c) Corrosion allowance: 1.6 mm (1/16")

d) Material of construction: As recommended by the relevant code.

e) Hydraulic testing of the vessel and unit: 45.0 Kg/Sq. Cm (640 PSIG)

f) All coupling connections and other pipe fittings must be rated for 210 Kg/Sq. Cm (3000 PSIG) as per ANSI B31.3.

g) Radiography: 100% radiography required.

h) Post-Weld heat treatment/stress relieving: Required for the entire vessel/separators.

i) All flanges should be made of forged carbon steel conforming to ASTM A 105 and dimensions as per ANSI B 16.5 std. 300 class rating.

j) Dished end shall be pressed and spun in dished head spinning machine only. Weld joint in dished end shall not be allowed.

D. Separator Internals: The following internal elements are a minimum requirement for the separator:

a) Sufficient settling section: It must have good liquid depth volume.

b) Inlet degassing Element: To remove gas from the well stream at the inlet.

c) Baffles: To remove gas from Oil/Liquid during fluid flow within the vessel.

d) Mist Extractor: Vane or knitted wire type to remove/arrest entrained oil/liquid particles from the separated gas.

E. Separator Connections: Each separator must be provided with the following connections to facilitate mounting of liquid level control gear, inlet/outlet piping, valves, gauges etc.

a) One - 100 mm (4") nominal x ANSI 300 Class RF flanged connections/ opening for well stream inlet.

b) One - 100 mm (4") nominal x ANSI 300 Class RF flanged opening for gas outlet.

c) One - 200 mm (8") nominal x ANSI 300 Class RF flanged opening for mounting liquid level control gear.

d) One - 50mm (2") nominal x ANSI 300 Class RF flanged opening for liquid outlet.

e) Two - 75 mm (3") nominal x ANSI 300 Class RF flanged opening for mounting two safety relief valves.

f) Two - 50 mm (2") nominal x ANSI 210 Kg/Sq. Cm (3000 Psig) WP coupling connection/opening for drainage.

g) Five - 12mm (1/2") NPT x 210 Kg/Sq. Cm (3000 Psig) WP coupling connections for mounting liquid level gauge (2), Pressure gauge (2) and temperature gauge (1).

- h) Suitable manhole for internal inspection of the vessel.
- i) All flanged outlet/inlet connections must be fitted with companion flanges. Also, all the outlet/inlet connection should be provided with proper blind / plug for protection from damage during despatch.

F. Separator Mountings: Each test separator is to be equipped with the following mountings:

a) Control gear: Internal Ball Float Type Level Controller mounted complete assembly similar to fisher type 231C and mounted pilot 779k throttle type comprising of two spring loaded valves, rocker arm (linkage assy.) pilot relay assy. to give continuous out put pressure proportional to rise or fall of liquid level in side the vessel and also reversible in action in field & comprising of float road, lever. Counter weight, chain, adjustable screw, travel stop, & necessary link, bolt & nuts etc. with other specifications as per following:

Material : Forged ASTM, A-105 steel

Mounting : Right hand

Function : For controlling level of crude oil of API gravity 20 to 35oC

Control function : Proportional out put type

Output signal : 0.2-1kg/cm²

Rising Level : Increase out put

Material of Float : 316 SS

Stuffing box : SS with PTFE or Graphite asbestos packing similar to Fisher style C

Accessories : Filter Regulator suitable for operation of natural gas at maximum 18.3.kg/cm² with drain port at bottom

Nominal size : 200mm (8") RF as per ANSI B16.5, 300 # rating flange

Float size : 185 mm (7.75") OD rating 35 kg/cm² (500 PSI)

- b) One - Pressure controller to suit the duty applications (Pressure range: 0 - 50 Kg/Sq. Cm).
- c) One -Reflex type liquid level gauge complete with cocks & glass gauge suitable protected from external damage, WP 430 Psig (30 Kg/Sq.Cm).
- d) Two-ASME safety relief valve rating ANSI 300 Class RF, to relief full gas capacity against atmosphere. Set Pressure - 33 Kg/Sq. Cm (470 Psig)
- e) Two - Dial type Pressure gauge, (0 - 50 Kg/Sq. Cm) (6" dia).
- f) One - Dial type temperature gauge, (0 - 100 Deg C) (3" dia.).
- g) Assorted - Pneumatic lines, regulators as required.
- h) Support - Bottom skirt support, mounted rigidly to the skid.

G. Accessories, Piping & Valves etc.: Each separator should be complete with the following:

a) 1 (One) no Diaphragm operated air to close type back pressure control valve 100 mm NB (4") x 300 class, suitably sized for specified gas capacity, rating ANSI 300 Class RF. Direct on line type as one complete unit to the following specification & general requirement:

Body : Globe, straight, through type

Body materials : Cast carbon steel (ASTM A 216 Gr. WCB)

No. of ports : Double

Bonnet : Plain bonnet

Trim (seat ring & plug): 316 SS with stellite facing (on seat & entire surface of the plug)

Gland type : Bolted gland

Seat ring & port size: Full

Plug characteristic: Quick opening or throttling with linear or equal percentage characteristic

Stem : Standard
 Stuffing box packing: Teflon V ring PTFE
 Diaphragm material: Chloroprene rubber with fabric reinforced
 Actuator type : Spring loaded pneumatic operated diaphragm (single spring)
 Spring range : 0.2 to 1.0 kg/cm² (maximum)
 Air supply pressure: 1.4 kg/cm² (maximum)
 Spring materials: Stainless steel (Cadmium plated)
 Mounting : Field mounted
 Temperature range : 5 - 60 deg C
 Actuator action: Reversible type
 End connection: Flanged type, raised face as per ANSI B 16.5 specification
 Air connection: 1/4 inch NPT (F)
 Fluid to be handled: Sweet natural gas (dry or wet) contaminated with moisture
 Seat leakage classification: Class IV leakage as per ANSI/FCI 70-2-1991 Standard
 Hysteresis error : 3% FS or less
 Linearity : +/- 5% FS or less
 Range-ability : 30:1
 Action : On Air failure valve to open.
 Casing : Weather Proof

The actuator yoke shall be provided with necessary arrangement for clamping pneumatic pressure indicating controller.

b) 1 (One) no Diaphragm operated control valve with valve positioner of size 50 mm NB (2") x 300 class (air to open). The valve should be direct on line type as one complete unit to the following specification & general requirement:

Upstream pressure : 30 kg/cm²
 Body : Globe, straight, through type.
 Body materials : Cast carbon steel (ASTM A 216 Gr. WCB).
 No. of ports : Double
 Bonnet : Plain bonnet
 Trim (seat ring & plug): 316 SS with stellite facing (on seat & entire surface of the plug).
 Gland type : Bolted gland
 Seat ring & port size : Full
 Plug characteristic : Quick opening or throttling with linear or equal percentage characteristic.
 Stem : Standard
 Stuffing box packing: Teflon V ring PTFE
 Diaphragm material : Chloroprene rubber with fabric reinforced
 Actuator type : Spring loaded pneumatic operated diaphragm
 Spring range : 0.2 to 1.0 kg/cm² (maximum)
 Air supply pressure: 1.4 kg/cm² (maximum)
 Spring materials : Stainless steel (Cadmium plated)
 Mounting : Field mounted
 Valve positioner : Required
 Temperature range: 5 - 45 deg C
 Actuator action : Reversible type
 End connection : Flanged type, raised face as per ANSI B 16.5 specification
 Air connection : ¼ inch NPT (F)
 Fluid to be handled : Crude oil + water
 Seat leakage classification: as per ANSI/FCI 70-2-1991 Standard

Hysteresis error : 3% FS or less
Linearity : +/- 5% FS or less
Range-ability : 30:1
Action : On Air failure valve to close.
Casing : Weather proof

The actuator yoke shall be provided with necessary arrangement for clamping pneumatic pressure indicating controller.

c) 01 (one) number flow cum pressure recorder for measuring gas production. The meter must be completed with suitable meter run and 7 nos. of orifice plates of different sizes as per following specifications.

Case : Made of die-cast Aluminium alloy and are finished in black polyurethane electrostatic powder paint with high resistance to weathering, scratches, marring and industrial fumes. The door should be hinged to the case with aircraft type hinge to type 302 stainless steel. A closed-cell neoprene gasket, non-absorbent to fluids and resistance to oils should provide the seal between the door and the case having locking arrangement.

Mounting : Suitable for mounting on 100 mm (4 inch) O.D pipe.

Pressure Range: 0- 42 Kg/cm²

DP Range: 0-100 inches of WC

Pressure Element: Precision wound helical type Bourdon element

Element Material: 316SS

DP Unit: Barton Model 199 DPU or equivalent, Material 316SS

Chart : 12" (300 mm) circular chart with marking for differential (square root) and static pressure (linear)

Chart Drive: Spring wound chart drive, Minimum 7 day wind.

Chart Speed: One revolution per day

Pens : Two pens for flow and pressure

Process Medium: Natural gas

Process Connection for Pressure: ½" NPT (M), 12.7 mm

Accuracy: ± 0.5% of full scale for differential pressure and ± 1% of full scale for static pressure

Recording Mechanism: All parts of the recording mechanism should be made of stainless steel.

Micrometer adjustment for zero, range and linearity for fast and accurate calibration should be available.

Accessories: Each recorder should be complete with the following accessories:

" Charts: 200 nos.

" Keys for door

" Spare pen arm: 1 set

" Fibre tip type nib: 100 nos. red and 100 nos. blue

" Three-valve manifold with ½" (12.7 mm) NPT needle valves: 1 set with ½" NPT (F), 12.7 mm process connection.

d) Two - Sampling points 12mm (1/2" NPT) one for liquid and one for gas complete with needle valve.

e) By-pass Arrangement: The unit shall have the bypass arrangement complete with isolating valves for the following:

" For the test separator between inlet and liquid & gas outlet.

" For gas back pressure valve and gas flow meter/meter run.

" For liquid dump valve.

f) Inlet, Isolating and Separator Drain Valve: All valves must be either gate valves or plug valves manufactured as per API Std. 600. The gate valves must be of rising stem type. The valves should be of following sizes and ratings:

" Inlet Valve: 100mm (4") nominal x ANSI 300 Class RF, API 600

" Isolating/Exit Valves: 100mm (4") x ANSI 300 Class RF, API 600

" Drain Valve: 50mm (2") screwed or 300 Class RF Valves API 600

g) Gas Scrubber and Piping: A vertical gas scrubber complete with all accessories is required to be installed on the skid for instrument gas supply. The scrubber should be complete with regulator, relief valves, control valves etc. and other mountings e.g. pressure/ temperature indicator, level gauge etc. It should also have a drain outlet.

h) All pneumatic supplies to control equipments shall be provided with filter cum pressure regulator.

i) Piping: Each test separator should be complete with all process piping and accessories installed and connected to the vessel then anchored or rigidly attached to the skid. The inlet and outlet (Oil & Gas) piping are to be taken out and placed at the end of the skid. The ends must be fitted with ANSI 300 Class RF flanges, such that these can be easily connected to the field lines at the well site. All pipe works must be made out of steel seamless, schedule 40, standard API line conforming to API 5L and fittings as per ANSI B 16.5 & 31.3.

j) Skid: The entire unit along with piping etc must be mounted on an Oil-field type robust skid. The skid must be provided with protective rail/guards so as to prevent the vessel, piping, accessories from getting damaged during transportation, loading and unloading on the truck. No component should remain protracted out beyond the protective guard of the skid. Suitable lifting hooks/attachment should be provided on the skid for lifting during loading and unloading on the truck. The skid dimension should be restricted to the following: Length: 9.0 m, Width: 3.0 m, Height: 3.0 m.

H. Code of practice and standard to be followed: The unit should be manufactured conforming to the following code of practices and standard.

a) Separator: API standard 12J & ASME section VIII, Div. I

b) Pipe fittings, flanges etc.: ANSI B 31.3, ANSI B 16.5

c) Valves: API standard 600

d) Safety Relief Valves: ASME section VIII, Div-I

e) Structural: IS 226

f) Material of construction: As per above codes.

I. Painting: The internal and external surface of the unit should be cleaned properly and painted with protective anti-corrosion paint before despatch.

J. Marking: Separator shall be provided with name plate of corrosion resistant material securely attached to a suitable bracket welded to the shell or stamped on a steel name plate seal welded to the shell. The name plate should bear the following information:

- (i) Manufacturer's Name
- (ii) Manufacturer's Serial No.
- (iii) Year of manufacture
- (iv) P.O. No.
- (v) #Manufactured for OIL#
- (vi) Weight empty, Kg
- (vii) Shell size OD X Length, mm
- (viii) Shell & dished end thickness, mm
- (ix) Maximum design pressure, Kg/Sq. Cm
- (x) Maximum design temperature, Deg C
- (xi) Liquid flow rate, normal & maximum, KLPD
- (xii) Gas flow rate, normal and maximum, SCUM per day at 30 Kg/Sq. Cm.

K. Approval, Inspection & Testing:

a. Drawing & Equipment approval :

- i) The supplier has to submit the flow diagram (P & I) of the unit and fabrication drawing of the vessel for approvals from OIL before starting of the manufacturing process.
- ii) The bidder has to submit the list of all the accessories, mountings & pipings (all the bought out items) and their make, model (if any) and sizes etc. as per OIL approved vendors list as per Annexure-A below and get the same approved by OIL. Only after obtaining the approval, they can go ahead with the manufacturing of the unit.

b. Third party inspection: The vessel will be inspected by any one of third Party Inspection Agencies approved by Oil India Ltd.(M/s. Lloyds, M/s Bureau Veritas, M/s. RITES, M/s. I.R.S. and M/s DNV), with following scope of work:

- i) To review qualification of the welder and welding procedure specifications (WPS) as per ASME code.
- ii) Verification of physical and chemical properties of raw materials as per API specifications.
- iii) To ensure compliance with respect to drawing approved by OIL for fabrication of the vessel.
- iv) Stage wise inspection of sub assemblies viz inlet and outlet, mist extractor assembly, dished end, companion flanges etc. before final assembly.
- v) To review the radio graphed film of weld joints as per ASME code and heat treatment chart.
- vi) To witness final dimensional inspection and ensure proper workmanship.
- vii) To witness hydro test of the vessel.
- viii) The above inspection is for general guide line only. If third party desire to carry out any additional inspection as per ASME code/API specification and the same should be included under intimation to Oil India Limited.
- ix) To document and issue inspection certificate.
- x) Third party inspection by other than any one of the above mentioned TPI agencies will not be accepted.

c. Inspection by OIL : Final inspection will be carried out by OIL when the separator is completed (prior to painting of the unit) and mounted on the skid and the pipe works are almost ready. The supplier are to intimate with us at least 15 to 20 days prior to the inspection. OIL inspector will inspect/witness the following:

- i) To witness the hydraulic test. Pressure Recorder should be fitted. Vessel and pipe works will be separately tested. The testing will be first done at 1.5 times the Design pressure for 30 minutes and then reducing pressure to design pressure, testing will be done for 24 hrs. The

recorder charts would be signed by OIL Engineer at the time of testing. The hydraulic test certificates report and recorder chart are to be sent to OIL.

ii) To witness the functioning of all pneumatic control gears and control valves, for which the supplier is to supply instrument air.

iii) To inspect the radiographic plates and reports. All these documents are to be sent to OIL along with the equipment.

iv) To inspect the post weld heat treatment/stress relieving report and chart which are to sent to OIL later on along with the equipment.

d. Field Testing & Performance Guarantee:

i) On receipt of the unit at site, OIL will intimate the supplier to depute their representative(s) to supervise the commissioning of the units. OIL's observation and report in this regard will be final. During the course of commissioning, if any problem is encountered, the supplier must arrange to rectify the same within one month time without any extra cost to OIL.

ii) The supplier is to provide performance guarantee of the entire unit for a period of one year effective from commissioning date of the same.

L. Operating & Maintenance Manuals, spare part list & test documents:

i) Test documents: All test and inspection reports, recorder chart etc are to be suitably bound in the form of a book and is to be forwarded to OIL along with the equipment for retention, one book for each separator.

ii) Spare list: The supplier is to provide spare part list including technical brochures for the bought out control gears, control valves etc in the term of a bound book.

iii) Operation & Maintenance Manual: Four copies of operation and maintenance manual would be required by OIL. These should be supplied in the form of a bound book.

ITEM NO. 20 ; QUANTITY : 02 NOS.

Design, fabrication, unitization, testing and supply of two phase oil & gas separator as per API specification 12J, ASME section VIII Div-I complete with all mountings, accessories, piping and valves - all unitized and protected suitably and mounted on a robust oil field type skid as per the following specifications :

A. Service requirement: The separator unit will be used for initial production testing of well. The unit is to be designed and manufactured to meet the following service requirement:

- i) To separate liquid (Oil & Water) and gas efficiently from the well stream.
- ii) To arrest 99% entrained liquid particles from the separated gas for the particle size up to 10 micron.
- iii) To measure and record the gas flow rate of the separated gas.
- iv) Suitable provision to take liquid and gas samples for analysis.

B. Separator Sizing Parameters: The test separator unit is to be sized to suit the following service condition:

i) **Separator Configuration:** The separator should be horizontal, cylindrical shell type having dished end.

ii) **Well Stream Characteristics:** As the test unit will be used for initial production testing of newly drilled wells, the unit will be subjected to the well stream having a wide range of characteristics. The likely range of characteristics of the well fluid is given below for design purpose.

- a) Water content (Produced) : 0% - 90%
- b) API gravity of oil : 20 Deg - 35 Deg
- c) Water specific gravity : 1.02 - 1.08
- d) Gas gravity : 0.65 - 0.80 (Air = 1)
- e) Pour Point of oil : 27 Deg - 33 Deg C.
- f) Wax (Paraffin) content : 10% maximum by volume
- g) Sand /solid/slit content : There may be some amount of sand/slit/drilling fluids content in the well stream

iii) **Operating Pressure & Temperature:** The separator is to be sized for the following operating conditions:

- a) Operating pressure : 07 Kg/ Sq. Cm (100 Psig)
- b) Operating temperature : 30 Deg C - 43 Deg C

iv) **Total throughput:** The separator is to be sized for the following through put conditions:

- a) Liquid: Normal flow rate : 400 KLPD (2516 BPD)
Maximum flow rate : 600 KLPD (3774 BPD)
- b) Gas: Normal flow rate : 200,000 SCUM per day (7.20 MMSCUFD)
Maximum flow rate : 300,000 SCUM per day (10.80 MMSCUFD)

C. Mechanical Design & Fabrication of the vessel/separator unit: The separator, piping and valves must be designed and fabricated considering the following parameters in addition to the parameters given in para A and B above.

- a) The vessel outer diameter must not be less than 762 mm (30")
- b) Design temperature: 50 Deg C (120 Deg F)
- c) Corrosion allowance: 1.6 mm (1/16")
- d) Material of construction: As recommended by the relevant code.
- e) Hydraulic testing of the vessel and unit: 10.5 Kg/Sq. Cm (150 PSIG)
- f) All coupling connections and other pipe fittings must be rated for 210 Kg/Sq. Cm (3000 PSIG) as per ANSI B31.3.

- g) Radiography: 100% radiography required.
- h) Post-Weld heat treatment/stress relieving: Required for the entire vessel/separators.
- i) All flanges should be made of forged carbon steel conforming to ASTM A 105 and dimensions as per ANSI B 16.5 std. 300 class rating.
- j) Dished end shall be pressed and spun in dished head spinning machine only. Weld joint in dished end shall not be allowed.

D. Separator Internals: The following internal elements are a minimum requirement for the separator:

- a) Sufficient settling section: It must have good liquid depth volume.
- b) Inlet degassing Element: To remove gas from the well stream at the inlet.
- c) Baffles: To remove gas from Oil/Liquid during fluid flow within the vessel.
- d) Mist Extractor: Vane or knitted wire type to remove/arrest entrained oil/liquid particles from the separated gas.

E. Separator Connections: Each separator must be provided with the following connections to facilitate mounting of liquid level control gear, inlet/outlet piping, valves, gauges etc.

- a) One - 100 mm (4") nominal x ANSI 150 Class RF flanged connections/ opening for well stream inlet.
- b) One - 100 mm (4") nominal x ANSI 150 Class RF flanged opening for gas outlet.
- c) One - 200 mm (8") nominal x ANSI 150 Class RF flanged opening for mounting liquid level control gear.
- d) One - 50mm (2") nominal x ANSI 150 Class RF flanged opening for liquid outlet.
- e) Two - 75 mm (3") nominal x ANSI 150 Class RF flanged opening for mounting two safety relief valves.
- f) Two - 50 mm (2") nominal x ANSI 210 Kg/Sq. Cm (3000 Psig) WP coupling connection/opening for drainage.
- g) Five - 12mm (1/2") NPT x 210 Kg/Sq. Cm (3000 Psig) WP coupling connections for mounting liquid level gauge (2), Pressure gauge (2) and temperature gauge (1).
- h) Suitable manhole for internal inspection of the vessel.
- i) All flanged outlet/inlet connections must be fitted with companion flanges. Also, all the outlet/inlet connection should be provided with proper blind / plug for protection from damage during dispatch & entry of foreign material.

F. Separator Mountings: Each test separator is to be equipped with the following mountings:

- a) Control gear: Internal Ball Float Type Level Controller mounted complete assembly similar to fisher type 231C and mounted pilot 779k throttle type comprising of two spring loaded valves, rocker arm (linkage assy.) pilot relay assy. to give continuous out put pressure proportional to rise or fall of liquid level in side the vessel and also reversible in action in field & comprising of float road, lever. Counter weight, chain, adjustable screw, travel stop, & necessary link, bolt & nuts etc. with other specifications as per following:

Material : Forged ASTM, A-105 steel

Mounting : Right hand

Function : For controlling level of crude oil of API gravity 20 to 35oC

Control function : Proportional out put type

Output signal : 0.2-1kg/cm²

Rising Level : Increase out put

Material of Float : 316 SS

Stuffing box : SS with PTFE or Graphite asbestos packing similar to Fisher style C

Accessories : Filter Regulator suitable for operation of natural gas at maximum 18.3.kg/cm² with drain port at bottom

Nominal size : 200mm (8") RF as per ANSI B16.5, 150 # rating flange

Float size : 185 mm (7.75") OD rating 35 kg/cm² (500 PSI)

- b) One - Pressure controller to suit the duty applications (Pressure range: 0 - 15 Kg/Sq. Cm).
- c) One -Reflex type liquid level gauge complete with cocks & glass gauge suitable protected from external damage, WP 100 Psig (7 Kg/Sq.Cm).
- d) Two-ASME safety relief valve rating ANSI 150 Class RF, to relief full gas capacity against atmosphere. Set Pressure – 7.7 Kg/Sq. Cm (110 Psig)
- e) Two - Dial type Pressure gauge, (0 - 10 Kg/Sq. Cm) (6" dia).
- f) One - Dial type temperature gauge, (0 - 100 Deg C) (3" dia.).
- g) Assorted - Pneumatic lines, regulators as required.
- h) Support - Bottom skirt support, mounted rigidly to the skid.

G. Accessories, Piping & Valves etc.: Each separator should be complete with the following:

- a) 1 (One) no Diaphragm operated air to close type back pressure control valve 100 mm NB (4") x 150 class, suitably sized for specified gas capacity, rating ANSI 150 Class RF. Direct on line type as one complete unit to the following specification & general requirement:

Body : Globe, straight, through type

Body materials : Cast carbon steel (ASTM A 216 Gr. WCB)

No. of ports : Double

Bonnet : Plain bonnet

Trim (seat ring & plug): 316 SS with stellite facing (on seat & entire surface of the plug)

Gland type : Bolted gland

Seat ring & port size: Full

Plug characteristic: Quick opening or throttling with linear or equal percentage characteristic

Stem : Standard

Stuffing box packing: Teflon V ring PTFE

Diaphragm material: Chloroprene rubber with fabric reinforced

Actuator type : Spring loaded pneumatic operated diaphragm (single spring)

Spring range : 0.2 to 1.0 kg/cm² (maximum)

Air supply pressure: 1.4 kg/cm² (maximum)

Spring materials: Stainless steel (Cadmium plated)

Mounting : Field mounted

Temperature range : 5 - 60 deg C

Actuator action: Reversible type

End connection: Flanged type, raised face as per ANSI B 16.5 specification

Air connection: 1/4 inch NPT (F)

Fluid to be handled: Sweet natural gas (dry or wet) contaminated with moisture

Seat leakage classification: Class IV leakage as per ANSI/FCI 70-2-1991 Standard

Hysteresis error : 3% FS or less

Linearity : +/- 5% FS or less

Range-ability : 30:1

Action : On Air failure valve to open.

Casing : Weather Proof

The actuator yoke shall be provided with necessary arrangement for clamping pneumatic pressure indicating controller.

b) 1 (One) no Diaphragm operated control valve with valve positioner of size 50 mm NB (2") x 150 class (air to open). The valve should be direct on line type as one complete unit to the following specification & general requirement:

Upstream pressure : 07 kg/cm²
Body : Globe, straight, through type.
Body materials : Cast carbon steel (ASTM A 216 Gr. WCB).
No. of ports : Double
Bonnet : Plain bonnet
Trim (seat ring & plug): 316 SS with stellite facing (on seat & entire surface of the plug).
Gland type : Bolted gland
Seat ring & port size : Full
Plug characteristic : Quick opening or throttling with linear or equal percentage characteristic.
Stem : Standard
Stuffing box packing: Teflon V ring PTFE
Diaphragm material : Chloroprene rubber with fabric reinforced
Actuator type : Spring loaded pneumatic operated diaphragm
Spring range : 0.2 to 1.0 kg/cm² (maximum)
Air supply pressure: 1.4 kg/cm² (maximum)
Spring materials : Stainless steel (Cadmium plated)
Mounting : Field mounted
Valve positioner : Required
Temperature range: 5 - 45 deg C
Actuator action : Reversible type
End connection : Flanged type, raised face as per ANSI B 16.5 specification
Air connection : ¼ inch NPT (F)
Fluid to be handled : Crude oil + water
Seat leakage classification: as per ANSI/FCI 70-2-1991 Standard
Hysteresis error : 3% FS or less
Linearity : +/- 5% FS or less
Range-ability : 30:1
Action : On Air failure valve to close.
Casing : Weather proof

The actuator yoke shall be provided with necessary arrangement for clamping pneumatic pressure indicating controller.

c) 01 (one) number flow cum pressure recorder for measuring gas production. The meter must be completed with suitable meter run and 7 nos. of orifice plates of different sizes as per following specifications.

Case : Made of die-cast Aluminium alloy and are finished in black polyurethane electrostatic powder paint with high resistance to weathering, scratches, marring and industrial fumes. The door should be hinged to the case with aircraft type hinge to type 302 stainless steel. A closed-cell neoprene gasket, non-absorbent to fluids and resistance to oils should provide the seal between the door and the case having locking arrangement.

Mounting : Suitable for mounting on 100 mm (4 inch) O.D pipe.
Pressure Range: 0- 15 Kg/cm²

DP Range: 0-100 inches of WC

Pressure Element: Precision wound helical type Bourdon element

Element Material: 316SS

DP Unit: Barton Model 199 DPU or equivalent, Material 316SS

Chart : 12" (300 mm) circular chart with marking for differential (square root) and static pressure (linear)

Chart Drive: Spring wound chart drive, Minimum 7 day wind.

Chart Speed: One revolution per day

Pens : Two pens for flow and pressure

Process Medium: Natural gas

Process Connection for Pressure: ½" NPT (M), 12.7 mm

Accuracy: ± 0.5% of full scale for differential pressure and ± 1% of full scale for static pressure

Recording Mechanism: All parts of the recording mechanism should be made of stainless steel.

Micrometer adjustment for zero, range and linearity for fast and accurate calibration should be available.

Accessories: Each recorder should be complete with the following accessories:

" Charts: 200 nos.

" Keys for door

" Spare pen arm: 1 set

" Fibre tip type nib: 100 nos. red and 100 nos. blue

" Three-valve manifold with ½" (12.7 mm) NPT needle valves: 1 set with ½" NPT (F), 12.7 mm process connection.

d) Two - Sampling points 12mm (1/2" NPT) one for liquid and one for gas complete with needle valve.

e) By-pass Arrangement: The unit shall have the bypass arrangement complete with isolating valves for the following:

" For the test separator between inlet and liquid & gas outlet.

" For gas back pressure valve and gas flow meter/meter run.

" For liquid dump valve.

f) Inlet, Isolating and Separator Drain Valve: All valves must be either gate valves or plug valves manufactured as per API Std. 600. The gate valves must be of rising stem type. The valves should be of following sizes and ratings:

" Inlet Valve: 100mm (4") nominal x ANSI 150 Class RF, API 600

" Isolating/Exit Valves: 100mm (4") x ANSI 150 Class RF, API 600

" Drain Valve: 50mm (2") screwed or 150 Class RF Valves API 600

g) Gas Scrubber and Piping: A vertical gas scrubber complete with all accessories is required to be installed on the skid for instrument gas supply. The scrubber should be complete with regulator, relief valves, control valves etc. and other mountings e.g. pressure/ temperature indicator, level gauge etc. It should also have a drain outlet.

h) All pneumatic supplies to control equipments shall be provided with filter cum pressure regulator.

i) Piping: Each test separator should be complete with all process piping and accessories

installed and connected to the vessel then anchored or rigidly attached to the skid. The inlet and outlet (Oil & Gas) piping are to be taken out and placed at the end of the skid. The ends must be fitted with ANSI 150 Class RF flanges, such that these can be easily connected to the field lines at the well site. All pipe works must be made out of steel seamless, schedule 40, standard API line conforming to API 5L and fittings as per ANSI B 16.5 & 31.3.

j) Skid: The entire unit along with piping etc must be mounted on an Oil-field type robust skid. The skid must be provided with protective rail/guards so as to prevent the vessel, piping, accessories from getting damaged during transportation, loading and unloading on the truck. No component should remain protruded out beyond the protective guard of the skid. Suitable lifting hooks/attachment should be provided on the skid for lifting during loading and unloading on the truck. The skid dimension should be restricted to the following: Length: 9.0 m, Width: 3.0 m, Height: 3.0 m.

H. Code of practice and standard to be followed: The unit should be manufactured conforming to the following code of practices and standard.

- a) Separator: API standard 12J & ASME section VIII, Div. I
- b) Pipe fittings, flanges etc.: ANSI B 31.3, ANSI B 16.5
- c) Valves: API standard 600
- d) Safety Relief Valves: ASME section VIII, Div-I
- e) Structural: IS 226
- f) Material of construction: As per above codes.

I. Painting: The internal and external surface of the unit should be cleaned properly and painted with protective anti-corrosion paint before despatch.

J. Marking: Separator shall be provided with name plate of corrosion resistant material securely attached to a suitable bracket welded to the shell or stamped on a steel name plate seal welded to the shell. The name plate should bear the following information:

- (i) Manufacturer's Name
- (ii) Manufacturer's Serial No.
- (iii) Year of manufacture
- (iv) P.O. No.
- (v) #Manufactured for OIL#
- (vi) Weight empty, Kg
- (vii) Shell size OD X Length, mm
- (viii) Shell & dished end thickness, mm
- (ix) Maximum design pressure, Kg/Sq. Cm
- (x) Maximum design temperature, Deg C
- (xi) Liquid flow rate, normal & maximum, KLPD
- (xii) Gas flow rate, normal and maximum, SCUM per day at 30 Kg/Sq. Cm.

K. Approval, Inspection & Testing:

a. Drawing & Equipment approval :

- i) The supplier has to submit the flow diagram (P & I) of the unit and fabrication drawing of the vessel for approvals from OIL before starting of the manufacturing process.
- ii) The bidder has to submit the list of all the accessories, mountings & pipings (all the bought out items) and their make, model (if any) and sizes etc. as per OIL approved vendors list as per

Annexure-A below and get the same approved by OIL. Only after obtaining the approval, they can go ahead with the manufacturing of the unit.

b. Third party inspection: The vessel will be inspected by any one of third Party Inspection Agencies approved by Oil India Ltd. (M/s. Lloyds, M/s Bureau Veritas, M/s. RITES, M/s. I.R.S. and M/s DNV), with following scope of work:

- i) To review qualification of the welder and welding procedure specifications (WPS) as per ASME code.
- ii) Verification of physical and chemical properties of raw materials as per API specifications.
- iii) To ensure compliance with respect to drawing approved by OIL for fabrication of the vessel.
- iv) Stage wise inspection of sub assemblies viz inlet and outlet, mist extractor assembly, dished end, companion flanges etc. before final assembly.
- v) To review the radio graphed film of weld joints as per ASME code and heat treatment chart.
- vi) To witness final dimensional inspection and ensure proper workmanship.
- vii) To witness hydro test of the vessel.
- viii) The above inspection is for general guide line only. If third party desire to carry out any additional inspection as per ASME code/API specification and the same should be included under intimation to Oil India Limited.
- ix) To document and issue inspection certificate.
- x) Third party inspection by other than any one of the above mentioned TPI agencies will not be accepted.

c. Inspection by OIL : Final inspection will be carried out by OIL when the separator is completed (prior to painting of the unit) and mounted on the skid and the pipe works are almost ready. The supplier are to intimate with us at least 15 to 20 days prior to the inspection. OIL inspector will inspect/witness the following:

- i) To witness the hydraulic test. Pressure Recorder should be fitted. Vessel and pipe works will be separately tested. The testing will be first done at 1.5 times the Design pressure for 30 minutes and then reducing pressure to design pressure, testing will be done for 24 hrs. The recorder charts would be signed by OIL Engineer at the time of testing. The hydraulic test certificates report and recorder chart are to be sent to OIL.
- ii) To witness the functioning of all pneumatic control gears and control valves, for which the supplier is to supply instrument air.
- iii) To inspect the radiographic plates and reports. All these documents are to be sent to OIL along with the equipment.
- iv) To inspect the post weld heat treatment/stress relieving report and chart which are to sent to OIL later on along with the equipment.

d. Field Testing & Performance Guarantee:

- i) On receipt of the unit at site, OIL will intimate the supplier to depute their representative(s) to supervise the commissioning of the units. OIL's observation and report in this regard will be final. During the course of commissioning, if any problem is encountered, the supplier must arrange to rectify the same within one month time without any extra cost to OIL.
- ii) The supplier is to provide performance guarantee of the entire unit for a period of one year effective from commissioning date of the same.

L. Operating & Maintenance Manuals, spare part list & test documents:

- i) Test documents: All test and inspection reports, recorder chart etc are to be suitably bound in the form of a book and is to be forwarded to OIL along with the equipment for retention, one book for each separator.
- ii) Spare list: The supplier is to provide spare part list including technical brochures for the bought out control gears, control valves etc in the term of a bound book.
- iii) Operation & Maintenance Manual: Four copies of operation and maintenance manual would be required by OIL. These should be supplied in the form of a bound book.

OIL's APPROVED VENDORS LIST FOR INSTRUMENTATION PART (FOR BOTH ITEM NO. 10 & 20)

a) Pressure/Temperature gauges

- " Odin
- " Wika
- " Warea
- " Ashcroft

b) Level gauges

- " Levcon
- " Chemtrols
- " Norriseal
- " Tectron

c) Control valves & Valve Positioners

- " Fisher Xomox
- " MIL
- " Samson Controls

d) Pressure regulators

- " Fisher-Xomox
- " Shavo Norgren
- " Placka

b) Pneumatic Pressure Controller

- " Fisher
- " ABB
- " Yokogawa
- " Foxboro

c) Pneumatic Level Controller

- " Fisher
- " Procon Engineers

d) Circular Chart Two Pen Recorder " ITT Barton " Procon Engineers " Cameron Measurement Systems " Yokogawa	
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NOTE:

Bidders should submit their bids (preferably in tabular form) explicitly mentioning compliance / non compliance to all the NIT terms and conditions of NIT.

Annexure- DDD

INTEGRITY PACT

Between

Oil India Limited (OIL) hereinafter referred to as "The Principal"

And

(Name of the bidder).....hereinafter referred to as "The Bidder/Contractor" |

Preamble :

The Principal intends to award, under laid down organizational procedures, contract/s for Tender No. **SDI8091P16**. The Principal values full compliance with all relevant laws and regulations, and the principles of economic use of resources, and of fairness and transparency in its relations with its Bidder/s and Contractor/s.

In order to achieve these goals, the Principal cooperates with the renowned international Non-Governmental Organisation "Transparency International" (TI). Following TI's national and international experience, the Principal will appoint an external independent Monitor who will monitor the tender process and the execution of the contract for compliance with the principles mentioned above.

Section 1 - Commitments of the Principal

- (1) The Principal commits itself to take all measures necessary to prevent corruption and to observe the following principles:-
1. No employee of the Principal, personally or through family members, will in connection with the tender for, or the execution of a contract, demand, take a promise for or accept, for him/herself or third person, any material or immaterial benefit which he/she is not legally entitled to.
 2. The Principal will, during the tender process treat all Bidders with equity and reason. The Principal will in particular, before and during the tender process, provide to all Bidders the same information and will not provide to any Bidder confidential/additional information through which the Bidder could obtain an advantage in relation to the tender process or the contract execution.
 3. The Principal will exclude from the process all known prejudiced persons.
- (2) If the Principal obtains information on the conduct of any of its employees which is a criminal offence under the relevant Anti-Corruption Laws of India, or if there be a Page 2 of 6 substantive suspicion in this regard, the Principal will inform its Vigilance Office and in addition can initiate disciplinary actions.

Section 2 - Commitments of the Bidder/Contractor

- (1) The Bidder/Contractor commits itself to take all measures necessary to prevent corruption. He commits himself to observe the following principles during his participation in the tender process and during the contract execution.
1. The Bidder/Contractor will not, directly or through any other person or firm, offer, promise or give to any of the Principal's employees involved in the tender process or the execution of the contract or to any third person any material or immaterial benefit which he/she is not legally entitled to, in order to obtain in exchange any advantage of any kind whatsoever during the tender process or during the execution of the contract.
 2. The Bidder/Contractor will not enter with other Bidders into any undisclosed agreement or understanding, whether formal or informal. This applies in particular to prices, specifications, certifications, Subsidiary contracts, submission or non-submission of bids or any other actions to restrict competitiveness or to introduce cartelisation in the bidding process.
 3. The Bidder/Contractor will not commit any offence under the relevant Anticorruption Laws of India; further the Bidder/Contractor will not use improperly, for purposes of competition or personal gain, or pass on to others, any information or document provided by the Principal as part of the business relationship, regarding plans, technical proposals and business details, including information contained or transmitted electronically.
 4. The Bidder/Contractor will, when presenting his bid, disclose any and all payments he has made, is committed to or intends to make to agents, brokers or any other intermediaries in connection with the award of the contract.
- (2) The Bidder/Contractor will not instigate third persons to commit offences outlined above or be an accessory to such offences.

Section 3 - Disqualification from tender process and exclusion from future Contracts

If the Bidder, before contract award has committed a transgression through a violation of Section 2 or in any other form such as to put his reliability or risibility as Bidder into question, the Principal is entitled to disqualify the Bidder from the tender process or to terminate the contract, if already signed, for such reason.

1. If the Bidder/Contractor has committed a transgression through a violation of Section 2 such as to put his reliability or credibility into question, the Principal is entitled also to exclude the Bidder/Contractor from future contract award processes. The imposition and duration of the exclusion will be determined by the severity of the transgression. The severity will be determined by the circumstances of the case, in particular the number of transgressions, the position of the transgressions within the company hierarchy of the Bidder and the amount of the damage. The exclusion will be imposed for a minimum of 6 months and maximum of 3 years.

2. The Bidder accepts and undertakes to respect and uphold the Principal's Absolute right to resort to and impose such exclusion and further accepts and undertakes not to challenge or question such exclusion on any ground, including the lack of any hearing before the decision to resort to such exclusion is taken. This undertaking is given freely and after obtaining independent legal advice.
3. If the Bidder/Contractor can prove that he has restored/recouped the Damage caused by him and has installed a suitable corruption prevention system, the Principal may revoke the exclusion prematurely.
1. A transgression is considered to have occurred if in light of available evidence no reasonable doubt is possible.

Section 4 - Compensation for Damages

1. If the Principal has disqualified the Bidder from the tender process prior to the award according to Section 3, the Principal is entitled to demand and recover from the Bidder liquidated damages equivalent to 3 % of the value of the offer or the amount equivalent to Earnest Money Deposit/Bid Security, whichever is higher.
2. If the Principal has terminated the contract according to Section 3, or if the Principal is entitled to terminate the contract according to section 3, the Principal shall be entitled to demand and recover from the Contractor liquidated damages equivalent to 5% of the contract value or the amount equivalent to Security Deposit/Performance Bank Guarantee, whichever is higher.
3. The bidder agrees and undertakes to pay the said amounts without protest or demur subject only to condition that if the Bidder/Contractor can prove and establish that the exclusion of the Bidder from the tender process or the termination of the contract after the contract award has caused no damage or less damage than the amount or the liquidated damages, the Bidder/Contractor shall compensate the Principal only to the extent of the damage in the amount proved.

Section 5 - Previous transgression

1. The Bidder declares that no previous transgression occurred in the last 3 years with any other Company in any country conforming to the TI approach or with any other Public Sector Enterprise in India that could justify his exclusion from the tender process.
2. If the Bidder makes incorrect statement on this subject, he can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

Section 6 - Equal treatment of all Bidders/Contractor/Subcontractors

1. The Bidder/Contractor undertakes to demand from all subcontractors a commitment in conformity with this Integrity Pact, and to submit it to the Principal before contract signing.
2. The Principal will enter into agreements with identical conditions as this one with all Bidders, Contractors and Subcontractors.

3. The Principal will disqualify from the tender process all bidders who do not sign this Pact or violate its provisions.

Section 7 - Criminal charges against violating Bidders/Contractors/ Subcontractors

If the Principal obtains knowledge of conduct of a Bidder, Contractor or Subcontractor, or of an employee or a representative or an associate of a Bidder, Contractor or Subcontractor, which constitutes corruption, or if the Principal has substantive suspicion in this regard, the Principal will inform the Vigilance Office.

Section 8 - External Independent Monitor/Monitors (three in number depending on the size of the contract) (to be decided by the Chairperson of the Principal)

1. The Principal appoints competent and credible external independent Monitor for this Pact. The task of the Monitor is to review independently and objectively, whether and to what extent the parties comply with the obligations under this agreement.
2. The Monitor is not subject to instructions by the representatives of the parties and performs his functions neutrally and independently. He reports to the Chairperson of the Board of the Principal.
3. The Contractor accepts that the Monitor has the right to access without restriction to all Project documentation of the Principal including that provided by the Contractor. The Contractor will also grant the Monitor, upon his request and demonstration of a valid interest, unrestricted and unconditional access to his project documentation. The same is applicable to Subcontractors. The Monitor is under contractual obligation to treat the information and documents of the Bidder/Contractor/Subcontractor with confidentiality.
4. The Principal will provide to the Monitor sufficient information about all meetings among the parties related to the Project provided such meetings could have an impact on the contractual relations between the Principal and the Contractor. The parties offer to the Monitor the option to participate in such meetings.
5. As soon as the Monitor notices, or believes to notice, a violation of this agreement, he will so inform the Management of the Principal and request the Management to discontinue or heal the violation, or to take other relevant action. The monitor can in this regard submit non-binding recommendations. Beyond this, the Monitor has no right to demand from the parties that they act in a specific manner, refrain from action or tolerate action.
6. The Monitor will submit a written report to the Chairperson of the Board of the Principal within 8 to 10 weeks from the date of reference or intimation to him by the 'Principal' and, should the occasion arise, submit proposals for correcting problematic situations.
7. If the Monitor has reported to the Chairperson of the Board a substantiated suspicion of an offence under relevant Anti-Corruption Laws of India, and the Chairperson has not, within reasonable time, taken visible action to proceed

against such offence or reported it to the Vigilance Office, the Monitor may also transmit this information directly to the Central Vigilance Commissioner, Government of India.

8. The word 'Monitor' would include both singular and plural.

Section 9 - Pact Duration

This Pact begins when both parties have legally signed it. It expires for the Contractor 12 months after the last payment under the respective contract, and for all other Bidders 6 months after the contract has been awarded.

If any claim is made/ lodged during this time, the same shall be binding and continue to be valid despite the lapse of this pact as specified above, unless it is discharged/determined by Chairperson of the Principal.

Section 10 - Other provisions

1. This agreement is subject to Indian Law. Place of performance and jurisdiction is the Registered Office of the Principal, i.e. New Delhi.
2. Changes and supplements as well as termination notices need to be made in writing. Side agreements have not been made.
3. If the Contractor is a partnership or a consortium, this agreement must be, signed by all partners or consortium members.
4. Should one or several provisions of this agreement turn out to be invalid, the remainder of this agreement remains valid. In this case, the parties will strive to come to an agreement to their original intentions.

R.BARMAN
SR. MANAGER MATERIALS (IP)

For the Principal

For the Bidder/Contractor

Place. Duliajan.

Witness 1 :

Date 07.08.2015 .

Witness 2 :

Technical Bid Checklist

Annexure-EEE

Tender No.			
Bidder's Name :			
		Compliance by Bidder	
SL. NO.	BEC / TENDER REQUIREMENTS	Indicate 'Confirmed' / 'Not Confirmed' / Not applicable	Indicate Corresponding page ref. of unpriced bid or Comments
1	Bidder to confirm that he has not taken any exception/deviations to the bid document .		
2	Confirm that the product offered strictly conform to the technical specifications.		
3	Confirm that the Offer has been made with Bid Bond / Bank Guarantee / Earnest Money along with the offer (Wherever Applicable) ?		
4	Confirm unconditional validity of the bid for 120 days from the date of opening of techno-commercial bid.		
5	Confirm that the prices offered are firm and / or without any qualifications?		
6	Confirm that all relevant fields in the on-line bidding format been filled in by the bidders for the items quoted by them.		
7	Confirm that the the price bid is in conformity with OIL's online bidding format ?		
8	Confirm that the Bid comply with all the terms & conditions ?		
9	Confirm that the offers and all attached documents are digitally signed using digital signatures issued by an acceptable Certifying Authority (CA) as per Indian IT Act 2000.		
10	CONFIRM THAT YOU HAVE SUBMITTED THE DULY SIGNED INTEGRITY PACT DOCUMENT (Wherever Applicable)		
11	CONFIRM THAT YOU HAVE SHALL SUBMIT PERFORMANCE BANK GUARANTEE AS PER NIT IN THE EVENT OF PLACEMENT OF ORDER ON YOU (Wherever Applicable)		
12	CONFIRM THAT YOU HAVE SUBMITTED DOCUMENTS AS PER GENERAL QUALIFICATION CRITERIA		
13	Confirm that you have submitted Name and Full Address of Issuing Bank including Telephone, Fax Nos and Email id of branch manager where Bid security has been submitted as Bank Guarantee.		

NOTE: Please fill up the greyed cells only.

Response Sheet

Annexure-FFF

Tender No.	
Bidders Name	

Bidders Response Sheet

Sl No.	Description	Remarks
1	Name of Bidder	
2	Whether tender document purchased from OIL's offices.	
3	Place of Despatch	
4	Whether Freight charges have been included in your quoted prices	
5	Whether Insurance charges have been included in your quoted prices	
6	Make of quoted Product	
7	Offered Validity of Bid as per NIT	
8	Delivery Period in weeks from placement of order	
9	Complied to Standard Payment Terms of OIL or not.	
10	Bid Security Submitted (if applicable)	
11	Details of Bid Security Submitted to OIL (if applicable)	
	a) Bid Security Amount (In Rs):	
	b) Bid Security Valid upto:	
12	If Bid security submitted as Bank Guarantee, Name and Full Address of Issuing Bank including Telephone, Fax Nos and Email id of branch manager	
13	Bid Security if Not submitted reasons thereof	
14	Whether you shall submit Performance Security in the event of placement of order on you (if applicable)	
15	Integrity Pact Submitted (if applicable)	
16	Whether submitted documents in support of General Qualification criteria of NIT	
17	If bidder is Small scale unit whether you have quoted your own product	
18	If bidder is Small scale unit whether you are eligible for purchase preference (as per Govt guidelines)	
19	Whether filled up the bank details for online payment as per Annexure GGG	

NOTE: Please fill up the greyed cells only.

**(TO BE FILLED UP BY ALL THE VENDOR IN THEIR OWN LETER HEAD)
(ALL FIELDS ARE MANDATORY)**

Tender No. :.....
Name of Beneficiary :M/s.....
Vendor Code :.....
Address :.....
.....
Phone No. (Land Line) :.....
Mobile No. :.....
E-mail address :.....
Bank Account No. (Minimum
Eleven Digit No.) :.....
Bank Name :.....
Branch :.....
Complete Address of your
Bank :.....
IFSC Code of your Bank
a) RTGS :.....
b) NEFT :.....
PAN :.....
VAT Registration No. :.....
CST Registration No. :.....
Service Tax Registration No. :.....
Provident Fund Registration :.....

I/We confirm and agree that all payments due to me/us from Oil India Limited can be remitted to our above mentioned account directly and we shall not hold Oil India Limited responsible if the amount due from Oil India Limited is remitted to wrong account due to incorrect details furnished by us.

Office Seal

.....
Signature of Vendor

Counter Signed by Banker:
Seal of Bank:

Enclosure: Self attested photocopies of the following documents-

- 1) PAN Card
- 2) VAT Registration Certificate
- 3) Service Tax Registration
- 4) CST Registration
- 5) Provident Registration Certificate
- 6) Cancelled cheque of the bank account mentioned above (in original).
- 7) Bank Statement not older than 15 days on the date of submission.