

OIL & GAS DEVELOPMENT COMPANY LIMITED



TENDER ENQUIRY NO. PROC-SERVICES/CB/EXPL-5184/2021

HIRING OF SERVICES FOR 2D SEISMIC DATA RE-PROCESSING
UPTO PRE-STACK TIME MIGRATION

Note:

Bid bond of **USD 2,865/- (US Dollar Two Thousand Eight Hundred Sixty Five Only)** must be submitted with the technical bid. Please see tender documents for further detail.

The master set of tender documents (services) uploaded on OGDCL website (www.ogdcl.com) is the integral part of this TOR.

TERMS OF REFERENCE (TOR)
FOR
HIRING OF SERVICES FOR
2D SEISMIC DATA RE-PROCESSING UPTO
PRE-STACK TIME MIGRATION



ZHOB E.L

1.0 Introduction:

Zhob E. L comprising an area of 2473.45 Sq. Kms falls in Sherani, Musakhel and Zhob district of Baluchistan Province and FR Dera Ismail Khan of Khyber Pakhtunkhwa province, Pakistan. Oil & Gas Development Company Limited (OGDCL) is the Operator of the block with working interests of 100%. The map of the area is shown as below.

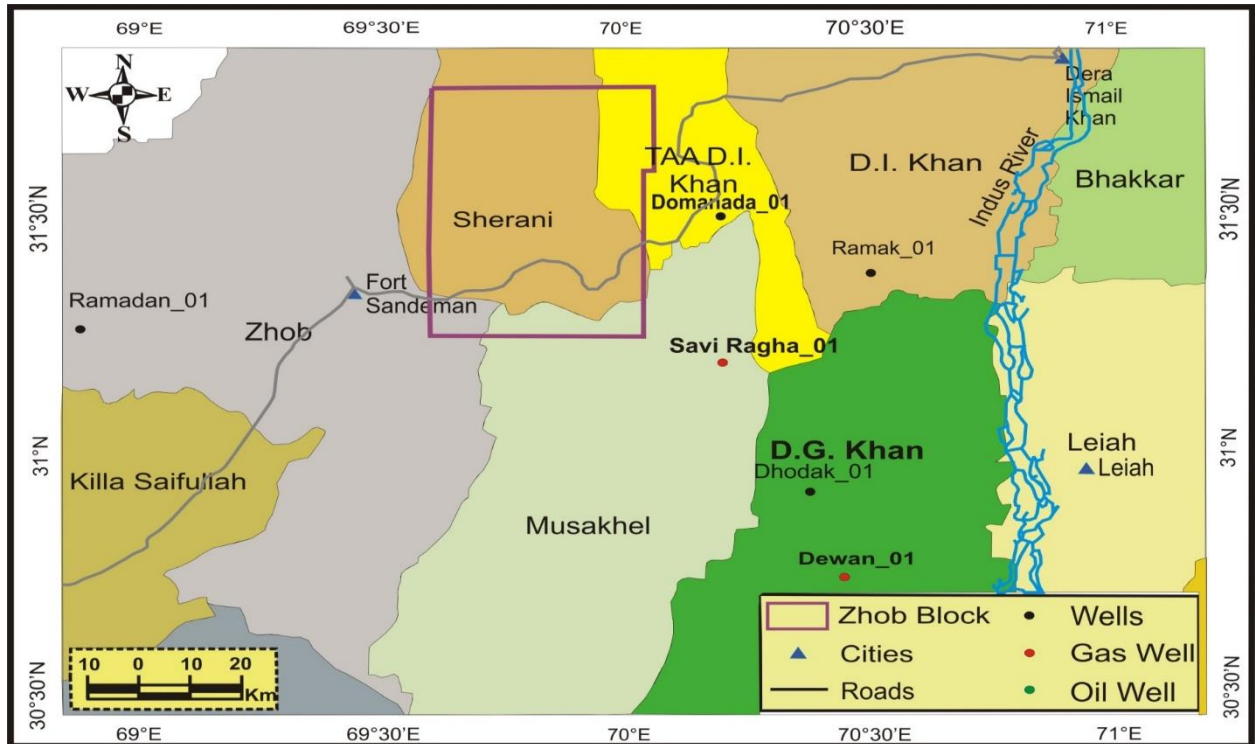


Figure-1: Project area latitudes and longitude on map

Zhob E.L boundary Coordinated						
Coordinates are in WGS84						
	Latitude			Longitude		
	Degree	Min	sec	Degree	Min	sec
A	31	15	0	69	36	0
B	31	15	0	70	2	40
C	31	35	44	70	2	40
D	31	35	44	70	3	36.72
E	31	46	3.72	70	3	36.72
F	31	46	3.72	69	36	0
A	31	15	0	69	36	0

Table-1: Project area latitudes and longitudes

2.0 Zhob Geological Framework:

Geologically, Zhob Block is located in north eastern part of Suleiman Fold Belt, on the western edge of Indian plate. Suleiman Fold belt is bounded to the west and north by Pishin-Kakar Khorasan Basin through a left lateral strike slip Fault. The area shows intense deformation, covering parts of rugged topography and steep dips. In the concession, most of the anticlinal structures have Jurassic limestone exposed in the core while generally, the rocks from Jurassic to recent are present in the block area.

Zhob E.L. lies in Sulaiman Fold and Thrust Belt. Sulaiman Fold and Thrust Belt is a prolific gas and gas/condensate producer area with major fields like Dhodak, Pirkoh, Loti, Uch, and Sui while some oil and gas seeps are also reported in this region. The discovered Hydrocarbon reserves point out the presence of a proven petroleum system in this tectonic province. The main producing reservoirs in the region (Sulaiman Fold Belt) are Sui Main Limestone, Lower Rani Kot /Pab Sandstone Mughalkot/Parh, Sembar and Chiltan Limestone. Sembar Formation of Cretaceous age is proven source rocks in the area while Shales of Goru Formation of Cretaceous age, Shales of Rani Kot Formation of Paleocene age and a thick sequence of Ghazij shales may also act as potential source rock in the area.

The block is surrounded by mountains with an elevation range from 1200 m to 2400 m Approx above mean sea level (MSL).

3.0 Zhob 2D Seismic Project:

A total of Approx. **573 L.km** (Surface coverage) has been acquired in Zhob E.L. Dynamite is the only source used in whole project. Total 19 seismic lines (15 dip lines and 04 strike lines) have been acquired in the E.L. by OGDCL's own seismic crew.

The shallow reservoir targets lie at 700 to 1500 ms level with compressional tectonic involved in subsurface structuration. The deeper targets lie at 1500-2500 ms level. Possible further deeper targets may also be present around 2500-3500 which are still to be tested/proven in the area. Previously no seismic data has been acquired or any well has been drilled in Zhob E.L.

a) Base Map showing acquired 2D Seismic Lines in Zhob E.L is given as below;

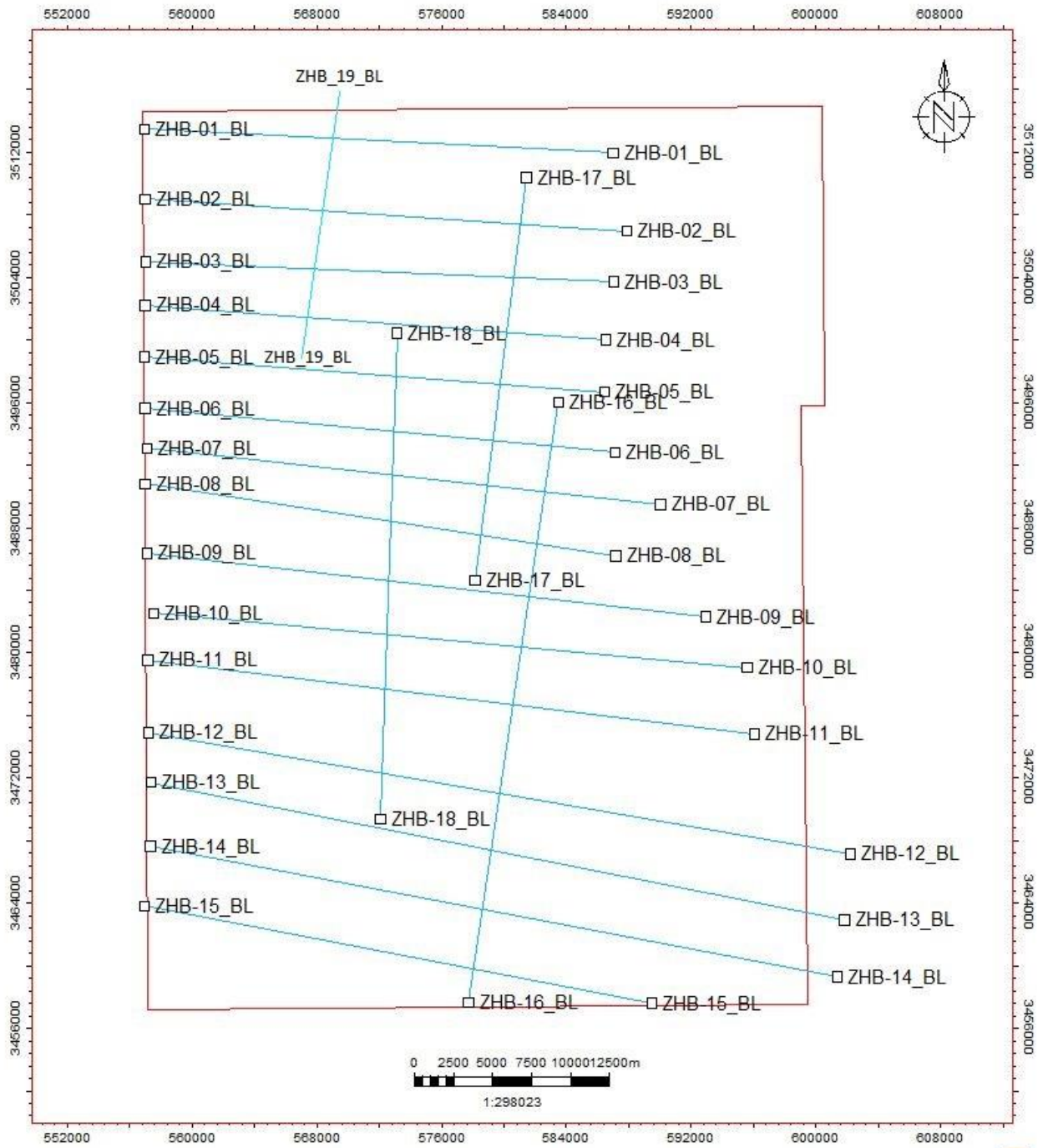


Figure-2: Base map of project area

b) The details of 2D seismic lines with tentative line kms of Zhob project as per below table.

Line Name	Tentative L.km	Line Name	Tentative L.km
ZHB-01	19.55	ZHB-11	31.61
ZHB-02	29.73	ZHB-12	39.24
ZHB-03	29.53	ZHB-13	39.90
ZHB-04	29.52	ZHB-14	34.48
ZHB-05	29.24	ZHB-15	32.88
ZHB-06	29.63	ZHB-16	38.72
ZHB-07	28.80	ZHB-17	25
ZHB-08	28.23	ZHB-18	31
ZHB-09	27.55	ZHB-19	17.11
ZHB-10	31.1		
Tentative Total L.km	Approx.573		

Table-2: Project lines and its length in Kilometers

c) Seismic acquisition parameters of Zhob E.L. 2D Seismic Project are:

Geometry

- Spread Type: Symmetric split spread
- No. of Active Channels: 560 Channels & 480 (For few Lines)
- Source Interval : 50 meters
- Group Interval : 25 meters
- CMP Fold : 140
- Near Offset : +/- 37.5 m
- Far Offset : +/- 7012.5m & 6000 m (For few Lines)

Receiver Parameters

- Geophones/Channel: 24 (12 Elements *2 strings)
- Geophone Array: Linear Array(centered at the picket)
- Geophone Space: 1.04 m
- Array Length: 23.95 m (to ensure elevation difference<5m, compress or rotate or brunch array)

Source Parameters

Single Deep Hole

- Source Interval: 50m
- Source Type: Dynamite
- No. of Holes: Single Hole
- Hole Depth: 18 meters
- Charge Size: 8 Kgs with 2 piece of Detonator

Pattern Holes/Pop Shots

- Source Interval: 50m
- Source Type: Dynamite

- No. of Holes: 10 Holes
- Hole Depth: 1.8 meters
- Charge Size: 0.5 Kg/hole with 1 piece of Detonator/hole

Supporting documentation:

Observer reports, Survey listings (Co-ordinates / elevation lists), SPS files, W-Z data / Up-hole data

4.0 Scope of Work:

- a) The 2D processing services shall include processing up to PSTM level.
The Contractor shall process the data as per sequence of **Annexure-I**, along with other advance processing modules offered by the contractor.
- b) The data is required to be processed at 2ms sampling interval with full record length of 6 seconds along with true amplitude recovery.
- c) The shallow target horizons are expected at (Two Way Time from SRD) 700 to 1500 ms level with compressional tectonic involved in subsurface structuration. The deeper target lies at 1500-2500 ms level. Possible further deeper targets may be present around 2500-3500 which are still to be evaluated in the area. The times vary over the area, as it is highly deformed by tectonic activity.
- d) The contractor shall use the state-of-art computer system with internationally used software capable of carrying out 2D time processing by deploying professionals having seismic data processing experience as per **Annexure-IV**. The contractor shall provide digital data of all the outputs, experimentation, intermediate and final processing, in acceptable format loadable on workstation for QC & interpretation. The contractor shall provide final deliverables, as mentioned in **Annexure-III**. The contractor would provide weekly progress report along with Gantt chart in a timely manner.
- e) Contractor will execute the complete project within turnaround time given in the TOR.

5.0 Objectives:

- a) The primary objective of seismic data processing is to have best quality data in Time.
- b) A high quality 2D seismic data with free of multiples, enhanced S/N Ratio and improved frequency band width.
- c) Define accurate Reflector Character in terms of vertical and horizontal resolution & continuity.
- d) To improve the overall resolution and continuity of seismic data and properly image the subsurface configuration.

- e) Identify and map major and minor faults with respect to shallow and deep Exploration/Development targets. Fault definition and horizon continuity is extremely critical in the project area.
- f) To have a data set in terms of broadband preserved amplitude, phase, frequency and statics to be used for structural interpretation.

6.0 Seismic Data Processing Sequence:

The processing steps would be required to be applied in manner so that amplitude, frequencies and phase of the data remain preserved and output yield is of enhanced S/N ratio, improved broadband spectrum and high resolution. However, a proposed standard processing sequence for PSTM is provided in the **Annexure-I** and can be modified according to the requirement with no cost effect. However, the actual sequence will be determined at each step of processing in consultation with the company representatives.

7.0 Test Line Processing

The bidders would process one test line (ZHB-07 of about 28.8 L.km) from Zhob E.L 2D Seismic plan for free of cost up to PSTM level. Maximum turnaround time for test line processing will be 6 weeks from the date of handing over data to bidders. Test line processing received after 06 weeks will not be entertained for any further evaluation. No exception will be accepted after bids submission and strict compliance of TOR will be adhered.

8.0 Parameters Testing/QC:

The contractor shall submit the data in the form of power point presentation(s) and SEG Y for comparison of qualitative results and decision making. The contractor would be required to submit its recommendations regarding processing sequence/parameter selection. The final decision, however, would be of the Company. The Company's professionals will participate in the project for QC purpose at the stages as proposed in the **Annexure-IV (Cat. No. 7)**. The contractor would be required to provide the QC display of each processing step after extensive testing in order to select the optimum parameters if there is some additional information obtained from testing then that will also be included, the company can ask for the provision of data in SEG Y/PPT/TIFF/CGM etc. as and when required without any additional cost.

9.0 Rates of Processing

The contractor shall specify Lump sum rates in US \$ per L. Km for 2D up to Pre-stack Time Migration as per **Annexure-II**. The processing rate should be inclusive of all taxes, duties, courier charges, levy etc. and deliverables as per **Annexure-III** except Provincial Sales Tax/ICT Tax on

Services in Pakistan. Any additional processing module may be applied in processing flow for improvement of data quality with mutual consent of the company and contractor without affecting the cost of the project.

10.0 Technical Evaluation Criteria:

- a) The Technical evaluation will be based on the technical evaluation tables **Annexure-IV and Annexure-V**. The only bidders that fulfill mandatory requirements as per Annexure-IV will be considered in further technical evaluation, Annexure-V. The bidders will have to pass (70% marks) in technical evaluation, Annexure-V. The potential bidders are required to strictly follow the sequence of Technical Evaluation Criteria and submit their proposals accordingly.
- b) For final bid evaluation, 80% weightage would be given to Technical Evaluation **Annexure-V** and 20% weightage would be given to Financial Evaluation **Annexure-II**. The lowest bidder will attain the maximum points in financial evaluation and others would be ranked on sliding scale. The points obtained in technical evaluation, and financial evaluation will then be combined and the contract will be awarded to the bidder obtaining maximum points.
- c) The contractor must have adequate experience in 2D seismic data processing especially in the Fold & thrust belt regimes.
- d) The contractor must have workable project schedule and turnaround time for 2D Project. The bidders should submit project schedule in the form of Gantt chart.
- e) The contractor must provide schedule for the participation of professionals from the Client for the QC of the processing steps. Contractor shall provide a phase wise work program for the participation of the client professionals in line with **Annexure-IV**, Contractor will be bound to take all necessary measures to facilitate the Client's participation process. Any delay due to visa, air tickets etc. will be accommodated by the contractor, however cost of traveling and lodging will be borne by the Client.

11.0 Period of Contract

The contractor is required to make sufficient arrangements to perform the task within the time frame of 06 months processing time up to PSTM level and additional 01 month is for Deliverables.

12.0 Data Confidentiality / liability

The contractor shall be solely responsible for secrecy, loss or damage of data due to any reason including fire, theft etc. of any documents/cartridges/soft copies and other important documents /CDs etc. pertaining to the contract while in their custody or control. Neither contractor is liable to reproduce the same data for any other business reasons other than specified by the Client.

Basic/Standard Processing Sequence for 2D PSTM Processing

The main basic processing steps to be taken into account: The contractor will process the land 2D seismic data through following basic processing sequence which also forms the basis for price quotation. The proposed basic processing steps to be performed are listed below:

Sr. No.	Time Processing Sequence
1.	Reformat
2.	Geometry application and QC attributes
3.	Geometry update & QC
4.	True Amplitude Recovery
5.	Manual and Automatic Trace Editing
6.	Despike / Wild Noise Removal
7.	Coherent/Non Uniform Coherent noise removal in different domains
8.	Scattered/dispersive, random and high frequency noise attenuation, preserving amplitude
9.	Multiple Attenuation
10.	Refraction Static computation and application (Refraction tomography and Diving Wave tomography etc.)
11.	Inverse Q Filtering (Q compensation)
12.	Surface consistent amplitude compensation (SCAC)
13.	Surface consistent Deconvolution/Robust Deconvolution
14.	1st Velocity analysis every at 1.0 Km
15.	1st pass of Surface Consistent Residual Static Correction
16.	2nd Velocity Analysis at 0.5 Km
17.	2 nd pass of Surface Consistent Residual Static Correction
18.	3rd Velocity analysis if required and more passes of residual static
19.	Pre-stack Random noise attenuation in different modes
20.	Pre stack signal enhancement
21.	Final Stack, Filtering and Scaling
22.	Post stack Signal Enhancement
23.	Spectral enhancement
24.	Post Stack Time Migration
25.	Noise attenuation before PSTM
26.	Final gather conditioning and velocity preparation for initial Pre-Stack Time Migration
27.	Initial PSTM (1st Pass/PSTM 1 st Run)
28.	First PSTM Velocity analysis at 0.5 Km
29.	2 nd pass PSTM (PSTM 2 nd Run)
30.	2 nd PSTM Velocity analysis at 0.5 Km (Velocity analysis with higher order NMO)
31.	If required, more passes of Pre-stack Time Migration (Anisotropic Turning-Wave Kirchhoff) and Velocity analysis with higher order NMO correction in order to have adequate results.
32.	Final PSTM (Anisotropic Turning-Wave Kirchhoff) & Final PSTM Stack
33.	Filtering and Scaling on Final PSTM Stack

NOTE:

- All final output will have to be in zero phases and SEG standard normal polarity.
- Any advance processing module suggested by bidder to be used in place of above mention module that gives best results will be free of cost.
- Processing sequence may be changed if required for better results.

Annexure-II

Financial Bid Format

Rates for land 2D seismic data Time Processing (PSTM) shall be provided as per given table.

Processing Sequence Description	COST in US \$ per L. km (2D)
Time Processing Sequence as per Annexure-I (Lump Sum)	

NOTE:

- The contractors should provide the list of all advance processing modules not used in test Line processing and should be bound to use these modules for improvement of data free of cost if needed during processing.*
- Financial bids will be evaluated on the basis of total cost in the **Annexure-II**, on the basis of lump sum turnkey rate (LSTK) basis.*
- Invoices need to be generated for **Annexure-II**. Payments will be made at actual after successful completion of the project against the verified invoices.*
- Prices must be quoted inclusive of all Taxes, duties, courier charges and levy etc. except provisional sales tax / ICT Tax on services where applicable will be borne by OGDCL at actual.*
- The test line processing results (Final, POSTM and PSTM stacks) including Different Vel percentage of test line including SEG-Y, velocity (ASCII & SEG-Y) & report will be provided either on Hard disk or through FTP soon after completing the job as per time frame mentioned in **Annexure-V**. Final project deliverables will be delivered according to **Annexure-III** within one month.*

Deliverables for the Project

Sr. No.	Description	Format	Recommended Media	No. of Copies.
1.	a) First Break Picks b) Refraction Statics	ASCII	DVD	03 sets
2.	a) Final Stacks (Unmigrated) with Post Stack Sequence b) Final Stacks (Unmigrated) without Post Stack Sequence	SEGY	HD & LTO	Three sets on HD and three sets on LTO
3.	a) Final POSTM Stacks with Post Stack Sequence b) Final POSTM Stacks without Post Stack Sequence	SEGY		
4.	a) Final PSTM Stacks with Post Stack Sequence b) Final PSTM Stacks without Post Stack Sequence	SEGY		
5.	a) Final PSTM stacking Velocity (ASCII) b) Final PSTM stacking Velocity (SEG-Y)	SEG-Y & ASCII		
6.	a) Final PSTM CMP gather with NMO Correction Without Post Stack Sequence b) Final PSTM CMP gather without NMO Correction Without Post Stack Sequence	SEGY		
7.	a) Final Un-migrated CMP gather with NMO Correction Without Post Stack Sequence b) Final Un-migrated CMP gather without NMO Correction Without Post Stack Sequence	SEGY		
8.	PSTM Processing Report	MS Word/ PDF		

Technical Requirements for Company Profile

Cat No.	Description of Technical Information	Min. Qualifying Criteria	Requirement
1	Company History & Profile (mention the list of projects executed in the mentioned time span)		
	No. of Years in PSTM Processing of land 2D Seismic Data belonging to Fold and thrust Belt (compressional regime) area	Minimum 05 years	Mandatory
	No. of land 2D projects for PSTM in the last 5 years in the fold and thrust Belt (compressional regime) area (Please provide Client list as per Annexure VII)	Minimum 05 projects	Mandatory
	Number of processing centers worldwide (Detailed Locations must Provide as per Annexure VIII)	Minimum 01 Processing center	Mandatory
2	Processing Facilities Software and Work Flows		
	Software Name and version as per Annexure-IX	Software Version not more than 03 years old	Mandatory
	Details of PSTM processing sequence for mentioned project including optional steps as per Annexure-I	Covers minimum 90% of proposed processing flow for PSTM	Mandatory
3	Hardware		
	Provide List of hardware / machines / equipment in operating condition owned by the company, available with contractors used in land 2D seismic data PSTM processing as per Annexure-X	Hardware/equipment version not older than 05 years	Mandatory
4	Manpower (Qualification of 16 Years Degree in Geophysics/ Geology) and having experience in 2D PSTM Processing		

	Attach the resume of the contractor permanently employed manpower for land 2D PSTM processing projects (Give complete detail experience belonging to Fold and thrust Belt as per Annexure-VIII).	At least 05 professionals with experience of 5-10 years	Mandatory
	Work Plan/Project Schedule		
5	Maximum Turn Around Time for Full Project from the date of handing over the data to the successful bidder	Total Turn Around Time 06 Months Processing time + 01 months for Deliverable	Mandatory
6	TOR Compliance	<u>Bid Prepared as per TOR Format</u> 100 % Compliance	Mandatory
	OGDCL professional participation in the 2D seismic data processing PSTM project.		
7	Submit workable QC schedule for OGDCL professionals.	<ol style="list-style-type: none"> 1. Noise Attenuation, Refraction Statics, 1st Vel Analysis. (Two professionals for one week) 2. During Final Pass of Velocity Analysis and PSTM for 2D processing (Two professionals for one week) 	Mandatory

MANDATORY REQUIREMENTS:

1. The bidders not meeting mandatory requirements as per Annexure-IV will not be included in any further evaluation. Seismic data for test processing would only be given to the bidders who have meet the mandatory requirements.
2. Contractor/ bidder shall not be eligible if the Contractor / bidder including any of its shareholders, directors, employees, partners, associated company or affiliated company is involved or has been involved in the past in litigation with OGDCL.
3. If the Contractor / bidder including any of its shareholders, directors, employees, partners, associated company or affiliated company is or has been blacklisted. A sworn affidavit confirming that the Contractor/bidder is not ineligible as per the above shall be furnished to OGDCL.
4. Seismic data processing companies and team leaders must have an experience of on-shore projects as per **Annexure-IV**.
5. Filling of Questionnaire as per **Annexure-VI**.
6. Compliance to HSE policy is mandatory.

NOTE:

1. Contractor should allocate dedicated team for OGDCL projects. At the time of award of contract contractor shall ensure to provide professionals of same level on which they have been awarded the contract.
2. In case of JV, the JV leader should be professionally a Processing Company.
3. For the execution of the project, contractor should provide the processing team from the list of professionals mentioned at **Annexure-IV**, category 4.
4. The bidders must submit soft copy of bid document in pdf/ word along with hardcopy.

Technical Evaluation Criteria for Test Line

The bidders would process test line ZHB-07 (28.8 L.Km) free of cost up to PSTM. The test Line will be handed over to bidders, through OGDCL FTP who have submitted their bids against this Tender Enquiry after Technical bid opening. Maximum turnaround time for test line processing will be 6 weeks from the date of handing over data to bidders. Test line processing results received after 06 weeks will not be entertained for any further evaluation.

Following criteria shall be used for evaluation of test Lines processing results:

Sr.	Description	KPI's	KPI's (Marks)	Total Marks
1	Final Unmigrated (With Post Stack Processing) & Final Unmigrated Stack (Without Post Stack Processing) image quality of line.	Quality of Signal to noise ratio	Excellent = 6, Very Good = 5, Good = 4, Average = 3, Below Average = 2, Poor = 0	6
		Fault plan Resolution	Excellent = 6, Very Good = 5, Good = 4, Average = 3, Below Average = 2, Poor = 0	6
		Structural Imaging	Excellent = 6, Very Good = 5, Good = 4, Average = 3, Below Average = 2, Poor = 0	6
		Overall Reflector Continuity /Coherency	Excellent = 6, Very Good = 5, Good = 4, Average = 3, Below Average = 2, Poor = 0	6
			Sub-Total	24
2	Final POSTM Stack (With Post Stack Sequence) & Final POSTM Stack (Without Post Stack Sequence) image quality of line.	Quality of Signal to noise ratio	Excellent = 6, Very Good = 5, Good = 4, Average = 3, Below Average = 2, Poor = 0	6
		Fault plan Resolution	Excellent = 6, Very Good = 5, Good = 4, Average = 3, Below Average = 2, Poor = 0	6
		Structural Imaging	Excellent = 6, Very Good = 5, Good = 4, Average = 3, Below Average = 2, Poor = 0	6
		Overall Reflector Continuity /Coherency	Excellent = 6, Very Good = 5, Good = 4,	6

			Average = 3 Average = 2,	Below Poor = 0	
			Sub-Total		24
3	Final PSTM Stack (With Post Stack Sequence) & Final PSTM Stack (Without Post Stack Sequence) image quality of line.	Quality of Signal to noise ratio	Excellent = 12, 10 Good = 8, Average = 6	Very Good = Below Poor = 0	12
		Fault plan Resolution	Excellent = 12, 10 Good = 8, Average = 6	Very Good = Below Poor = 0	12
		Structural Imaging	Excellent = 12, 10 Good = 8, Average = 6	Very Good = Below Poor = 0	12
		Overall Reflector Continuity /Coherency	Excellent = 12, 10 Good = 8, Average = 6	Very Good = Below Poor = 0	12
			Sub-Total		48
4	Turn Around Time for test line processing from the date of handing over data to bidders	Processing time within 04 weeks = 04 marks Processing time within 06 weeks = 02 marks Processing time more than 06 weeks = 00 marks (more than 06 weeks will be considered as disqualified for further evaluation)			4
TOTAL MARKS (Qualifying Marks 70%)					100
80% Weightage of Total Marks Obtained					

NOTE:

The technical evaluation as per the defined criteria in **Annexure-V** will be based on the qualitative marking on the results of the test line processing carried out by the potential bidders.

Questionnaire

Sr#	Questions	Answers
1	Registered Name of the Firm/Company.	
2	Permanent Address of Head Office and Branch Offices (if any) with telephone no(s)/fax no(s).	
3	Date and place of establishment of Company. (Please attach appropriate proof)	
4	Name and address of Foreign Associates (if any)	
5	Name, Designation and Qualifications of the person(s) authorized to represent the firm in Contractual Matters. (Authorization letter from Chief Executive of the Firm to be attached).	
6	a Financial status of the Company with supporting documents.	
	b Last 3 years audited financial statements of the Company. (Please attach Audit Reports with the Balance Sheets).	
	c NTN Certificate and statement/proof of income tax deduction for last 3 years. (Please attach copies)	
7	Name and address of the Bankers	
8	Performance of the firm on at-least 5 recently completed jobs / contracts of similar nature (Certificates of satisfactory performance from organizations/owners to be attached)	
9	Average turnaround time for about 550 L.km (Approx.) 2D PSTM project. Mention turnaround time for last 05 similar projects along with project volume.	
10	Availability of Innovational processing flow for any processing project	
11	Do you have a facility for remote/interactive data QC?	
12	Do you have a facility for Video Conferencing?	
13	Do you have 2D seismic data visualization facilities?	
14	Do you have an FTP site for transfer of data from processing centers to clients office for QC	
15	Details of litigations/cases in which the Company has been involved.	
16	Any other information.	
Not e	1 List of Facilities, ownership of contractor's machineries/equipment, availability of technical and skilled personnel, support capabilities and experience of the contractor may be checked and verified physically through technical audit.	
	2 Mis-statement by the contractor will lead to subsequent disqualification at any stage.	

List of Projects/Contracts during the Last Five Years

(Mention complete detail of 2D PSTM processing projects belonging to Fold and thrust Belt)

S.NO.	CLIENT NAME With address , email & Contact Number	SATISFACTORY REPORT OF THE CLIENT	DESCRIPTION OF WORK	AMOUNT (Million US \$)	CURRENT STATUS OF THE CONTRACT	VALIDITY	
						FROM	TO
1.							
2.							
3.							
4.							
5.							

List / Resume of Manpower Permanently Employed by the Contractor

Center -1. Location and List of Resume of Staff						
(Mention complete detail experience of 2D PSTM processing belonging to Fold and thrust Belt)						
S.NO	NAME OF PROFESSIONAL	DESIGNATION	ACADMIC QUALIFICATION (YEARS)		PROFESSIONAL EXPERIENCE	MENTION PROJECTS DETAIL
			DEGRE	OTHE		
1						
2						
3						
4						
5						
6						
7						
8						

Center -2. Location and List of Resume of Staff						
(Mention complete detail experience of 2D PSTM processing belonging to Fold and thrust Belt)						
S. DETAIL NO	NAME OF PROFESSIONAL	DESIGNATION	ACADMIC QUALIFICATION (YEARS)		PROFESSIONAL EXPERIENCE	MENTION PROJECTS
			DEGRE	OTHE		
1						
2						
3						
4						
5						
6						
7						
8						

Center -3. Location and List of Resume of Staff

(Mention complete detail experience of 2D PSTM processing belonging to Fold and thrust Belt

S.NO	NAME OF PROFESSIONAL	DESIGNATION	ACADMIC QUALIFICATION (YEARS)		PROFESSIONAL EXPERIENCE	MENTION PROJECTS DETAIL
			DEGRE	OTHE		
1						
2						
3						
4						
5						
6						
7						
8						

Annexure-IX

Details of Software used by the contractor for 2D land Seismic Processing

S.NO.	SOFTWARE NAME	ACQUIRED BY THE COMPANY ON	QUANTITY	VERSION YEAR	REMARKS
1.					
2.					
3.					
4.					
5.					
6.					

Details of hardware used by the contractor for 2D land Seismic Processing

S.NO.	HARDWARE NAME	ACQUIRED BY THE COMPANY ON	QUANTITY	CONDITION	REMARKS
1.					
2.					
3.					
4.					
5.					
6.					

Note:-

Following documents must be attached with the bid:-

- Bid bond of **USD 2,865/- (US Dollar Two Thousand Eight Hundred Sixty Five Only)** with technical bid. Please see tender documents and clarification (online transfer of funds to OGDCL) uploaded on OGDCL website for further detail.
- The master set of tender documents (services) uploaded on OGDCL website (www.ogdcl.com) is the integral part of this TOR.
- Bidding form, Integrity & ethics undertaking, Affidavit duly signed & stamped by Public Notary, Data Summary Sheet, Duly signed & stamped Draft Contract and tender documents.