

**CLARIFICATION#3 AGAINST TENDER # PROC-SERVICES/CB/EXPL-4939/2021- HIRING OF SERVICES FOR 3D SEISMIC UNCONVENTIONAL RESERVOIR CHARACTERIZATION STUDY FOR IDENTIFICATION OF THE SWEET SPOTS INLOWER INDUS BASIN OF PAKISTAN**

Following Clarifications have been made in the subject tender.

S. No.	Clarifications	OGDCL Reply
1	Please clarify, how many wells have Spectral GR logs, Shear Sonic and Geochemistry data available and please provide a complete list of log suit available in each well?	Spectral GR log and TOC data of Six (06) wells, shear sonic of three to Four Wells (03-04) is available. Complete log suit (GR, Density, Neutron, Sonic, and Resistivity) of all wells.
2	Does OGDCL have any static data for the elastic properties which would be calibrated with the dynamic elastic properties?	Yes, static data of elastic parameters is available and it will be provided for calibration.
3	Ref 3.1.11, Please provide the details of the lab data available with OGDCL for Calibration of the same with Reservoir Facies.	Lab data (XRF, XRD, Geochemistry, Porosity, Permeability and triaxial test etc.) is available.
4	How many numbers of wells out of six wells and the 3D seismic area will be used for rock physics & Pre-stack Inversion Feasibility?	Rock physics and pre stack inversion feasibility of six (06) wells and 3D seismic data of approx. 150 Sq.Km will be used.
5	Please provide the list of wells have image log data.	FMI data of three to four (03-04) wells will be provided.
6	Please provide the listing for geochemistry data.	TOC, Rock eval pyrolysis and Vitrinite reflectance data will be provided.
7	Is the azimuth information preserved in the trace headers of the imaged seismic gathers?	Azimuth information is not preserved but source and receiver offset is available in the header.
8	How many new wells are expected along with six wells to be incorporated during the study phase?	One or two wells may be added.
9	What are the formations and their thickness in the zone of interest?	Cretaceous Formations and zone of interest have a thickness of approx.600 m.
10	Which are the logs available in the zone of interest such as: <ul style="list-style-type: none"> <li>• image logs</li> <li>• spectral gamma ray</li> <li>• mineralogy/geochemical logs</li> <li>• NMR</li> <li>• shear sonic including fast and slow</li> </ul>	Image, Mineralogy / Geochemical, Shear sonic, cutting lithology log of 03 to 04 wells is available  Spectral GR and Mud log of 06 wells is available

	shear logs <ul style="list-style-type: none"> <li>• cuttings lithological analysis</li> <li>• mud gas</li> </ul>	
11	Will existing image log interpretations be provided?	Yes, Image log interpretation will be provided.
12	How many wells have core measurements available for TOC, porosity, water saturation, facies etc.?	Core measurements for TOC of 06 wells, Porosity, Water saturation and facies etc. of three wells.
13	How many wells require prediction of shear velocity and density?	Two to three wells will require prediction of shear velocity and density.
14	Are core measurements for elastic properties available? If yes, in how many wells/samples?	Yes, the core measurement for elastic parameters of two wells is available.
15	Will OGDCL's petrophysical interpretation be provided?	AS per TOR para 3.1.5 it required.
16	How many wells have VSP/Check shots?	One well
17	What are the bin size and foldage of available seismic data?	The bin size is 25*25 and 30 fold seismic data.
18	If azimuthal inversion is required, what is the number of available azimuthal sectors in the data?	Azimuth information is not available however, offset of source and receiver will be provided.
19	How many horizons and faults are interpreted in the study area / zone of interest? Will OGDCL's seismic interpretation be provided?	Seismic interpretation will be provided.
20	Will existing velocity model be provided?	Stacking velocity model will be provided.
21	Will migrated P-wave velocity volume be provided as segy?	Yes, it is provided as SEG-Y.
22	Will seismic acquisition & processing reports be provided?	Processing report will be provided.
23	Have there been any previous studies? Will the results / issues be shared?	Previous study is not available.