⍰ INVITATION TO SUBMIT TECHNICAL AND COMMERCIAL OFFERS

Wireline Logging Services

We hereby invite qualified and experienced companies to submit their technical and commercial proposals for the provision of Wireline Logging Services in accordance with the scope of work outlined in the attached document.

The scope includes, but is not limited to:

- - Execution of wireline logging operations for re-entry into one well and drilling of two exploration wells in the Ghadames Basin, Block 95/96.
- - Provision of open hole and cased hole logging services including GR, Sonic, Resistivity, Caliper, Density, Neutron, Spectral Gamma Ray, Magnetic Resonance, Borehole Imaging, and VSP.
- - Pressure measurement and fluid sampling with fluid analysis modules and sample drainage kits.
- - Cement evaluation using CBL, VDL, CCL, and ultrasonic tools for various casing sizes.
- - Provision of high-quality logging equipment with calibration certificates and backup tools.
- - Real-time data acquisition, processing, and delivery in LAS, DLIS, and PDF formats.
- - Compliance with safety and operational standards including provision of fishing tools and explosives handling.

Submission Guidelines:

- - Offers must be submitted in sealed envelopes waxed in red.
- - Both technical and commercial proposals must be included.
- - Pricing details must be confined to the commercial offer only.
- - Deadline for submission: within five (5) days from the date of this announcement.

We look forward to receiving your proposals.

SPECIFICATIONS OF EQUIPMENT AND SERVICES PROVIDED BY THE CONTRACTOR

4.2.4 WIRE LINE LOGGING SERVICES

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4.2.4.1. Operational Philosophy and Requirements

a. Reservoir Characteristics:
   - The expected pressures do not exceed 3606 Psia (10,000 psi).

b. Temperature Limits:
   - The maximum reservoir temperature is 256°F (110°C).

4.2.4.2. Logging Program for Each Phase and Each Well

For (Reentry_Program_Rev)

a. Intermediate Logging to Control Open Hole and Cased Hole

- Open Hole logging:
  - Run WL logging Tools: GR/Sonic/Resistivity/Caliper (6 Arms).
- Cased Hole logging (Note: Ensure to perform scrapping 9"5/8 casing Twice) :
  - Cement Evaluation: GR-CCL-CBL-VDL and Ultrasonic Cement Evaluation technology for 9"5/8 casing,
  - Casing inspection: 9''5/8 MFC and Multibarrier Corrosion Evaluation 9"5/8, 13"3/8 & 20".
  -

b. Phase 8"1/2 x 7'' Section (from 4630 to 8440ft):

- GR/Sonic (Dipole: S & P Waves)/Resistivity/Caliper,
- GR/Spectral/Density/Neutron/Caliper,
- Magnetic Resonance: Porosity/Permeability/Movable Fluids,
- Spectrometry (Lithology Identification),
- Pressure Measurement and Sampling (with Dual Packer if necessary), will be taken according to the interest of the reservoir,
- Borehole imager log (Optional) in front of the Cambro-Ordovician reservoirs to be decided,
- Deviation Log/GR,
- VSP (from TD to the surface).

- Note for the Pressure Measurement and Sampling Logging Service:
  - Include Fluid Analysis Modules and Sample Drainage Kits (Sample Balloons) on the surface.
- Note for the Proper Execution of Logging Operations:
- Ensure the availability of suitable fishing equipment on-site in case of tool sticking during an operation.

  - After the Installation and Cementing of the 7'' Casing: - GR/CBL/VDL/CCL and Ultrasonic cement evaluation technology for 7" Liner;
- Remarks regarding the Cement Evaluation:
  - This operation is considered a significant acceptance criterion during a drilling phase. Adequate cementing is essential to ensure well integrity, operational safety, and environmental protection.
  - Cement evaluation must comply with geological conditions and drilling depths.

- Therefore, cementing meeting these standards is considered an acceptance criterion for transitioning to the subsequent drilling phase.

For well 1

a. Phase 26" x 20" Section (from 0 to 250ft):

- No logging operations

b. Phase 16'' x 13''3/8 Section (from 250 to 3300ft):

- Phase 16":
  - GR-Sonic-Resistivity-Caliper
  - GR-CBL-VDL-CCL in 20" casing if necessary
- Note for the proper execution of Logging operations:
  - Adequate fishing equipment should be provided on-site in case of tool sticking during an operation.

c. Phase 12"1/4 x 9''5/8 Section (from 3300 to 6150ft):

- Phase 12''1/4 :
- GR-Sonic (Dipole: S-wave, P-wave)-Resistivity-Caliper
- If any interest recorded neutron-density logs (to be decided while drilling)
- Note for the proper execution of Logging operations:
  - Adequate fishing equipment should be provided on-site in case of tool sticking during an operation.
- GR/CBL/VDL/CCL in 13"3/8 Casing:
- Remarks regarding cement evaluation:
  - This operation is considered a critical acceptance criterion during a drilling phase. Adequate cementing is essential to ensure well integrity, operational safety, and environmental protection.
  - Cement evaluation must align with geological conditions and drilling depths.
  - Therefore, cementing meeting these standards is considered an acceptance criterion for progressing to the next drilling phase.

d. Phase 8"1/2 x 7'' Section (from 6150 to 9422ft) :

- Phase 8''1/2 :
  - GR-Sonic (Dipole: S-wave, P-wave)- Resistivity- Caliper.
  - Mineralogy Tool (optional)
  - GR Spectral-Density-Neutron-Caliper.
  - SP (DLL-MLL)
  - GR-MDT in front of reservoir zones, MDT points to be decided after log interpretation
  - Imager Tool (in front of the Ordovician reservoirs to be decided)

- VSP from TD to surface (offset will be decided).

- Note for the Pressure Measurement and Sampling Logging Service:
  - Include Fluid Analysis Modules and Sample Drainage Kits (Sample Balloons) on the surface.
- Note for the Proper Execution of Logging Operations:
- Ensure the availability of suitable fishing equipment on-site in case of tool sticking during an operation.
- Note for the VSP Recording Operation: The recording will be done in two (02) phases:

  Run1: From the 12''1/4 Phase to the Surface

  Run2: 8''1/2 Phase (7'' Casing to 12''1/4)
- After the Installation and Cementing of the 7" Casing:
  - GR/CBL/VDL/CCL/CAST in 9"5/8 casing
  - GR-CBL-VDL-CCL/CAST in 7" casing
  - CAST: If necessary
- Remarks regarding the Cement Evaluation:
  - This operation is considered a significant acceptance criterion during a drilling phase. Adequate cementing is essential to ensure well integrity, operational safety, and environmental protection.
  - Cement evaluation must comply with geological conditions and drilling depths.
  - Therefore, cementing meeting these standards is considered an acceptance criterion for transitioning to the subsequent drilling phase.

- The previously mentioned tools must be on-site to complete the logging operations; no tool can be excluded

Logs	Tool	Designation
Natural Gamma Ray	GR	GR
Full Wave Sonic (P&S)	Sonic Tool	DTP-DTS
Diameter (4 & 6 arms)	Caliper 4 & 6 Arms	CALI
Spectral Gamma Ray (TH, K, U)	SPECTRAL GR	HNGS
Formation Density	Density Tool	RHOB
Neutron Porosity	Neutron Tool	CN
Resistivities	High Resolution Laterolog 5 Curves	RES
Cement Bond Logging	CBL – VDL – CCL	DAL
Ultrasonic Cement Evaluation	Ultrasonic Tool	SBT
NMR	Nuclear Magnetic Resonance	NMR
Acoustic Imaging	Electric Imaging Tool	RES IMG
Electric Imaging	Ultrasonic Imaging Tool	RES IMG
Formation Characterization	Pressure Measurement, Sampling, Fluid Analysis	Formation Tester
CASING COLLAR	Casing Collar Locator	CCL
SP	SP	SP

Vertical Seismic Profile	VSP	VSP

For the third well 2 the simulation logging will be done for the same section as the well 1, and the same logging tool requested, the small difference will be in the casing point depth.

4.2.4.3. Logging Specifications

a. Equipment :

The Contractor shall:

- Perform all equipment tests before commencing logging operations.
    - If the equipment does not meet the Client's requirements, the Client has the right to cancel the operation without any charges.
    - The Contractor is responsible for providing adequate equipment.
- Provide certifications for each Logging Tool (the service life should not exceed five (05) years).
- Use high tensile strength cable with anti-sticking tools.
- Provide pressure equipment to ensure well safety during logging operations in case of wellbore manifestations.uits.

b. Calibration of Tools for Open Hole and Cased Hole Sections of the Well:

The Contractor shall:

- Perform necessary calibrations of Logging Tools before and after recording on-site.
    - Must provide the calibration report.
- Provide a Mobile Calibrator for Density and Neutron tools on-site (calibration duration for the density tool should be less than 30 days).

c. Logging Operations:

i. Summary of Logging Operations:

The Contractor shall:

- At the end of each drilling phase, be prepared to perform the Logging program communicated in advance by the on-site Log Analyst Supervisor.

ii. Quality of Logging Records:

The Contractor shall:

- Provide logs corrected for environmental effects.
- Provide records compliant with prevailing standards.
- Ensure reliable data.
    - In case of anomalies detected by the Client, the Contractor must correct these data.

iii. Logging Equipment for Open Hole and Cased Hole Sections of the Well:

The Contractor shall:

- Have suitable tools to conduct logging in cased hole sections, in case of technical drilling issues preventing logging in open hole sections.

d. Additional Logging Services:

The Contractor shall:

- Maintain on-site backup for each logging tool under their responsibility.

i. Fishing Equipment:

The Contractor shall:

- - Have the set of draft equipment (Over-Shot, Cut/Thread Kits and adapters for different diameters).

When the Contractor:

- Operates solely to rectify the effects of unintentional fault, no remuneration is received for the instrumentation performed, and the Contractor bears all fishing expenses.
    - If instrumentation is not completed within four (04) days, the CLIENT will take over the operations at the Contractor's expense (rental of the equipment or unit concerned by the wait, fishing expenses).
- Operates solely to rectify the effects of negligence, all operations related to fishing services will be at the Contractor's expense until the situation is restored.

ii. Explosives: (perforation and detonating system services)

The Contractor shall:

- Provide detonating systems that are not sensitive to radio frequencies (Perforators, Bridge-Plug, Cutters, back-off, etc.), and selective firing systems to perforate multiple levels in a single run.
    - The system must be combinable with GR-CCL for depth calibration.
- Store explosives and detonating devices in a secured area outside the perimeter – Base of Operations.
- Provide a 4’’1/2 perforation gun for 7’’ and 9’’5/8 Casing.

e. Procedures for logging operations:

The Contractor shall:

- Take necessary measures to prevent damage to logging tools during their transfer from the base to the drilling site.
- Radioactive sources must be stored in a secured area outside the life perimeter.

A representative of the Client will be designated as the liaison with the Contractor during all logging operations.

f. Descent and depth reading:

The Contractor shall:

- Avoid any loss of time.
- Manage the progress of operations according to the Client's standards.
- Perform a repeated section of at least 229,26 ft (70m) before the main section.
    - Repeat it at the discretion of the Client's representative and provide a log down upon request at no additional cost.
- Descend the Formation Tester tool (Formation pressure measurement and fluid sampling) very slowly to avoid delays in stabilizing hydrostatic pressure.
- Provide a detailed job log for each operation.

g. Data Processing and Deliverables (Printouts and CD copies):

The Contractor shall:

- Proceed with real-time data transmission.
- Provide rush prints at scales of 1/200 and 1/500 and data in LAS, DLIS, and PDF formats for each recording before starting the next run.
- Provide three (03) copies of each run at specified scales of 1/500 and 1/200 on-site, ensuring all prints are in color.
- Provide all recorded data in DLIS and LAS files with a sampling interval of 0,5ft (0.1524 meters).
- Address any data skips on-site.
- Include precise information from the deployment report (Block Name, Well Name, Calibrations, Repeated Section, Remarks, etc.) on each log header.
- Provide a detailed on-site report of all operation events within a reasonable timeframe.
- Provide all logging records in both hard and soft formats.
- h. Data Processing Requirements:
- Processing of imaging data acquired during the descent of electrical and ultrasonic imaging tools must be completed within twenty-four (24) hours to determine further logging operations.
- Formation pressure measurement and fluid sampling points will be selected by the supervising Log Analyst based on pressure measurement results and fluid mobility.

h. Data Processing Requirements:

- The processing of imaging data acquired during the descent of electrical and ultrasonic imaging tools must be completed within twenty-four (24) hours to determine the next steps in logging operations.
- The points for formation pressure measurement and fluid sampling will be selected by the supervising Log Analyst based on pressure measurement results and fluid mobility.

4.2.4.4. VSP For each Well

a. Equipments:

The Contractor must:

- Perform all equipment tests before the start of recordings.
- Provide adequate equipment in case the equipment does not meet the Client's requirements. The Client has the right to cancel the operation without any charge.
- Provide certifications for the VSI (the service life should not exceed five (05) years).

b. Vibrator Truck Control:

The Contractor must:

- Perform all tests on the Vibrator Truck (e.g., radio, sweep parameters, quality of the excitation trace: intensity, phase, and distortion).

c. Calibration within the Unit-Laboratory:

The Contractor must:

- Conduct tests at the Unit-Laboratory level (e.g., correlation, addition).

d. Receiver Equipment (geophones):

The Contractor must:

- Calibrate its tools (check shots) in accordance with its internal procedure.

e. Recommendations for on-site data processing:

- The Contractor must deliver standard products to the Client, which include:
- Raw VSP data in SEGY format. The data header must contain the coordinates of transmitters and receivers, depth identification, channels, and number of shots. Acquisition time delays will be recorded from the latest SEGY data.
- A summary table of numerical time/depth values.
- Interim report upon completion of the operation.
- The site report must display first arrivals and velocity histograms.

f. Seismic Service and Delivered Products:

- The recorded (raw) data will be processed according to the following steps (this applies to zero offset seismic/geometries at normal incidence, and the processing of other geometries is to be discussed with the Client):
    - Editing,
    - Incorporation of final measurement data into processing,
    - Direct picking of first arrivals, based on the peak-peak method,
    - Correction for spherical divergence,
    - Evaluation of down-going waves,
    - Evaluation of upgoing waves,

- Deconvolution of upgoing waves from the field, the operator will evaluate from the down-going waves (output is zero phase),
- Conversion from single to double time,
- Resolution enhancement,
  - Band-pass filtering,
  - Stack window if the survey is zero offset.

g. Data Processing Timelines:

- If the Contractor provides data in a form or format that does not conform to the Client's specifications, the Contractor should, upon request from the company, reprocess the data free of charge to meet the applicable processing time requirements.
- The following timelines will typically apply for processing acquisition data until processed data can be received by the Client:
  - A one-week turnaround time for data that needs to be reprocessed in the Contractor's office due to Contractor faults or omissions at the drilling location.
  - Advanced data processing as requested by the Client will have a one-week turnaround time for provisional results and an additional week for submission of the final product approved by the Client.

4.2.4.5. Communications

The Contractor must provide adequate means of communication and transmission (data will be transmitted at the end of each recording).

a. Contractor consumables:

- Fuel,
- Forklift,
- Catering and accommodation.

b. Staff:

i. Working Conditions:

The Contractor must:

- Hold a safety meeting before commencing logging operations,
- Establish a safety zone during logging recordings,
- Adhere to the rules of the HSE plan.

ii. Qualification:

The field engineer for logging operations must have a minimum of five (05) years of experience in this position and ten (10) years in the oil industry.

CVs of Contractor operators must be submitted to the Client three (03) weeks before the start of logging operations.

iii. Logging Personnel:

The Contractor must:

- Ensure that each logging personnel has appropriate and sufficient personal safety equipment in accordance with the tasks requested by the Client.
- Logging operators must be experienced enough to avoid time losses:
- Preparing and checking all tools in advance at the drilling site,
- Assembling and disassembling logging tools,
- The winch operator must have good experience and must remain at his workstation at all times,
- At the end of the operation, the Contractor must ensure that the work site is left clean in accordance with the HSSE plan.

iv. Team Composition:

The team composition will consist of three (03) engineers and five (05) operators. Depending on the workload, the Client and the Contractor may change the team composition before each operation.

4.2.4.6. General Planning

- The start date of well drilling is scheduled for: ……

4.2.4.7. Quality Control Requirements and Purchasing:

- Not applicable.

4.2.4.8. Quality Recommendation & Procurement:

- Supply in accordance with Client requirements.

4.2.4.9. Equipment preparation

- Not applicable.

4.2.4.10. Documentation to be Provided by the Contractor:

a. Certificates, Permits & Qualifications:

The Contractor must:

- Ensure that all equipment delivered to the site is accompanied by control certificates and the history of major repairs, including lifting equipment and the winch.

b. Reports:

The Contractor must, in the case of a service contract:

- Hold a safety meeting before starting logging operations for each drilling phase.
- Additionally, they must regularly attend each Daily Meeting,
- Provide an inventory/movement of hazardous products.

c. Transport Documents:

The Contractor must:

- Transmit to the Client a detailed list of equipment before shipping it to the drilling site.

d. Operating Manuals:

The Contractor must:

- Provide a schematic document of the combination of logging tools to be run into the well it's.

e. Maintenance Manuals:

The Contractor must:

- Provide a maintenance manual containing the maintenance history of each tool.

4.2.4.11. Applicable prices for logging phases

According to the logging tools as requested in 4.2.4.2. (Table of logging tools).

Other logging tools may be required depending on the operations and problems encountered during drilling. These tools will be listed by the service provider together with the applicable prices.

For re- entry

SIDE TRACK (Water Based mud)			Unit prices (US$/Unit) Pesonnel & Equipement)	Quantity	Amount (US$)
Logging combination	Charge	Unit			
Casing 9"5/8					
Logging Cased Hole unit	Fixed charge			1	
GR	DC	ft			
Cementing Log CBL-VDL-CCL	DC	ft			
	SC	ft			
CAST (Cased Hole Acoustic Scanner Tool)	DC	ft			
	SC	ft			
MFC (Multifinger Caliper)	DC	ft			
	SC	ft			
Multibarrier Corrosion Evaluation	DC	ft			
	SC	ft			
KILOMETRAGE	Road	Km			
	Track	Km			
Phase 8"1/2					
Open Hole Logging Unit **hole control Vertical section**	Fixed charge				
GR	DC	ft			
	SC	ft			

Caliper (Minimum 6 arms)	DC	ft			
	SC	ft			
Phase 8"1/2					
Open Hole Logging Unit	Charge fixe				
Spectral GR	DC	ft			
	SC	ft			
Neutron	DC	ft			
	SC	ft			
Sonic digital	DC	ft			
	SC	ft			
Density	DC	ft			
	SC	ft			
Resisitivity(Induction/(Laterolg)	DC	ft			
	SC	ft			
Caliper (Minimum 4 or 6 arms)	DC	ft			
	SC	ft			
Formation TESTER (Included in these loads are variable volume flow control modules, high volume pump modules, multi-sample module and fluid analyzer.)	DC	ft			
	Pression pts	points			
	Pump Out	DC			
		samp			
	Temps	minute			
	Fluide Analyser	DC			
		samp			
Imaging- Electric OBM/WBM	DC	ft			
	SC	ft			
Nuclear magnet.Resonnance	DC	ft			
	SC	ft			
	SC	ft			
	Station	St			
GR	DC	FT			
Seismic Vertical Offset 0	DC	ft			
	C per 1 geophone			5	
	level	40-		40	
		41+		60	
		100+		30	
	Fixed charge			1	
KILOMETRAGE	Road	km		490	
	Track	km		265	
	Road	km		490	
	Track	km		265	
CASING 7"					
Cased Hole Logging Unit	cfixe			1	

GR	DC	ft		8440	
CBL-VDL-CCL	DC	ft		8440	
	SC	ft		3810	
Control of casing cementing (Ultrasonic and Imaging or Equivalent)	DC	ft		8440	
	SC	ft		3810	
KILOMETRAGE	Road	km		490	
	Track	km		265	
Cased Hole Logging Unit	**cfixe**				
GR-CCL	DC	ft		8440	
	SC	ft		1000	
Csg (9"5/8, 7")	DC	ft		0	
	SC	ft		0	
	Run	Charg e Fix		2	
KILOMETRAGE	Road	km		0	
	Track	km		0	
	Total amount				
DC: Depth Charge	**Total amount with processing VSP& Imaging**				
SC: Survey Charge	**Total with discount**				

Contractor Personnel Charges		
Pesonnel	**Daily rate (US$/man/day)**	**Daily Standby Rate (US$/man/day)**
Wireline Logging Engineer		
Wireline Logging Operator		
VSP Logging and Processing Engineer		
VSP Logging Operator		
Vibroseis Operator		

Data Processing

Processing Services in Computer Center	**Charge**	**Unit price(US$/Unit)**
VSP Processing/ Check Shot Processing	Depth charge	
	Survey charge	flat charge $
Formation Testing Quick Interpretation	Depth charge	quick is free of charge
	Survey charge	quick is free of charge

Production Logging Quick-look	Depth charge	
	Survey charge	
Imaging processing & interpretation	Depth charge	
	Survey charge	flat charge $
Cement Bond Evaluation	Depth charge	
	Survey charge	

For well 1,2

Vertical EXPLORATION well (Water Based mud)			Unit prices (US$/Unit) Pesonnel & Equipement	Quantity	Amount (US$)
Logging combination	Charge	Unit			
Casing 20"					
Cased Hole Logging Cased Hole	Charge fixe			1	
GR	SC	ft		250	
CBL-VDL-CCL	DC	ft		250	
	SC	ft		250	
Control of casing cementing (Ultrasonic and Imaging or Equivalent)	DC	ft		250	
	SC	ft		250	
KILOMETRAGE	Road	Km		490	
	Track	Km		265	
Phase 16"					
Open Hole Logging Unit	Charge fixe			1	
GR	DC	ft		3300	
	SC	ft		3300	
Sonic digital	DC	ft		3300	
	SC	ft		3300	
Resisitivity (Induction/(Laterolg)	DC	ft		3300	
	SC	ft		3300	
Caliper (Minimum 4 or 6 arms)	DC	ft		3300	
	SC	ft		3300	
KILOMETRAGE	Road	Km		490	
	Track	Km		265	
Casing 13"3/8					
Cased Hole de Logging Unit	Charge fixe			1	
GR	DC	ft		6150	
CBL-VDL-CCL	DC	ft		6150	
	SC	ft		3300	

Control of casing cementing (Ultrasonic and Imaging or Equivalent)	DC	ft		6150	
	SC	ft		3300	
KILOMETRAGE	Road	Km		490	
	Track	Km		265	
Phase 12"1/4					
Open Hole Logging Unit	Charge fixe			1	
GR	DC	ft		6150	
	SC	ft		2850	
Sonic digital	DC	ft		6150	
	SC	ft		2850	
Density	DC	ft		6150	
	SC	ft		2850	
Caliper (Minimum 6 arms)	DC	ft		6150	
	SC	ft		2850	
Neutron	DC	ft		6150	
	SC	ft		2850	
Resisitivity (Induction/(Laterolg)	DC	ft		6150	
	SC	ft		2850	
KILOMETRAGE	Road	Km		490	
	Track	Km		265	
Casing 9"5/8					
Cased Hole Logging Unit	Charge fixe			1	
GR	DC	ft		9422	
Cementing log CBL-VDL-CCL	DC	ft		9422	
	SC	ft		6150	
Control of casing cementing (Ultrasonic and Imaging or Equivalent)	DC	ft		9422	
	SC	ft		6150	
KILOMETRAGE	Road	Km		490	
	Track	Km		265	
Phase 8"1/2					
Open Hole Logging Unit	Charge fixe			1	
Spectral GR	DC	ft		9422	
	SC	ft		3272	
Neutron	DC	ft		9422	
	SC	ft		3272	
Sonic digital	DC	ft		9422	

	SC	ft		3272	
	SC	ft		3272	
Density	DC	ft		9422	
	SC	ft		3272	
Deviation measurement	DC	ft		9422	
	SC	ft		3272	
Resisitivity (Induction/Laterolg)	DC	ft		9422	
	SC	ft		3272	
Caliper (Minimum 4 or 6 arms)	DC	ft		9422	
	SC	ft		3272	
Micro Resistivity	DC	ft		9422	
	SC	ft		3272	
Formation TESTER (included in these loads are variable volume flow control modules, high volume pump modules, multi-sample module and fluid analyser)	DC	ft		9422	
	Pression pts	points		30	
	Pump Out	DC		9422	
		samp		12	
	Temps	minute		180	
	Fluid Analyser	DC		9422	
		samp		12	
Mineralogy Tools	DC	ft		9422	
	Sc	ft		3272	
Imaging- Electric OBM/WBM	DC	ft		9422	
	SC	ft		1050	
GR-RMN	DC	ft		9422	
Nuclear magnet.Resonnance	DC	ft		9422	
	SC	ft		1050	
	SC	ft		9422	
	Station	St		1	
GR-	DC	ft		9422	
Seismic Vertical Offset 0	DC	ft		9422	
	C per 1 geophone			5	
	level	40-		40	
		40+		60	
		100+		30	
	Fixed charge			1	
KILOMETRAGE	Road	Km		490	
	Track	Km		265	
	Road	Km		490	
	Track	Km		265	
CASING 7"					

Cased Hole Logging Unit	Fixed charge			1	
GR	DC	ft		9422	
CBL-VDL-CCL	DC	ft		9422	
	SC	ft		3272	
Control of casing cementing (Ultrasonic and Imaging or Equivalent)	DC	ft		9422	
	SC	ft		3272	
KILOMETRAGE	Road	Km		490	
	Track	Km		264	
Perforations (I-line et TCP)					
Unité de Logging Cased Hole	Fixed charge			1	
GR-CCL	DC	ft		9422	
	SC	ft		1000	
Csg (9"5/8, 7")	DC	ft		9422	
	SC	ft		65	
	Run	Fixed charge		2	
KILOMETRAGE	Road	Km		0	
	Track	Km		0	
	Total amount				
DC: Depth Charge	**Total amount with VSP&Imaging Processing**				
SC: Survey Charge	**Total with discount**				

The depths in the table are those of the exploration well 1 , the depths of the exploration well 2 will be communicated later but there will not be a large difference between the two.

Contractor Personnel Charges		
Pesonnel	**Daily rate (US$/man/day)**	**Daily Standby Rate (US$/man/day)**
Wireline Logging Engineer		
Wireline Logging Operator		
VSP Logging and Processing Engineer		
VSP Logging Operator		
Vibroseis Operator		

Data Processing

Processing Services in Computer Center	Charge	Unit price(US$/Unit)
VSP Processing/ Check Shot Processing	Depth charge	
	Survey charge	flat charge $
Formation Testing Quick Interpretation	Depth charge	quick is free of charge
	Survey charge	quick is free of charge
Production Logging Quick-look	Depth charge	
	Survey charge	
Imaging processing & interpretation	Depth charge	
	Survey charge	flat charge $
Cement Bond Evaluation	Depth charge	
	Survey charge	

Total well cost:

reentry		
#	Description	Price (US$)
1	Phase 8 ½" (Side track)	
Total well re entry		

Well 1		
#	Description	Price (US$)
1	Phase 26''	
2	Phase 16''	
3	Phase 12-1/4''	
4	Phase 8 ½"	
Total Well 1		

Well 2		
#	Description	Price (US$)
1	Phase 26''	
2	Phase 16''	
3	Phase 12-1/4''	
4	Phase 8 ½"	
Total Well 2		