

**UNICEF UKRAINE  
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**SHORT TITLE OF ASSIGNMENT:**

*Ground water expert for Borehole Drilling Supervision in Kharkiv.*

<b>DUTY STATION:</b>	Kharkiv		
<b>SUPERVISOR:</b>	Jagadishwar Barun		
<b>OTHER CONTACTS IN OFFICE:</b>	Jinan Ramadan, Nicolas Osbert		
<b>PROPOSED DURATION</b>	6 months	<b>PREQ NUMBER</b>	N/A
<b>CONTRACT PERIOD</b>	15th January 2026 – 30 <sup>th</sup> June 2026	<b>LTA REFERENCE</b>	N/A
<b>NATIONAL / INTERNATIONAL</b>	International (through Stand By partners)	<b>NOTES/COMMENTS</b>	
<b>ESTIMATED COST OF SERVICES</b>	Not Applicable		
<b>WBS</b>	4410/A0/06/884/002/041		
<b>GRANT</b>	N/A		
<b>DAYS OF REMOTE WORK</b>	N/A		
<b>DAYS IN KHARKIV</b>	6 months		
<b>DAYS ELSEWHERE</b>	N/A		
<b>LOCATIONS TO BE VISITED</b>	Kharkiv and Sumy Oblast		
Need for procurement of institutional services is reflected in the AWP or is in response to a specific programming decision			YES
The tasks cannot be completed by UNICEF staff or counterparts			YES
ToR is clearly defined with tangible, measurable deliverables or an end-product and with payments (contract fee) clearly linked to these			YES
ToR includes a description of the specific activities and timeframes for completion of the activities			YES
The ToR includes performance indicators for evaluation of results (e.g. timeliness or quantitative measures)			YES

**SIGNED FOR AGREEMENT**

Prepared by Jagadishwar Barun  ..... WASH Specialist	Reviewed by Le Ngoc Bich  ..... Human Resource Specialist	*Endorsed by Jinan Ramadan  ..... Chief of Field Office	*Approved by Nicolas Osbert  ..... Chief of WASH Section
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**UNICEF UKRAINE**  
**TERMS OF REFERENCE FOR SERVICES – (Individual Consultant)**

**SHORT TITLE OF ASSIGNMENT**

*Ground water expert for Borehole Drilling Supervision in Kharkiv (P3 equivalent).*

**BACKGROUND**

Ukraine’s water, sanitation, and hygiene (WASH) sector has long struggled with systemic challenges, even prior to the full-scale escalation of conflict in February 2022. Decades of chronic underinvestment, aging Soviet-era infrastructure, and limited expansion of centralized water and wastewater systems have left millions of Ukrainians without reliable access to essential services. According to government estimates from 2021, approximately 10 million people in Ukraine lacked access to centralized piped water, while 20 million were not connected to centralized wastewater collection and treatment systems. Nearly 40% of water supply networks and 35% of wastewater facilities were identified as requiring urgent rehabilitation. These pre-existing vulnerabilities have been dramatically exacerbated by the ongoing war, which has resulted in widespread destruction of infrastructure, severely reduced operational revenues, and soaring energy costs. The 2024 Rapid Damage and Needs Assessment estimates that the WASH sector has sustained over US\$4.6 billion in direct physical damage and an additional US\$12.7 billion in economic losses, underscoring the immense scale of the crisis.

The situation in Kharkiv, Ukraine’s second-largest city, is particularly critical. Kharkiv’s water supply system is heavily dependent on surface water extracted from two major river intakes. Both of these intakes are acutely vulnerable to missile strikes and other forms of conflict-related disruption. Repeated attacks have not only caused direct damage to water infrastructure but have also heightened the risk of prolonged supply failures, leaving large segments of the population—especially internally displaced persons (IDPs), children, and the elderly—at risk of losing access to safe water. The city’s reliance on such exposed sources has made the development of alternative water supplies, particularly groundwater from new boreholes, an urgent priority. In response, the Kharkiv City Council, in partnership with UNICEF and other humanitarian actors, has prioritized the rapid development and rehabilitation of boreholes to diversify water sources, enhance system resilience, and ensure the continuity of safe water supply for vulnerable groups. This approach is not only a humanitarian imperative but also a strategic investment in the city’s long-term recovery and resilience.

Compounding these technical and operational challenges is the evolving policy landscape, as Ukraine accelerates its integration with the European Union (EU). Alignment with EU water and environmental directives requires urgent reforms in water safety, quality monitoring, groundwater resource management, and service delivery standards. However, the acute pressures of conflict, combined with the legacy of outdated infrastructure, have stretched the capacity of local authorities and humanitarian partners to the limit. Within UNICEF’s WASH team, while technical expertise exists, the current workload and competing emergency and recovery priorities have constrained the ability to provide full-time, field-based supervision of complex borehole drilling operations. Borehole construction is a highly technical, time-sensitive process that demands continuous on-site oversight to ensure compliance with Ukrainian regulations, international best practices, and precise engineering standards. Without dedicated technical supervision, there is a heightened risk of substandard construction, inadequate documentation, safety hazards, and ultimately, the failure to deliver safe water to those in greatest need.

Given these circumstances, the deployment of a specialized drilling supervisor is essential. This role will provide critical, real-time technical oversight at each stage of the borehole development process—enforcing quality standards, verifying contractor performance, and ensuring transparency and accountability in project execution. Strong field supervision will safeguard public health, protect UNICEF’s credibility, and maximize the impact of donor investments by ensuring that new water infrastructure is technically sound, sustainable, and aligned with both immediate humanitarian needs and Ukraine’s long-term development goals.

**OBJECTIVE**

- Review and provide technical feedback on design documents for proposed boreholes to ensure compliance with national and international standards.
- Enhance monitoring and supervision during the borehole drilling process, ensuring adherence to specifications and safety protocols.
- Develop a detailed monitoring protocol outlining key parameters, frequency of checks, and reporting mechanisms and provide effective and efficient supervisory support to borehole drilling contractors according to Ukrainian and international standards.
- Ensure boreholes are drilled to the required depth and specifications based on hydrogeological investigations.
- Oversee that borehole construction meets all technical and safety standards as specified in contracts.
- Supervise the installation and equipping of successful boreholes based on test outcomes and project design.
- Ensure comprehensive documentation of borehole records, including drilling logs, water quality tests, and pumping test results.
- Build capacity of local experts and technicians on borehole drilling best practices, quality assurance, and troubleshooting

**Scope of work:**

Under the overall supervision of the UNICEF WASH Specialist and in coordination with Kharkiv City Administration and implementing partners, the Borehole Drilling Supervisor will provide field-based technical oversight to ensure the quality, safety, and compliance of borehole drilling and construction works. The Supervisor will play a critical role in safeguarding public health and the integrity of UNICEF's water supply interventions by ensuring adherence to Ukrainian regulations, international standards, and specific project design requirements.

Key areas of responsibility will include:

**1. Technical Supervision and Quality Assurance**

- Review and provide technical feedback on design documents for proposed boreholes to ensure compliance with national and international standards.
- Develop a detailed monitoring protocol outlining key parameters, frequency of checks, and reporting mechanisms and enhance monitoring and supervision during the borehole drilling process, ensuring adherence to specifications and safety protocols.
- Provide day-to-day, on-site technical supervision of all borehole drilling operations, including mobilization, drilling, casing, and development stages.
- Ensure that contractors strictly adhere to specifications outlined in the approved designs, contracts, and hydrogeological assessments.

- Validate that boreholes are drilled to appropriate depth and lithology, based on site-specific investigations and expected aquifer conditions.

## 2. Compliance with Standards and Safety Protocols

- Enforce compliance with Ukrainian and international standards (e.g., WHO, UNICEF, national sanitary norms) for groundwater development, construction materials, and safety.
- Monitor and guide contractors on occupational health and safety measures throughout the drilling and installation process.
- Immediately report any non-compliance, deviations from contract specifications, or safety incidents to UNICEF and relevant authorities.

## 3. Documentation and Reporting

- Ensure complete and accurate technical records, including drilling logs, geological strata, borehole designs, depth measurements, casing and screen data, and construction timelines.
- Supervise and verify the results of water quality sampling, step-drawdown and constant rate pumping tests, and recovery measurements.
- Prepare weekly field supervision reports detailing progress, quality concerns, and recommendations for corrective actions.

## 4. Installation and Commissioning of Boreholes

- Oversee the installation of pumps, headworks, and ancillary infrastructure for successful boreholes, ensuring compatibility with design parameters and test results.
- Support the commissioning and handover of completed boreholes to municipal utilities or local authorities, ensuring proper functionality and sustainability provisions are in place.

## 5. Capacity Strengthening and Coordination

- Provide on-the-job technical guidance and mentoring to utility engineers and local contractors to promote quality standards and build local capacity.
- Liaise closely with UNICEF's engineering and WASH teams, drilling contractors, and government stakeholders to coordinate timelines, resolve field-level issues, and ensure accountability.

## 6. Risk Management and Adaptive Support

- Monitor environmental and operational risks (e.g., weather delays, security incidents, geotechnical surprises) and provide timely recommendations for adaptive measures.
- Ensure all borehole works are completed within the defined construction window and that any delays are well-documented with justifications.

This position requires continuous presence at the drilling sites during active operations and may involve travel to multiple locations within Kharkiv and Sumy Oblasts. The Supervisor must demonstrate high technical competence, impartiality, and strict adherence to UNICEF's principles of equity, quality, and transparency.

### **Key outputs/deliverables:**

The expert is expected to produce the following deliverables:

<b>Deliverable</b>	<b>Description</b>	<b>Timeline</b>
<b>Supervision Plan and Site Visit Schedule</b>	Review design documents of four boreholes before bidding, provide technical support during bid evaluation and develop a detailed monitoring protocol outlining key parameters, frequency of checks, and reporting mechanisms and carry out detailed field supervision plan outlining site coverage, coordination strategy with contractors, timelines, and documentation protocols.	Within 14 calendar days of contract start (Month 1)
<b>Daily Site Supervision Logs</b>	Daily logs of field activities including drilling progress, contractor performance, encountered challenges, and site photos.	Compiled and submitted weekly (Month 2 to 6)
<b>Technical Documentation</b>	Produce technical documentation of four boreholes after drilling completion, including drilling logs, geological profiles, casing/screen details, water quality results, and pumping test data.	Borehole completion report should be produced within 7 days after each borehole is completed
<b>Installation and Commissioning Reports</b>	Supervision report confirming pump and infrastructure installation, with commissioning checklist signed by contractor and supervisor.	Within 7 working days after installation (Month 2-6)
<b>Final Summary Report</b>	A consolidated report detailing key findings, lessons learned, technical outcomes, and recommendations, with annexes.	Within 7 working days of assignment completion (Month-6)

**SCOPE OF WORK, ACTIVITIES, TASKS, DELIVERABLES AND TIMELINES PER DELIVERABLE**

The assignment along with the payment schedule will be rolled out as follows:

Scope of Work	Activities	Tasks	Deliverables	Timeline
Planning and Scheduling	Develop field supervision plan and visit schedule	- Prepare a detailed supervision plan and schedule for site visits	Supervision Plan and Site Visit Schedule	Within 7 calendar days of contract start
Technical Supervision & Quality Assurance	- Review of the borehole design documentation. - On-site drilling supervision	- Review design documents of four boreholes before bidding, provide technical support during bid evaluation - Monitor drilling processes (mobilization, drilling, casing, development)	- 4 Design documentation reviewed and approved for drilling boreholes <sup>1</sup> . - Daily Site Supervision Logs (compiled weekly)	Logs submitted weekly
		- Verify borehole depth and lithology compliance		
		- Ensure design documentation is in line with national and international standards. - Ensure contractor adherence to design and specifications		
Compliance with Standards and Safety Protocols	Enforce safety and technical standards	- Monitor health and safety compliance on-site - Identify and report deviations from Ukrainian and international standards	Non-Conformance and Corrective Action Reports	Within 24 hours of issue detection
Documentation and Reporting	Maintain comprehensive technical records	- Compile drilling logs, geological profiles, casing/screen details	Verified Technical Documentation of four drilled boreholes	Within 5 working days post-completion of each borehole
		- Supervise and validate water quality and pumping test results		
Installation and Commissioning	Oversee borehole installation and commissioning	- Supervise pump installation and infrastructure setup	Installation and Commissioning Reports	Within 2 working days after installation completion
		- Ensure commissioning checklists are signed and complete		
Capacity Strengthening and Coordination	Provide technical guidance and coordinate stakeholders	- Mentor local utility engineers and contractors	Included in Final Summary Report	Final report due within 7 working days after assignment end
		- Liaise with UNICEF teams and local authorities		

<sup>1</sup> site visits documented with photos; Zero critical non-conformances identified post-handover; 100% completeness of required documentation fields; All boreholes commissioned within X days of pump installation with full commissioning checklist signed

Risk Management and Adaptive Support	Monitor risks and adapt plans as needed	- Identify environmental, security, or technical risks	Included in Final Summary Report	Final report due within 7 working days after assignment end
		- Recommend mitigation or adaptive actions		

## QUALIFICATIONS, SPECIALIZED EXPERIENCE AND ADDITIONAL COMPETENCIES

### Qualification requirements

To complete this assignment, UNICEF is looking for an individual with the following profile:

#### Education:

- Advanced university degree (Master's or equivalent) in Geology, Hydrogeology, Water Resources Engineering, Civil Engineering, Environmental Engineering, or a related technical field.
- A first-level university degree in combination with two additional years of qualifying experience may be accepted in lieu of the advanced degree.

#### Work Experience:

- Minimum 5 years of professional experience in groundwater exploration, borehole drilling supervision, or water infrastructure development.
- Proven field experience in supervising drilling contractors and managing quality control processes for groundwater development.
- Experience working in humanitarian, post-conflict, or emergency settings is a strong asset.
- Familiarity with Ukrainian WASH standards and/or international drilling and groundwater development guidelines (e.g., UNICEF, WHO, ICRC, Sphere) preferred.

#### Technical Skills and Competencies:

- In-depth knowledge of borehole construction, drilling techniques (rotary, percussion, etc.), aquifer testing, and water quality monitoring.
- Strong skills in interpreting hydrogeological surveys and borehole designs.
- Ability to assess contractor compliance and enforce corrective measures in the field.
- Proficient in technical documentation, reporting, and use of field supervision tools.

#### Languages:

- Fluency in English required.
- Working knowledge of Ukrainian or Russian is an asset.

#### Other Requirements:

- Willingness and physical ability to be present full-time in field locations across Kharkiv oblast, including in areas close to the contact line.
- Demonstrated ability to work in insecure, high-pressure environments and manage multiple stakeholders.
- Strong interpersonal skills, integrity, and commitment to UNICEF's core values of care, respect, integrity, trust, and accountability.