



FORENSIC SCIENCE UNIT (FSU)

Public Briefing:

Results of Forensic Excavations at the Bir Alou Antar Sinkhole, Ninevah Governorate, Iraq

Site: Bir Alou Antar Sinkhole (irq-nin-tal-bie-001).

Coordinates: 36.4300104°N 42.4468628°E (MGRS 38SKF7112534674).

Excavation Dates: May 23, 2024 – August 8, 2024

Investigating Institutions: Mass Graves Directorate (MGD) and Medico-Legal Directorate (MLD) in collaboration with the United Nations Investigative Team to Promote Accountability for Crimes committed by Da'esh/ISIL (UNITAD) as per Security Council Resolution 2379

Summary

The Bir Alou Antar sinkhole was forensically investigated based on widespread reports from Yazidi and Shia Turkmen communities that Da'esh/ISIL executed and disposed of 1,000 victims from these groups at the site during their occupation of Tal Afar from 2014 to 2017. The forensic investigation did not uncover evidence of such a large-scale crime-scene. It did, however, confirm the site as a substantial mass grave containing the remains of **a minimum number of 162 individuals and 39 body parts**. Preliminary data indicate that almost all the recovered victims are adult males, with one adult female and one young female (teenager) also recovered.

The observation of injuries provides an insight into the brutal nature of the crimes committed at Bir Alou Antar. These preliminary findings offer harrowing evidence of the violence inflicted upon these individuals. Gunshot wounds, blunt trauma, sharp trauma, as well as the effect of decelerating trauma, such as that produced by falling from a considerable height, were widely observed.

The victims exhibited variations in clothing and personal effects, indicating that they came from different circumstances and potentially experienced different contexts leading up to their deaths. The contrast between individuals dressed in orange-coloured “jump- suits”, bound with handcuffs, and individuals wearing civilian clothing and traveling with their personal effects is a strong indicator of group differentiation.

The excavation uncovered evidence of at least three distinct depositional events. Analysis of satellite imagery indicates that the site was used for executions and body disposal over a period of approximately 26 months.

Further forensic investigation is needed to locate potential additional mass graves in the Tal Afar area and account for more missing individuals. It is possible that Bir Alou Antar is not the only mass grave context created in connection to Tal Afar and its environs. Additionally, there are dozens of sinkholes in the wider region. It is essential to design an efficient and effective reconnaissance strategy to assess whether some of these are mass graves.

This briefing includes the key findings of the UNITAD Field Report (“Report on Findings from the Forensic Excavations at Bir Alou Antar Sinkhole, Ninevah Governorate, Iraq”). A more comprehensive understanding requires a full review of the document.

I. Understanding the Significance of Bir Alou Antar

The site is highly significant as it was suspected of holding the remains of victims from various groups, including Yazidi, Shi'a, Sunni, and tribal opponents of Da'esh/ISIL, who had forcefully disappeared between 2014 and 2017. Adequately addressing this forensic investigation required:

- **Establishing The Scale and Duration of Atrocities:** The site was used for body disposal over approximately 26 months, revealing the prolonged and systematic nature of Da'esh/ISIL's atrocities in the immediate region.
- **Understanding The Complexity of the Site:** Bir Alou Antar was not a single, homogeneous mass grave. It consisted of three distinct deposits (Central, Eastern, and Western), each with unique characteristics and forensic potential. This complexity added to the challenge of the forensic investigation.
- **Conducting Careful Excavation and Recovery:** Recognizing the sensitivity of the site, excavation was conducted manually to ensure the safety of both personnel and evidence. This meticulous approach underscored the commitment to preserving the dignity of the victims and maintaining the integrity of the evidence.
- **Linking Physical Evidence and Historical Context:** The presence of handcuffs, plastic ties, and blindfolds on several victims in the Central Deposit offered insights into the circumstances of their deaths. It also connected the physical evidence directly to the violent methods utilized by Da'esh/ISIL.
- **Interpreting Variations in Victimology Profiles:** Three distinct groups of victims were evident, based on clothing, personal effects, and the way their bodies were disposed of. These distinctions provide an understanding into the potential motivations and methods behind the executions and highlight the need for careful analysis to understand the full context of the crimes.
- **Addressing Public Expectations and Ensuring Transparency:** Recognizing the deep social significance of the site and the potential for public disappointment if the number of recovered remains fell short of expectations, forensic experts from MGD and UNITAD proactively engaged with community members and civil society organizations. A day for a public briefing was held to explain the methodology used and the excavations' findings, demonstrating a commitment to transparent communication with affected communities and the public at large.
- **Emphasizing the Ongoing Need for Justice and Accountability:** Bir Alou Antar stands as a stark reminder of the atrocities committed by Da'esh/ISIL and the urgent need for justice and accountability for the victims and their families. The meticulous work of the MGD, MLD and UNITAD FSU contributed to the broader effort to document these crimes and hold perpetrators accountable.

II. Forensic Methods Used at Bir Alou Antar

A variety of analytical methods were employed before and during the excavation and recovery of victims and evidence at the Bir Alou Antar sinkhole. These were crucial in recovering remains, associated evidence, understanding the site formation processes and the sequence of events related to the execution and disposal of victims.

II.1 Site Assessment and Preliminary Analyses

- **Site Reconnaissance and Assessment:** Numerous site visits were conducted by the combined MGD and UNITAD FSU team starting in 2019. These visits helped to characterize the sinkhole, identify the main deposits, document the presence of human remains, and gather data for further planning.
- **Testimonial Review:** UNITAD FSU reviewed available testimonies, although none provided firsthand accounts of executions at the site. The testimonies contributed to the understanding of the broader context of Da'esh/ISIL atrocities in the immediate region.
- **Satellite Imagery Analysis:** Examining imagery from 2014 to 2017 revealed significant disturbances in the landscape south of the sinkhole, consistent with the hypothesis of executions and disposal of bodies highlighted by testimonies.

- UAV Surveys: UAV flights provided detailed imagery of the sinkhole and its surroundings, aiding in site characterization and feature-identification.
- 3D Laser Scanning: High-resolution scans created accurate 3D models of the sinkhole and the deposits, enabling detailed analysis of the site's morphology and potential collapse risks.
- Digital Forensic Analysis: The comparison of older versus new video footage and imagery, assisted in understanding the development of the site over the years, in addition to analysing processed and raw data recovered from various digital sources.

II.2 Insights from Satellite Imagery in the Bir Alou Antar Forensic Investigation

The analysis of satellite imagery played a crucial role in the forensic investigation, providing insights into the timeline and nature of the events that took place:

- **Confirming Da'esh/ISIL Activity:** The imagery analysis, covering the period from January 2014 to February 2017, revealed significant disturbances in the landscape surrounding the sinkhole. This period coincided with Da'esh/ISIL control of Tal Afar, indicating that the observed changes were likely linked to their activities.
- **Detecting Temporal Changes:** By comparing imagery from different dates, UNITAD FSU identified patterns of disturbance that pointed to ongoing activity at the site. Specifically, disturbances noted in imagery from September 7, 2014, continued to be visible in later imagery captured through February 6, 2017. This ongoing activity during the period of Da'esh/ISIL control reinforced the hypothesis that these changes were deliberate and connected to the execution and disposal of victims.
- **Focusing the Investigation:** The satellite imagery helped forensic analysis pinpoint specific areas of interest. Notably, significant disturbances were observed in the area immediately south of the sinkhole's edge. This observation supported the hypothesis that some victims were executed in this area before their bodies were disposed of in the sinkhole.
- **Validating Testimonies:** While no known witnesses directly observed executions at Bir Alou Antar, the satellite imagery provided independent corroboration for the accounts of widespread atrocities committed by Da'esh/ISIL in the immediate region. The imagery analysis aligned with the general timeline and patterns of activity described in statements.
- **Generating Hypotheses about Site Formation:** The imagery analysis, in conjunction with 3D laser scanning and site assessments, led UNITAD FSU to develop hypotheses about the formation of the three main deposits at the base of the sinkhole. This understanding of the site's evolution was crucial in guiding the excavation strategy, which ultimately led to the discovery and recovery of all the victims in the site.

II.3 Safety and Logistical Preparations

- **Explosive Remnants of War (ERW):** The United Mine Action Service (UNMAS) conducted surveys to ensure the site was safe for excavation. They identified mine markers and a large sack of ammunition but no active explosive material. Further support was received from the Iraqi Defence Force throughout the excavation.
- **Health and Safety Measures:** A multi-story scaffolding tower was built and installed for safe access, and specialist personnel were contracted to manage venomous snakes, arachnids and insects. Medical and Civil Protection personnel were on standby.

II.4 Excavation and Recovery

- **Surface Remains Recovery:** The initial focus was on mapping and recovering vulnerable surface remains, with at least 30 victims visible on the Central deposit.
- **Stratigraphic Excavation:** This meticulous technique involved carefully removing layers of soil and sediment to understand the sequence of victim deposition and identify changes over time.
- **Test Trenching:** Using archaeological methodology, trenches were excavated to investigate the extent and composition of the deposits and to locate potential remains.

- Documentation, Photography and Mapping: Graphic documentation was crucial for recording the precise context of the finds.

II.5 Analysis and Interpretation

- Analysis of Deposits: The composition, colour, and compaction of each deposit was analysed to understand formation processes and potential connection to the events.
- Spatial Analysis of Remains: The location, orientation, and distribution of the remains provided insights into the methods of disposal and potential temporal sequences of events.
- Analysis of Associated Evidence: Examination of clothing, personal effects, shell casings, and other artefacts helped to reconstruct events.

By combining these various methods, the excavation at Bir Alou Antar recovered the remains of victims and provided valuable information about the events that transpired at the site. The analysis of the deposits, the spatial distribution of the remains, and the associated evidence all contributed to a better understanding of the scale and nature of the atrocities committed by Da'esh/ISIL.

III. Establishing the Relative Chronology of Events at Bir Alou Antar

A multi-faceted approach was employed to establish a relative sequence of events that led to the creation of the mass grave at the Bir Alou Antar sinkhole. MGD, MLD and UNITAD FSU employed a combination of techniques, including stratigraphic excavation, analysis of digital materials and imagery, and the review of witness testimonies.

- By observing the position of remains and associated evidence within each excavated layer, the forensic experts established a relative chronology of events. The stratigraphic excavation revealed a sequence of deposits that provided a comprehensive understanding of the site's formation:
 1. Earliest Phase: Large boulders found between the eastern and central deposits, likely collapsed from the sinkhole wall at a time unrelated to the crimes.
 2. Second Phase: A deposit of greyish-white sediment, sand, and large boulders, probably resulting from the collapse of the eastern wall of the sinkhole. This deposit extended under the central deposit.
 3. Final Phase: The Central deposit itself, composed of multiple layers of remains and materials, signifying a series of depositional events related to the execution and burial of victims.

IV. Victimology at Bir Alou Antar

The victims found at Bir Alou Antar were executed in different ways and in different locations, pointing to a deliberate and organized approach to the killings rather than random acts of violence. Several pieces of evidence support this conclusion:

- Varied Injuries: Preliminary forensic findings indicate a range of injuries and potential causes, including gunshot wounds, blunt force trauma, sharp force trauma, and injuries consistent with falls from a height. This diversity of injury patterns suggests that multiple execution methods were employed (see Section V).
- Distinct Clothing Styles: There was a stark contrast in clothing between some of the victims. Some were found dressed in orange jumpsuits, while others were clothed in civilian attire and had personal effects like medication, toiletries, and prayer beads with them. This suggests that these individuals may have been abducted and transported directly to the execution site, rather than being held as prisoners for an extended duration.
- Black Body-Bags: Some victims were found inside black body-bags, suggesting that their execution took place elsewhere.
- Variation in Ligatures and Restraints: The types of ligatures and restraints used on the victims also varied. Some individuals were bound with metal handcuffs, while others were found with their hands tied behind their backs using cloth or other materials.

- **Connection to Satellite Imagery Analysis:** The forensic team's analysis of satellite imagery revealed a pattern of ongoing disturbance in the area south of the sinkhole between 2014 and 2017, the period of Da'esh/ISIL control. This pattern of intermittent activity aligns with the hypothesis of multiple execution events taking place over time.
- **Multiple Depositional Events within the Central Deposit:** The excavation of the Central deposit revealed that it was not a single, homogenous mass, but rather consisted of layers of remains and material deposited over a period.

Taken together, these observations indicate that the Bir Alou Antar mass grave was not the site of a single, isolated violent crime but was instead used repeatedly over an extended period for the execution and disposal of victims from different backgrounds and circumstances. The variation in clothing and ligatures provides tangible evidence supporting this hypothesis, complementing the insights gained from satellite imagery analysis and the stratigraphic excavation of the site.

V. Types of Injuries Observed at Bir Alou Antar

The preliminary observation of injuries provides an insight into the violent nature of the crimes committed at Bir Alou Antar:

- **Gunshot Wounds:** The presence of gunshot wounds indicates the use of firearms in the executions. This is further suggested by the presence of deformed projectiles of different calibres found in association with several remains.
- **Blunt Trauma:** This category encompasses injuries caused by blunt force impact, suggesting victims may have been beaten, struck with objects, or subjected to other forms of physical assault.
- **Sharp Trauma:** This type of injury results from the use of sharp objects like knives or blades. The presence of sharp trauma suggests that a more deliberate and personal form of violence which was inflicted on several victims, including indications of beheading.
- **Decelerating Trauma:** This category refers to injuries caused by a sudden stop in motion, commonly associated with falls from a height. Given the site's morphology (a sinkhole with high walls), the presence of decelerating trauma suggests that victims were thrown in.

It is emphasized that these findings are preliminary, and further detailed analysis of the remains is needed for each victim. However, the variety of injuries observed paints a disturbing picture of the violence and suffering endured by those killed at Bir Alou Antar.

VI. Discrepancies in Victim Counts at Bir Alou Antar

There is a significant discrepancy between the reported number of victims and the actual number of remains recovered from the Bir Alou Antar sinkhole. While community groups and reports suggested that over 1,000 individuals were executed and disposed of at the site, excavations conducted by the MGD/MLD/UNITAD FSU team between May 23rd and August 8th, 2024, yielded a minimum number of 162 individuals and 39 body parts.

Further forensic investigation, focusing on constructing the Forensic Landscape, is essential to locate potential additional mass graves in the Tal Afar area and account for more missing individuals. It is likely that Bir Alou Antar is not the only mass grave context created in connection to Tal Afar and its environs. Additionally, there are dozens more sinkholes in the wider region. It is essential to design an efficient and effective reconnaissance strategy to assess whether some of these are mass graves.

VII. Community Engagement

A Public Briefing event held next to the Bir Alou Antar mass grave site served a crucial purpose in bridging the gap between forensic investigation processes and the expectations and concerns of the affected communities and had the following objectives:

- **Managing Expectations:** Figures circulating among family associations, NGOs, and the media regarding the number of victims at Bir Alou Antar were significantly higher than the number of remains recovered during the excavation. This discrepancy created a potential for disappointment and frustration among those who had hoped the site would provide closure for the missing from Tal Afar and its surroundings.

- **Transparency and Communication:** Recognizing the potential for disappointment, the MGD and UNITAD FSU organized a Public Briefing to provide a platform for open and honest communication with community members.
- **Explaining Forensic Limitations:** The event allowed experts to directly address the community's concerns and explain the realities of forensic investigation. They emphasized the meticulous nature of the process, the limitation in identifying remains, and the reasons why the number of recovered bodies might not align with initial estimates.
- **Building Trust and Understanding:** By inviting representatives from civil and religious organizations, including those from both the Yazidi and Shi'a communities, the organizers aimed to foster dialogue and build trust between the investigative team and the affected groups.
- **Demonstrating Respect for the Victims:** The Public briefing exemplified a commitment to treating the victims and their families with the respect and dignity that they deserve. By acknowledging the emotional weight attached to the site and the significance of the missing persons issue, the forensic experts expressed their empathy and willingness to engage with the community's pain and need for answers.

The Public Briefing was well-attended and successful in achieving its objectives. It provided an opportunity for direct interaction between experts and the community, facilitated a more nuanced understanding of the investigation process, and reinforced the importance of a collaborative approach to addressing the legacy of Da'esh/ISIL atrocities.

Additionally, a blood-gathering campaign, aiming to obtain further donor samples from family relatives of the victims, was held for one week in the location of Tal Afar. In the future, these samples could have a vital role in helping identify some of the victims recovered.

VIII. The Mass Graves Directorate (MGD)'s Role in the Bir Alou Antar Investigation

The MGD was the key partner in the investigation and excavation at the Bir Alou Antar sinkhole, operating under the legal framework of the Republic of Iraq:

- **Legal Authority:** The investigation and excavation was conducted in accordance with Articles 3 and 6 of the Mass Graves Affairs Law No. 5 for 2006, as amended, of the Republic of Iraq. This law grants the MGD authority over investigations related to mass graves and other illicit burial sites.
- **Documentation and Evidence Handling:** The MGD, in collaboration with the Medico-Legal Directorate (MLD), was responsible for the official documentation of the crime scene.
- **Evidence Collection and Chain of Custody:** The MGD managed the collection and transportation of evidence. Personal effects and clothing found with the remains were transported in body bags to the Medico-Legal Directorate in Baghdad. Other evidence, such as bullets and shell casings, was transported to MGD Baghdad for eventual handover to the Iraqi judiciary.
- **Collaboration with UNITAD:** The MGD worked closely with UNITAD FSU throughout the investigation. This collaboration included, joint site visits and assessments, pre-excavation planning and strategy meetings, and collaboration during the excavation itself.

IX. The UNITAD Forensic Science Unit's Role in the Bir Alou Antar Investigation

Following Security Council Resolution 2379 (2017), UNITAD was established and mandated to support domestic efforts to hold Da'esh/ISIL accountable by collecting, preserving and storing evidence of its crimes in Iraq that may amount to war crimes, crimes against humanity and genocide. Within this framework, UNITAD's Forensic Science Unit worked at the Bir Alou Antar mass grave site to assist Iraqi authorities develop a comprehensive evidentiary narrative of the crimes committed. UNITAD FSU's work at Bir Alou Antar contributed to this overarching goal through:

- **Detailed Pre-Excavation Planning and Analysis:** Several months were spent collecting, centralising, and analysing all available evidentiary and intelligence material and information, generating an integrated strategic plan for the execution of the forensic project.

- **Meticulous Excavation:** The 69-day excavation, the longest in UNITAD's history, involved the careful exploration of three distinct deposits within the sinkhole. This meticulous approach ensured the thorough recovery of human remains and associated evidence, crucial for building a detailed understanding of the events that transpired.
- **Documentation and Analysis:** recovery of various types of evidence, including human remains and personal artefacts. This evidence should allow the Medico-Legal Directorate (MLD) to conduct a rigorous analysis to establish victim biological profiles, potential causes of death, and ultimately the identification of the victims and their return to their families.
- **Capacity Building:** UNITAD FSU actively engaged in training Iraqi personnel from the MGD and MLD throughout the excavation. The project served as a comprehensive capacity-building opportunity, enhancing the skills of Iraqi forensic professionals in areas such as planning, logistics, inter-institutional coordination, large-scale soil management, forensic excavation and exhumation techniques, and site recording methods. This transfer of knowledge and expertise aimed to strengthen Iraq's forensic capabilities for future investigations.
- **Supporting with Equipment Donation, Training and Financial Support:** more than USD 160,000 were provided to MGD to support its work at the site.
- **Fostering transparency and Engagement with Families:** Recognizing the significant social and emotional impact of the Bir Alou Antar case, the UNITAD FSU took steps to ensure transparency with the families of the missing.

By undertaking these activities, UNITAD FSU's work at Bir Alou Antar went beyond recovering the victims. It aimed to piece together the puzzle of what happened at the site, establish accountability for the perpetrators, and ultimately provide a measure of justice and closure for the families of the victims.

X. Recommendation

Further forensic investigation is needed to locate potential additional mass graves in the Tal Afar area and account for more missing individuals. It is possible that Bir Alou Antar is not the only mass grave context created in connection to Tal Afar and its environs. Additionally, there are dozens of sinkholes in the wider region. It is essential to design an efficient and effective reconnaissance strategy to assess whether some of these are mass graves.

UNITAD