

Mass graves at Pishchanske Cemetery in Izyum

RAPID REPORT

20 September 2022

1. BACKGROUND

Discovery of the burial sites

Ukrainian authorities reportedly discovered a large area of multiple burial sites in Izyum on 15 September 2022 following the city's liberation from the control of Russia-aligned forces, who captured the city in April of this year.ⁱ The location includes marked individual graves, unmarked individual graves, and graves containing multiple corpses buried together. The human remains uncovered so far are concentrated in a forested area in northwest Izyum near Pishchanske Cemetery on Shakespeare Street.ⁱⁱ

Initial reports indicate that this site was allegedly used to bury a mixed population of corpses, including Russia and Russia-aligned forces soldiers, Ukraine's combatants, and local civilians. These individuals may have died in either Russia's initial attack on Izyum or during its subsequent occupation. A 65-year old resident of Izyum who lives across the street from the cemetery told the *New York Times* that she saw Russia's forces bring bodies to the cemetery "nearly every night."ⁱⁱⁱ

Individuals with ropes around their necks, bound hands, and signs of alleged torture have reportedly been recovered by Ukrainian forensic technicians.^{iv} On 18 September 2022, it was reported that as many as six alleged "torture chambers" that had been operated by Russia-aligned forces were discovered by Ukrainian authorities in Izyum.^v There are reports of extrajudicial and/or arbitrary killings of civilians by Russia and Russia-aligned forces during occupation.^{vi} Individuals allegedly killed by shelling in March and thereafter were also interred at that location, according to a list of the buried visible in a video posted in a pro-Russia Telegram channel.^{vii}

Russia's taking of Izyum

Izyum fell to Russia by April 1 after a sustained barrage of rocket and artillery strikes that destroyed much of the city. Hundreds were allegedly killed in those strikes and others died related to the lack of functioning healthcare facilities.^{viii} The capture of Izyum was led by Russia's Second Combined Arms Army and the Twentieth Army of the Russian Armed Forces' Western Military District (military unit 89425, Voronezh), as well as units of the Russian Airborne Forces (VDV), special forces, naval infantry units of the Baltic Fleet, and SOBR (Special Rapid Response Unit) forces.^{ix} Both armies set up headquarters in schools in Izyum that were later destroyed in Ukrainian artillery strikes. The 20th Army's headquarters in Izyum Lyceum No. 2 was located approximately 1600 meters from Pishchanske Cemetery.^x

The constant shelling also prevented residents and local authorities from properly burying those killed. Civilians reportedly buried family members near where they fell in backyards and gardens. Others were taken to city parks to be buried. While some, when the shelling was particularly intense, were left where they fell.^{xi} Local officials claim, as a result of the fighting, only 15-20 thousand civilians of a pre-war population of 45 thousand remained in the city by the time it came under Russia's control. Many hid in the basements of damaged or destroyed buildings for weeks or more.^{xii}

2. METHODOLOGY, DATA SOURCES, LIMITATIONS

Methodology

This report was produced through a fusion of Very High Resolution (VHR) commercial satellite imagery analysis and open source data analysis. The imagery analysis team reviewed all available satellite imagery of the forested areas, fields, and roads within 2km of Pishchanske Cemetery (hereafter referred to as the "AOI"). The timeframe of reviewed imagery spanned from 2020 through September 2022. Most of the analyzed imagery was captured between March and September 2022, following Russia's assault on, and subsequent capture of, Izyum.

Data sources

All available Maxar imagery was acquired and analyzed through multi-temporal change detection methodology. Analysts compare the state and condition of features across a landscape at different points in time. Noted features were also measured to determine their consistency with military equipment and alleged individuated and mass burial sites.

Imagery analysts primarily sought to document instances of disturbed earth and to identify the type of vehicles present in the imagery. Open source investigators utilized techniques consistent with the Berkeley Protocol on Digital Open Source Investigations and analyzed data from a range of sources including social media, traditional media, and human rights monitoring organizations.^{xiii}

Limitations

In identifying and documenting landscape changes, there were a number of principal confounders in establishing the nature of each instance of disturbed earth. These included tree cover, off-nadir angle, and commingling activities in the area. The identified earth disturbances are located in forested areas where tree cover greatly reduced the visibility in many areas of the AOI. The varying off-nadir angle in each analyzed satellite image hindered the effective comparison of the visual profile of disturbed earth over time. Finally, the significant geographical overlap of military- and burial-related activities, combined with the above cited visual confounders, severely limited the ability to

differentiate between the two types of activity with the imagery available. Open source investigations were limited by lack of ground reporting during Russia's occupation and limitations on residents' internet access.

3. FINDINGS

A) Multiple earth disturbances appear in and around cemetery between April and July

Extensive earth disturbances are visible near and around the cemetery between 6 April 2022 and July 2022. Approximately 55,000 square meters of land (5.5 hectares; 13.6 acres) appears to have been excavated between 6 April and 1 July 2022 in a manner consistent with reported burial operations. The zone containing disturbed earth includes the forested area directly adjacent to the cemetery that predates Russia's invasion of Ukraine in February 2022. It is important to note that the full extent of both the original Pishchanske Cemetery site in Izyum and all areas of additional disturbed earth related to burial operations cannot be determined with high confidence, given that parts of the cemetery are covered by forest foliage.

B) Two vehicles consistent with military excavators identified near cemetery

Images first posted on April 20 by an embedded media Telegram channel considered to be pro-Russia allegedly show the bodies of Ukrainian soldiers being buried in trenches. These trenches were apparently dug by an earth excavator near Izyum that is present in the photographs.^{xiv} It is not yet determined whether these photographs were taken at Pishchanske Cemetery. However, HRL concludes with high confidence that the excavator in the photographs is consistent with the EOV 3523 military excavator. At least two vehicles consistent with the EOV 3523 are present in 20 June 2022 satellite imagery near the cemetery. One is 450 meters away from the entrance and the second is 1800 meters from the entrance.

C) Significant military activity occurred at location when under Russia control

The team identified at least 40 military objects, including vehicles, communication and logistics hubs, and artillery positions. These often align with locations of disturbed earth. The military-style vehicles sighted included those consistent with Kamaz 63969 infantry transports, Ural 4320 transports, 2S3 self-propelled guns, T-72 main battle tanks. Each instance of disturbed earth was assessed for potential indicators consistent with either military operations or burial-related activities. Yale HRL analysts identified three types of locations with high confidence: (1) areas that clearly were disturbed related to military activities consistent with warfighting, (2) areas that were disturbed consistent with body disposal operations, and (3) areas where Yale HRL could not determine the cause of the disturbance. A detailed map delineating locations across these three categories was created by HRL but will not be released publicly due to the sensitivity of the data. That information will be shared on an as-needed basis with appropriate parties.

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ⁱ "Ukraine Finds Mass Burial Site in Izyum after Russians Driven Out," *Al Jazeera*, September 16, 2022, <https://www.aljazeera.com/news/2022/9/16/ukraine-finds-mass-grave-in-izyum-after-russians-driven-out>. <https://archive.ph/IFQsT>.

ⁱⁱ N.B.: This report uses only the English name of place locations and English names are transliterated from Ukrainian. Many media outlets refer to this as Shakespeare Cemetery. These names refer to the same location.

ⁱⁱⁱ Kramer, Andrew E., and Marc Santora. "At Mass Grave Site in Ukraine's Northeast, a Sign of Occupation's Toll." *The New York Times*, September 16, 2022, sec. World. <https://www.nytimes.com/2022/09/16/world/europe/ukraine-graves-russia.html>. <https://archive.ph/7JRuj>.

^{iv} Stepanenko, Vasilisa. "Ukrainian President: Burial Site Contains Torture Victims." *AP News*, September 16, 2022. <https://apnews.com/article/russia-ukraine-zelenskyy-kyiv-government-and-politics-kharkiv-ab651a4c1b639e6482b819a6af22166b>.

^v "На Деокупованій Харківщині Виявили 10 Катівень, Шість Із Них – в Ізюмі," *Ukrinform*, September 16, 2022, <https://www.ukrinform.ua/rubric-ato/3572833-na-deokupovanij-harkivsini-viavili-10-kativen-sist-iz-nih-v-izumi.html>. <https://archive.ph/QWbG0>.

^{vi} Volodymyr Matsokin, "Ви впевнені в тому, що знаєте, що таке жах?..." Facebook, September 12, 2022, <https://www.facebook.com/volodymyr.matsokin/posts/pfbid027CD1EF743keaA1kCdHTjZn9iuYQ5hta9pA4C8jnStfadXrCXFQ3rqWjA2s6A7Uzsl>. <https://ghostarchive.org/archive/AhmvH>; "В Ізюмі окупанти розстріляли людей, які шукали мобільний зв'язок на горі - ЗМІ," July 12, 2022, <https://archive.ph/qjJc9>. <https://www.unian.ua/war/v-izyumi-okupanti-rozstrilyali-lyudey-yaki-shukali-mobilniy-zv-yazok-na-gori-zmi-novini-vtorgnennya-rosiji-v-ukrajinu-11899812.html>. <https://perma.cc/6J5Z-G7DQ>.

^{vii} Харківський Антикорупційний Центр. "Окупований Ізюм: як російські війська знищили багатопверхівки, в підвалах яких ховались люди," September 5, 2022, <https://archive.ph/dU81q>. <https://anticor-kharkiv.org/our-work/strong-okupovanyy-izium-iak-rosiyski-viyska-znyshchily-bahatopoverkhivky-v-pidvalakh-iakykh-khovalys-liudy-br-br-strong/>; Oleh Synegubov (@synegubov), "У

тимчасово окупованому Ізюмі з-під завалів п'ятиповерхового будинку...," Telegram, May 10, 2022, <https://archive.ph/c0FJ9>. <https://t.me/synegubov/3159>; "Ізюм. 53 День Війни. - Сайт 'Обрії Ізюмщини' - Новини в Городі Ізюм, Ізюмська Газета." <https://archive.ph/VpUIZ>. Accessed September 19, 2022. <https://obrii.com.ua/main/44736-izyum-53-den-vijni.html>; "Telegram: Contact @opersvodki." <https://archive.ph/2QFGC>. Accessed September 19, 2022. <https://t.me/opersvodki/4730>.

^{viii} Харківський Антикорупційний Центр. "Окупований Ізюм: як російські війська знищили багатоповерхівки, в підвалах яких ховались люди," September 5, 2022, <https://archive.ph/dU81q>. <https://anticor-kharkiv.org/our-work/strong-okupovanyy-izium-iak-rosiyski-viyska-znyshchyly-bahatopoverkhivky-v-pidvalakh-iakykh-khovalys-liudy-br-br-strong/>; Oleh Synegubov (@synegubov), "У тимчасово окупованому Ізюмі з-під завалів п'ятиповерхового будинку...," Telegram, May 10, 2022, <https://archive.ph/c0FJ9>. <https://t.me/synegubov/3159>; "Ізюм. 53 День Війни. - Сайт 'Обрії Ізюмщини' - Новини в Городі Ізюм, Ізюмська Газета." <https://archive.ph/VpUIZ>. Accessed September 19, 2022. <https://obrii.com.ua/main/44736-izyum-53-den-vijni.html>; Williams, Sophie, and Olga Pona, "We Tried Not to Watch' - Escapees Recount Terror of Russian-Occupied Izyum," BBC, May 7, 2022, sec. Europe. <https://www.bbc.com/news/world-europe-61354626>; "Ukraine: Beleaguered Town of Izyum at Breaking Point after Constant Attack from Russian Forces - New Testimony - Amnesty International." <https://archive.ph/AquoH>. Accessed September 19, 2022. <https://www.amnesty.org/en/latest/news/2022/03/ukraine-beleaguered-town-of-izium-at-breaking-point-after-constant-attack-from-russian-forces-new-testimony/>; Sky News. "Ukraine War: Izyum Mayor Is Fearing Nothing Less than a Catastrophe in the Bombed City." <https://perma.cc/52RE-3RJG>. Accessed September 19, 2022. <https://news.sky.com/story/ukraine-war-izyum-mayor-is-fearing-nothing-less-than-a-catastrophe-in-the-bombed-city-12577076>.

^{ix} Харківський Антикорупційний Центр. "Окупований Ізюм: як російські війська знищили багатоповерхівки, в підвалах яких ховались люди." <https://archive.ph/dU81q>. Accessed September 19, 2022. <https://anticor-kharkiv.org/our-work/strong-okupovanyy-izium-iak-rosiyski-viyska-znyshchyly-bahatopoverkhivky-v-pidvalakh-iakykh-khovalys-liudy-br-br-strong/>; Institute for the Study of War. "Russian Offensive Campaign Assessment, March 17." <https://archive.ph/bkM7E>. Accessed September 19, 2022. <https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-march-17>; Institute for the Study of War. "Institute for the Study of War." <https://archive.ph/pb7k1>. Accessed September 19, 2022. <https://www.understandingwar.org/backgrounder/russian-offensive-campaign-assessment-march-27>; "Facebook." <https://ghostarchive.org/archive/WQIpW>. Accessed September 19, 2022. <https://www.facebook.com/GeneralStaff.ua/posts/282539947392424>; "Telegram: Contact @sashakots." <https://archive.ph/f47P2>. Accessed September 19, 2022. <https://t.me/sashakots/30910>; "The Russian Military Took Control of the City of Izyum in the Kharkov Region." <https://perma.cc/2RJW-DACN>. Accessed September 19, 2022. <https://ria.ru/20220324/izyum-1779796491.html>; RIC (@rhoint_en), "And Today, Reportedly the First HIMARS Strike Aftermath Video Made It's Way Online...," *Twitter*, June 26, 2022. <https://archive.ph/MNi7k>. https://twitter.com/rhoint_en/status/1540903097442222083; Stewart, Will, and Laura Sharman. "Russians Holed up in School Blasted by New Missile Supplied to Ukraine by the US." *Mirror*, June 27, 2022. <https://archive.ph/5RWoa>. <https://www.mirror.co.uk/news/world-news/russians-holed-up-school-blasted-27335384>.

^x RIC (@rhoint_en), "And Today, Reportedly the First HIMARS Strike Aftermath Video Made It's Way Online...," *Twitter*, June 26, 2022. <https://archive.ph/MNi7k>. https://twitter.com/rhoint_en/status/1540903097442222083; Stewart, Will, and Laura Sharman. "Russians Holed up in School Blasted by New Missile Supplied to Ukraine by the US." *Mirror*, June 27, 2022. <https://archive.ph/5RWoa>. <https://www.mirror.co.uk/news/world-news/russians-holed-up-school-blasted-27335384>; Militarnyi. "Soldiers of the SOF Detected a Column of Russian Uragan Multiple

Rocket Launchers and Effectively Aimed Artillery Fire at It.” <https://archive.ph/rLPCJ>. Accessed September 19, 2022. <https://mil.in.ua/en/news/soldiers-of-the-sof-detected-a-column-of-russian-uragan-multiple-rocket-launchers-and-effectively-aimed-artillery-fire-at-it/>; “Facebook.”

<https://ghostarchive.org/archive/gY3pr>. Accessed September 19, 2022.

<https://www.facebook.com/100000698416484/posts/5502973813069178/?flite=scwspnss>; Dutczyn, Peter, “WATCH: Russian Army HQ Destroyed in Ukraine’s Donbas,” *Kyiv Post*, June 28, 2022, <https://www.kyivpost.com/russias-war/watch-russian-army-hq-destroyed-in-ukraines-donbas.html>, <https://archive.ph/EhLK3>.

^{xi} Масюк, Марія. “Як сьогодні живе Ізюм: розповідь Віктора, якого катували росіяни.” *Gwara Media*, June 28, 2022. <https://archive.ph/l4duo>. <https://gwaramedia.com/okupovani-jizyum-rozpovid-viktora-yakij-vizhiv-pislya-katuvan-rosiyan/>; “Ситуація в Ізюмі - Історії Тих, Кому Вдалося Врятуватися з Міста | Українська Правда _Життя.” Accessed September 19, 2022.

<https://life.pravda.com.ua/society/2022/05/11/248583/>; “Новини Харківщини: Війна і Окупація в Ізюмі - Спогади Жителів Про ‘Руський Мир.’” <https://archive.ph/p6ix5>. Accessed September 19, 2022.

<https://izvestia.kharkov.ua/proisshestvija/katuvannia-ta-prynyzhuvannia-spohady-zhyteliv-deokupovanoho-iziuma-pro-ruskyj-myr-foto/>; Williams, Sophie, and Olga Pona, “We Tried Not to Watch’ -

Escapees Recount Terror of Russian-Occupied Izyum,” *BBC*, May 7, 2022, sec. Europe.

<https://archive.ph/hjNAy>. <https://www.bbc.com/news/world-europe-61354626>; “Обрії Ізюмщини” - новини в городе Изюм, Изюмская газета, “Історія порятунку з окупованого Ізюма,” April 30, 2022, <https://obrii.com.ua/main/44830-istoriya-poryatunku-z-okupovanogo-iziuma.html>.

<https://archive.ph/bWfgm>.

^{xii} Ваграчна, Yuliya. “Володимир Мацокін, заступник міського голови Ізюма.”

<https://archive.ph/Oyt87>. Accessed September 19, 2022. <https://www.ukrinform.ua/rubric-ato/3446474-volodimir-macokin-zastupnik-miskogo-golovi-izuma.html>; “Ситуація в Ізюмі - Історії Тих, Кому Вдалося Врятуватися з Міста | Українська Правда _Життя.” <https://archive.ph/AlEqn>.

Accessed September 19, 2022. <https://life.pravda.com.ua/society/2022/05/11/248583/>.

^{xiii} “Open Source Investigations for Human Rights: Part 1,” <https://archive.ph/YY5Ng>, Accessed August 9, 2022, <http://advocacyassembly.org/en/courses/57/>; “Berkeley Protocol on Digital Open Source

Investigations,” <https://archive.ph/hKZZU>, Accessed August 9, 2022,

<https://humanrights.berkeley.edu/berkeley-protocol-digital-open-source-investigations>.

^{xiv} “Telegram: Contact @RVvoenkor.” <https://archive.ph/VI65p>. Accessed September 19, 2022.

<https://t.me/RVvoenkor/8875>; Junhyuk, Alex. “俄军新动作：乌军1个连仅存活2人，马市拿下乌军旅副指

挥官_腾讯新闻.” <https://perma.cc/XZL5-MXGT>. Accessed September 19, 2022.

<https://new.qq.com/rain/a/20220422A0B4XR00>.

SATELLITE IMAGERY

Mass graves at Pishchanske Cemetery

Izyum, Kharkiv oblast

PREPARED FOR THE CONFLICT OBSERVATORY BY

Yale SCHOOL OF PUBLIC HEALTH

Humanitarian Research Lab

DISTURBED EARTH

IZYUM, KHARKIV OBLAST

Date: 2022.05.08

Source: WV02

Ground Sampling Distance: 50 cm

Off-Nadir: 30.5018°

Several previously observed disturbed earth markings appear to have formed into tubular columns possibly resembling piled dirt.



EXCAVATOR, MASS GRAVES

IZYUM, KHARKIV OBLAST

Date: 2022.06.20

Source: WV03

Ground Sampling Distance: 47 cm

Off-Nadir: 38.0354°

Vehicle consistent with an EOV 3523 excavator situated on a KamAZ-53501 chassis can be seen in ground-level photograph published 21 April 2022.

This vehicle appears in the cemetery next to additional large area of disturbed earth consistent in dimension, color, and change-over-time with burial activity. Bodies dressed in military uniforms appear next to the trench.



**EOV 3523-CONSISTENT
EXCAVATOR**

IZYUM, KHARKIV OBLAST

Date: 2022.06.20
Source: WV03
Ground Sampling Distance: 47 cm
Off-Nadir: 38.0354°

Vehicle consistent with an EOV 3523 excavator situated on a KamAZ-53501 chassis, with the extended arm casting a shadow on the ground, can be seen in imagery collected 20 June 2022 and is no

longer present in imagery collected 07 July 2022. This excavator and accompanying vehicles were found approximately 1800 meters (in straight-line distance) from the cemetery entrance.



DISTURBED EARTH

IZYUM, KHARKIV OBLAST

Date: 2022.08.29

Source: GE01

Ground Sampling Distance: 46 cm

Off-Nadir: 21.1278°

New columns of disturbed earth (lighter markings) and thinner markings consistent with vehicle tracks are visible in several forest clearings, some partially obscured by tree cover.

Visual indicators (e.g., dimensions, color, location, and change-over-time) are consistent with burial activity.

