

OPEN SOCIETY JUSTICE INITIATIVE



EASTERN AND WESTERN GHOUTA SARIN ATTACK

INTRODUCTION

1. Chemical weapons attacks were conducted in the early hours of 21 August 2013 on Eastern and Western Ghouta in the Syrian Arab Republic ('Syria').
2. The attacks on Ghouta, with the nerve agent sarin, are the deadliest chemical attacks in the Syrian conflict.
3. Evidence collected in the immediate aftermath of the attacks, and over the last seven years, demonstrates that the Syrian government carried out the attacks.
4. This document summarizes portions of an evidentiary brief supporting a criminal complaint filed by the Open Society Justice Initiative, Syrian Center for Media and Freedom of Expression, and Syrian Archive on behalf of victims of the chemical attacks on Eastern and Western Ghouta.
 - First, this document details the use of chemical weapons on Eastern and Western Ghouta on 21 August 2013.
 - Second, it analyzes evidence supporting attribution of responsibility to the Syrian government, and identifies specific persons alleged to have had a role in the chemical attacks.
 - Third, it places the chemical attacks on Ghouta within the Syrian government's broader strategy and deliberate violence against civilians in opposition-held areas.
 - Finally, it discusses the use of chemical weapons in these attacks as a war crime and crime against humanity.
5. The complaint calls on the German federal prosecutor to investigate the use of chemical weapons in Ghouta as an international crime, and to pursue criminal prosecution of the suspected perpetrators.

THE USE OF CHEMICAL WEAPONS IN THE GHOUTAS

6. The chemical attacks on 21 August 2013 targeted two suburbs of Damascus. Eastern Ghouta, to the east of the Syrian capital, comprises a number of towns, including Ein Terma, Douma, Zamalka, Arbin, Harasta, Hammouriya, and Jobar. Chemical weapons struck Zamalka and Ein Terma. Conventional rockets were also used across Eastern Ghouta in the hours after the chemical attack, including in Ein Terma, Zamalka, Hezzeh and Arbin. The town of Moadamiyah in Western Ghouta, to the west of the capital, was also hit by chemical weapons hours after the chemical attacks in Eastern Ghouta.

7. Eastern and Western Ghouta were under opposition control at the time of the chemical attacks. Opposition forces captured Eastern Ghouta in November 2012; pro-government forces started a siege of Eastern Ghouta in April 2013 and recaptured the area on 14 April 2018.¹

Timeline

8. The chemical attacks on Eastern and Western Ghouta took place in the early hours of 21 August 2013.² The hours preceding the chemical attacks had been quiet in Eastern Ghouta, without military activity.³ Witnesses report chemical strikes on Eastern Ghouta at 01.20h, 01.30h, 01.50h, 02.00h, 02.30h, and 02.39h.⁴ The first social media reports of a shelling on Eastern Ghouta at approximately 01.15h did not specify whether the shelling comprised conventional or chemical weapons; the first social media reports of a chemical attack were at approximately 02.45h.⁵
9. Temperatures fell between 02.00h and 05.00h on the morning of 21 August.⁶ These were ideal conditions for the dispersion of chemical agents. The air was moving downward allowing the heavier sarin to penetrate into lower levels of buildings where people would seek shelter.⁷
10. Eyewitnesses describe that the chemical rockets were different from conventional rockets, notably because of the limited sound they made on impact.⁸ Witnesses recall shouts of a chemical attack,⁹ and seeing numerous people falling to the ground despite the absence of visible injuries or blood.¹⁰ People in the affected neighborhoods were advised to seek refuge on the highest possible grounds, such as roofs of buildings, to minimize their exposure to the chemicals.¹¹
11. Heavy conventional bombardments on Eastern Ghouta closely followed the chemical strikes, often targeting the tops of buildings.¹² People, who had sought refuge on

¹ Independent International Commission of Inquiry on the Syrian Arab Republic, 'The Siege and recapture of Eastern Ghouta', 20 June 2018, A/HRC/38/CRP.3, para. 20.

² Report of the United Nations Mission to Investigate Allegations of the Use of Chemical Weapons in the Syrian Arab Republic on the alleged use of chemical weapons in the Ghouta area of Damascus on 21 August 2013, 16 September 2013, A/67/997-S/2013/553 ('First UN Mission Report'), para. 19; US Government, 'Government Assessment of the Syrian Government's Use of Chemical Weapons on August 21, 2013', 30 August 2013, available at <https://obamawhitehouse.archives.gov/the-press-office/2013/08/30/government-assessment-syrian-government-s-use-chemical-weapons-august-21> ('US Intelligence Report') referring to "early hours"; Joint Intelligence Committee, 'Syria: Reported Chemical Weapons Use', 29 August 2013, available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/235094/Jp_115_JD_PM_Syria_Reported_Chemical_Weapon_Use_with_annex.pdf ('British Intelligence Report') referring to "early hours".

³ Information from witnesses.

⁴ Information from witnesses.

⁵ Bridget Kendall, 'Syria 'chemical attack': Distressing footage under analysis', BBC, 23 August 2013, available at <https://www.bbc.com/news/world-middle-east-23806491>; US Intelligence Report places the first social media report of a chemical attack at 02.30h.

⁶ First UN Mission Report, para. 22.

⁷ First UN Mission Report, para. 22.

⁸ Information from witnesses.

⁹ Information from witnesses.

¹⁰ Information from a witness.

¹¹ Information from witnesses.

¹² Information from witnesses; the French Intelligence Report estimates that conventional air and artillery bombardments took place between 03.00h and 04.00h, National executive summary of declassified intelligence, 'Cases of previous use of chemical agents by the Syrian regime: Chemical attack launched by the regime on Aug 2', 3 September 2013, available at

rooftops to avoid the chemicals, were killed in the ensuing shelling, or were affected by the chemicals when they sought cover from the shelling inside buildings.¹³

12. The Syrian government launched a ground offensive on Eastern Ghouta at approximately 06.00h on 21 August 2013.¹⁴

Victims of the Attacks

13. The chemical attacks on Eastern and Western Ghouta resulted in more than a thousand deaths and thousands of injuries.¹⁵ The Violations Documentation Center in Syria documented 818 deaths from chemical weapons in the Damascus suburbs on August 21 of which 802 deaths were civilians, 31% women and 13% children – making 98% of all deaths civilian.¹⁶
14. At the impact sites, first responders and community members reported seeing a large number of individuals lying on the ground; many were dead or unconscious.¹⁷ Victims, medical staff and first responders reported that affected individuals presented the following symptoms: foaming at the mouth; yellowed and bluish skin; convulsions; frozen and pinpoint pupils; itching; blurred vision; hallucinations; vomiting; loss of consciousness; and difficulty breathing.¹⁸ The UN Mission and Human Rights Watch reported similar symptoms.¹⁹ These symptoms are consistent with exposure to nerve agents, such as sarin.²⁰

https://www.diplomatie.gouv.fr/IMG/pdf/Syrian_Chemical_Programme.pdf ('French Intelligence Report'), p. 4-5.

¹³ Information from witnesses.

¹⁴ French Intelligence Report, p. 4-5; Gregory Koblentz, 'Syria's Chemical Weapons Kill Chain', Foreign Policy, 7 April 2017, available at <http://foreignpolicy.com/2017/04/07/syrias-chemical-weapons-kill-chain-assad-sarin/>; Valerie Szybala, 'Middle East Security Report 16: Assad Strikes Damascus', Institute for the Study of War, January 2014, available at http://www.understandingwar.org/sites/default/files/ISWAssadStrikesDamascus_26JAN.pdf, p. 29; Information from witnesses.

¹⁵ French intelligence estimated a minimum of 281 confirmed deaths and a much higher toll of approximately 1,500 deaths based on the attack's impact model, French Intelligence Report, p. 7; The United States estimated in a preliminary assessment that the chemical weapons attacks had killed 1,429 people, including 426 children, US Intelligence Report, p. 1; the British intelligence services estimated a minimum 350 deaths, British Intelligence Report p. 1; Médecins Sans Frontières reported that 3,600 persons had treated for symptoms consistent with exposure to chemical agents at three hospitals it supported in the area, of whom 355 died, Médecins Sans Frontières, 'Syria: Thousands Suffering from Neurotoxic Symptoms Treated in Hospitals Supported by MSF', 24 August 2013, available at <https://www.msf.org/syria-thousands-suffering-neurotoxic-symptoms-treated-hospitals-supported-msf>; Syrian Observatory for Human Rights confirmed at least 502 fatalities, Shashank Bengali, 'U.S. toll for Syria higher than others', Los Angeles Times, 4 September 2013, available at <http://articles.latimes.com/2013/sep/04/world/la-fg-syria-casualties-20130904>.

¹⁶ Violations Documentation Center in Syria (VDC), Database, available at <http://www.vdc-sy.info/index.php/en/martyrs/1/c29ydGJ5PWEua2lsbGVkX2RhdGV8c29ydGRpcj1ERVNDfGFwHJvdmVkPXZpc2libGV8ZXh0cmFkaXNwbGF5PTB8cHJvdmluY2U9Mnxjb2RNdWx0aT0xNXx0aGlzRGF0ZT0yMDEzLTA4LTIxfA>.

¹⁷ First UN Mission Report, Appendix 4, p. 19.

¹⁸ Information from witnesses including witnesses who report lasting health impacts.

¹⁹ First UN Mission Report, para. 25, and detailed medical findings in Appendix 4; Human Rights Watch, 'Attacks on Ghouta: Analysis of Alleged Use of Chemical Weapons in Syria', September 2013, available at https://www.hrw.org/sites/default/files/reports/syria_cw0913_web_1.pdf ('Human Rights Watch Report'), p. 4.

²⁰ Centers for Disease Control and Prevention, 'Toxic Syndrome Description: Nerve Agent and Organophosphate Pesticide Poisoning', available at <https://emergency.cdc.gov/agent/nerve/tsd.asp>; First UN Mission Report, para. 25; Human Rights Watch Report, p. 4; international humanitarian NGO Médecins Sans Frontières treated at least 3,600 persons for symptoms it said were consistent with

15. Casualties were taken to several medical facilities in the area; many of which became overwhelmed by the number of patients.²¹ Witnesses report areas in medical facilities littered with bodies of victims on the ground.²² Rescue treatment included stripping the victims of their clothing; rinsing their bodies with water; and administering atropine.²³ First responders and medical personnel were affected by exposure to the chemical weapons as they transported or administered treatment to the victims.²⁴ Witnesses report long-term effects of the attacks, including lasting physical impacts on their vision and psychological trauma.²⁵

Impact Sites

16. Several chemical rockets struck Eastern and Western Ghouta on 21 August 2013. The UN Mission operated under an extremely narrow investigation windows and only visited five impact sites: two sites in Western Ghouta (Moadamiyah) and three sites in Eastern Ghouta (Ein Terma and Zamalka).²⁶
17. Other independent investigations examined a number of additional impact sites in Eastern Ghouta. Human Rights Watch found that eight rockets had hit four localities in Zamalka alone.²⁷ The online investigative group Bellingcat analyzed three chemical impact sites in Eastern Ghouta, two of which had not been visited by the UN Mission.²⁸ Witnesses identify other impact sites in Eastern Ghouta not visited by the UN Mission.²⁹ SCM independently determined that 11 chemical rockets struck in Zamalka and two chemical rockets struck in Ein Terma.³⁰
18. Working with the Human Rights Center Investigations Lab at UC Berkeley School of Law, we used hundreds of videos of the impact sites to verify the locations of five chemical impact sites, and identified a putative sixth impact site in Eastern Ghouta:
- Impact site C: a rocket pierced through the roof of a five-story building and landed in the room below, visited by the UN Mission on 28 August 2013,³¹ at coordinates 33.521641, 36.352425.³²

exposure to chemical agents, Médecins Sans Frontières, ‘Syria: Thousands Suffering from Neurotoxic Symptoms Treated in Hospitals Supported by MSF,’ 24 August 2013, available at <https://www.msf.org/syria-thousands-suffering-neurotoxic-symptoms-treated-hospitals-supported-msf>.

²¹ Information from witnesses.

²² Information from witnesses.

²³ Information from witnesses.

²⁴ Information from witnesses.

²⁵ Information from witnesses.

²⁶ First UN Mission Report, Appendix 5, p. 25.

²⁷ Human Rights Watch Report, p. 7.

²⁸ Bellingcat, ‘Locating the Rockets Used During the August 21st Sarin Attacks in Damascus’, 10 August 2014, available at <https://www.bellingcat.com/resources/case-studies/2014/08/10/locating-the-rockets-used-during-the-august-21st-sarin-attacks-in-damascus/> (‘Bellingcat Rocket Analysis’).

²⁹ Information from witnesses; Human Rights Watch confirmed in its investigation that a rocket had struck near the al-Kamal banquet hall and another by the nearby Hamza mosque, Human Rights Watch Report, p. 7.

³⁰ Information on file with SCM.

³¹ UN Mission Report, Appendix 5, p. 25 and Appendix 6, p. 31; investigated as ‘Rocket 3’ in Bellingcat Rocket Analysis; UN inspectors’ visit of the site was recorded in the following video, <https://www.youtube.com/watch?v=xrmPdJhbxcA&index=2&list=PLPC0Udeof3T707pSBU2Leey2pVN03oRUX>.

³² Coordinates by Bellingcat and Human Rights Center Investigations Lab at UC Berkeley School of Law. Rocket described by Bellingcat as “Rocket 3” in Bellingcat Rocket Analysis.

- Impact site D: an open field with rubble near impact site C located by al-Mahariq street³³ and visited by the UN Mission on 28 August 2013,³⁴ at coordinates 33.520399, 36.356026.³⁵
 - Impact site E: a kitchen and balcony in an apartment building visited by the UN Mission on 29 August 2013,³⁶ the coordinates are unknown.
 - Impact site F: an empty open field at coordinates 33.520689, 36.357391³⁷
 - Impact site G: a rocket penetrated a residential building, pierced through the outside wall and landed on the adjacent street, at coordinates 33.525371, 36.362192.³⁸
 - Putative impact site H: a rocket in rubble near the al-Tawfiq mosque,³⁹ at coordinates 33.524241, 36.359544.⁴⁰
19. In Western Ghouta, a witness interviewed by Human Rights Watch stated that seven rockets struck two areas of Moadamiyah on 21 August 2013.⁴¹ The two chemical weapons impact sites in Western Ghouta that were visited by the UN Mission on 26 August 2013 appear to have been caused by the same rocket:⁴²
- Impact site A: a rocket pierced the vegetal trellis of an apartment building's backyard terrace and landed on the terrace floor; and
 - Impact site B: the corner of the second floor of an apartment building to the east of impact site A and adjacent to it.

Munitions and Delivery Systems

20. The type of munition loaded with a chemical agent used in Eastern Ghouta was a variant of an unguided conventional artillery rocket alternatively described as a 330mm rocket based on the diameter of its stabilizing ring⁴³ or as a 122mm rocket based on the diameter of its central tube.⁴⁴ The warhead at the front of the rocket was equipped with

³³ Human Rights Watch Report, p. 8.

³⁴ First UN Mission Report, Appendix 5, p. 22 and Appendix 6, p. 31; the UN inspectors' visit of the site was recorded in the following videos: <https://www.youtube.com/watch?v=MmP6wPdTIUM>, <https://www.youtube.com/watch?v=H4jx5V2PvnE>.

³⁵ Coordinates by Bellingcat and Berkeley Human Rights Center. Rocket described by Bellingcat as "Rocket 1" in Bellingcat Rocket Analysis.

³⁶ UN Mission, Appendix 6, p. 29.

³⁷ Investigated as 'Rocket 1' in Bellingcat Rocket Analysis and coordinates provided by Eliot Higgins; the impact site was recorded in the following videos:

<https://www.youtube.com/watch?v=qBKuVxggSJ8&list=PLPC0Udeof3T7prlhd3qUZNFZun57tcnhD>.

³⁸ Coordinates by Bellingcat and Berkeley Human Rights Center. Rocket investigated as "Rocket 2" in Bellingcat Rocket Analysis.

³⁹ The impact site was recorded in the following video:

https://www.youtube.com/watch?v=lb2RkVVK_Aw&list=PLPC0Udeof3T79tHZ0yJ1A2c2rGP8O1DYU; Human Rights Watch Report, p. 7. notes that three rockets struck the al-Mazraat neighbourhood next to the al-Tawfiq mosque and next to the elementary school

⁴⁰ Coordinates by Berkeley Human Rights Center.

⁴¹ Human Rights Watch Report, p. 4.

⁴² First UN Mission Report, Appendix 5, p. 21.

⁴³ First UN Mission Report, Appendix 5, p. 22 ; Human Rights Watch Report, p. 7, 9.

⁴⁴ C. J. Chivers, 'New Study Refines View of Sarin Attack in Syria', The New York Times, 28 December 2013, available at <https://www.nytimes.com/2013/12/29/world/middleeast/new-study-refines-view-of-sarin-attack-in-syria.html?auth=login-email&login=email> ('New York Times Study'); a diagram of the munition published together with the study is available here:

<https://archive.nytimes.com/www.nytimes.com/interactive/2013/12/29/world/middleeast/rockets-document.html>; see also Bellingcat, 'Volcanoes in Damascus', 15 July 2014, available at

<https://www.bellingcat.com/resources/case-studies/2014/07/15/volcanoes-in-damascus/>; Eliot Higgins

a filling plug and carried the chemical load; its approximate liquid capacity was between 50 and 60 liters.⁴⁵

21. The munitions loaded with a chemical agent used in Western Ghouta were M14 artillery rockets, also known as 140 mm rockets.⁴⁶ The approximate chemical capacity of the rockets was 2.2 liters.⁴⁷

Presence of Sarin

22. The UN Mission concluded that it had “collected clear and convincing evidence that chemical weapons were used also against civilians, including children, on a relatively large scale in the Ghouta area of Damascus on 21 August 2013.”⁴⁸ The findings drew on interviews with survivors and medical personnel;⁴⁹ chemical and medical samples taken from interviewees;⁵⁰ and environmental samples from impact sites.⁵¹ Environmental samples collected by the UN Mission in Eastern and Western Ghouta were positive for sarin degradation products (DIMP, IPMPA, MPA, MPFA or a combination thereof).⁵² Other chemicals present in the samples included hexamine and hexafluorophosphate.⁵³
23. The Independent International Commission of Inquiry on Syria (“COI”) of the UN Human Rights Council, based on independently collected information, confirmed the UN Mission’s findings that chemical weapons, specifically sarin, had been used in Eastern and Western Ghouta on 21 August 2013.⁵⁴
24. Independently of the biomedical and environmental samples, several elements indicate the rockets carried chemical warheads, including the absence of large craters consistent with explosive loads; the absence of injuries on victims consistent with explosive loads or of severe burns consistent with incendiary loads; and the presence of filling plugs in the munitions.
25. The symptoms of the victims were widely consistent with exposure to a nerve agent, and specifically sarin, as detailed above.

and Dan Kaszeta, ‘It’s clear that Turkey was not involved in the chemical attack on Syria’, The Guardian, 22 April 2014, <https://www.theguardian.com/commentisfree/2014/apr/22/allegation-false-turkey-chemical-attack-syria>.

⁴⁵ First UN Mission Report, Appendix 5, p. 24; Human Rights Watch Report, p. 9.

⁴⁶ First UN Mission Report, Appendix 5, p. 26; Human Rights Watch Report, p. 5;.

⁴⁷ Human Rights Watch Report, p. 9, 12; US Defense Intelligence Agency and US Army Intelligence Agency, ‘Ammunition Data and Terminal Effects Guide -- Eurasian Communist Countries’, DST-1160Z-126-92, March 5, 1992, partially declassified and released to Human Rights Watch for the Human Rights Watch Report; Leland S. Ness and Anthony G. Williams, eds., Jane’s Ammunition Handbook 1997-1998 (Surrey, UK: Jane’s Information Group Limited, 2008), p. 544-45.

⁴⁸ Final UN Mission Report, para. 109.

⁴⁹ First UN Mission Report, paras. 25-26; Final UN Mission Report, para. 110.

⁵⁰ First UN Mission Report, paras. 25-26; Final UN Mission Report, para. 110.

⁵¹ First UN Mission Report, para. 24; Final UN Mission Report, para. 110.

⁵² Western Ghouta: First UN Mission Report, Appendix 7, pp. 30-31, confirmed in Final UN Mission Report, Appendix 5, p. 44-46. Eastern Ghouta: First UN Mission Report, Appendix 7, p. 33-34, confirmed in Final UN Mission Report, Appendix 5, p. 47-53.

⁵³ First UN Mission Report, para. 24; Final UN Report, para. 110.

⁵⁴ Western Ghouta: First UN Mission Report, Appendix 7, p. 30-31, confirmed in Final UN Mission Report, p. 44-46. Eastern Ghouta: First UN Mission Report, Appendix 7, p. 33-34, confirmed in Final UN Mission Report, p. 47-53.

⁵⁴ Seventh report of the Independent International Commission of Inquiry on the Syrian Arab Republic, 12 February 2014 (Seventh COI Report), para. 128; Ninth report of the Independent International Commission of Inquiry on the Syrian Arab Republic, 5 February 2015 (Ninth COI Report), para. 44.

Rockets Range and Launch Sites

26. The location of the launch sites for the rockets which landed in Eastern Ghouta has not been conclusively determined. The UN Mission determined upon analyzing the impact sites in Eastern Ghouta that the rockets used in Eastern Ghouta arrived from the northwest.⁵⁵
27. Early assessments of launch sites supposed that the chemical variant of the 330mm rockets originated from Mount Qasioun, located over 9km from Eastern Ghouta.⁵⁶ Information from insider witnesses and eyewitness suggest that at least some of the rockets fired at Eastern Ghouta came from Mount Qasioun.⁵⁷ The US government intelligence claimed immediately after the attacks that the rockets had been launched from regime territory.⁵⁸ Several sources highlighted issues with the US intelligence map that accompanied its report.⁵⁹
28. Later assessments of the rockets estimated that the munitions modified to carry a chemical load would have had a range of approximately 2km.⁶⁰ An approximate 2km range places the launch sites for the rockets that landed in Eastern Ghouta in the area between Qaboun and Jobar, to the north and northwest of the impact sites.⁶¹ The Air Force Intelligence Branch in Harasta could have been used as the launch point or a staging area for the attacks. The rockets could have been fired from government-held areas in close proximity to the impact sites,⁶² or from contested areas through mobile launchers attached to a truck.

⁵⁵ First UN Mission Report, Appendix 5, p. 22.

⁵⁶ C. J. Chivers, 'U.N. Data on Gas Attack Point to Assad's Top Forces', The New York Times, 17 September 2013, available at https://www.nytimes.com/2013/09/18/world/middleeast/un-data-on-gas-attack-points-to-assads-top-forces.html?_r=0; Josh Lyons, 'Dispatches: Mapping the Sarin Flight Path', Human Rights Watch, 17 September 2013, available at <https://www.hrw.org/news/2013/09/17/dispatches-mapping-sarin-flight-path>.

⁵⁷ Information from witnesses.

⁵⁸ Secretary John Kerry, 'Opening Remarks Before the United States Senate Committee on Foreign Relations' on 3 September 2013, quoted in David E. Sanger and Eric Schmitt, 'Allies' Intelligence Differs on Details, but Still Points to Assad Forces', 3 September 2013, available at <https://www.nytimes.com/2013/09/04/world/middleeast/allies-intelligence-on-syria-all-points-to-assad-forces.html>.

⁵⁹ New York Times Study; Eliot Higgins, 'Piecing together open source evidence from the Syrian Sarin attacks', Medium, 21 August 2015, available at <https://medium.com/1st-draft/piecing-together-open-source-evidence-from-the-syrian-sarin-attacks-9027f0238857>; Bellingcat, 'Identifying Government Positions During The August 21st Sarin Attacks', 15 July 2014, available at <https://www.bellingcat.com/news/mena/2014/07/15/identifying-government-positions-during-the-august-21st-sarin-attacks/>.

⁶⁰ New York Times Study; Higgins, 'Piecing together open source evidence from the Syrian Sarin attacks'; Higgins and Dan Kaszeta, 'It's clear that Turkey was not involved in the chemical attack on Syria'; the Head of the UN Mission Åke Sellström confirmed an estimated rocket range of 2 kilometers during a press conference following the publication of the final UN mission report, United Nations, YouTube, 'Press conference on investigative team's report relating to the use of chemical weapons in Syria', <https://www.youtube.com/watch?v=5CFn9pWNKeI>, 16:00-16:47.

⁶¹ Bellingcat, 'Identifying Government Positions During The August 21st Sarin Attacks'.

⁶² Bellingcat, 'Identifying Government Positions During The August 21st Sarin Attacks'; Bellingcat, 'Updated Google Earth Imagery from August 24th 2013 Reveals More Details About The August 21st Sarin Attack', 1 January 2015, available at <https://www.bellingcat.com/resources/articles/2015/01/01/updated-google-earth-imagery-from-august-24th-2013-reveals-more-details-about-the-august-21st-sarin-attack/>; Higgins, 'Piecing together open source evidence from the Syrian Sarin attacks'.

29. The 140mm artillery rockets, used in Western Ghouta, had a minimum range of 3.8 kilometers and a maximum range of 9.8 kilometers.⁶³ Analyses from The New York Times and Human Rights Watch suggest that the rockets which landed in Moadamiyah could have originated from the direction of the Mezzeh Military Airport or nearby base of the Syrian 4th Armored Division.⁶⁴

PERPETRATORS OF THE ATTACKS

30. US, French and British governments attributed the chemical attacks on Eastern and Western Ghouta on 21 August 2013 to the Syrian government.⁶⁵

Characteristics Linking Sarin to the Syrian Government

31. Characteristics of the sarin chemical agent deployed in Eastern and Western Ghouta link the chemical attacks to the Syrian government. First, the Syrian government's chemical weapons arsenal included sarin.⁶⁶ Second, the Syrian government conducted chemical attacks using sarin before 21 August 2013. French intelligence services stated that the Syrian regime had used sarin in limited attacks against the population prior to 21 August 2013: in Saraqeb on 29 April 2013 and in Jobar on mid-April 2013.⁶⁷ Third, specific characteristics of the sarin used in Eastern and Western Ghouta indicate that the Syrian government committed these attacks.⁶⁸ The samples collected and analyzed by the UN Mission from impact sites of the 21 August 2013 attacks, which tested positive for sarin, showed the presence of hexamine and hexafluorophosphate. Hexamine was declared by the Syrian government as part of its chemical weapon program after the attacks on 21 August 2013.⁶⁹ Hexamine had not previously been associated with sarin and is specific to the Syrian government's sarin manufacturing

⁶³ Human Rights Watch Report, p. 6; relying on US Defense Intelligence Agency and US Army Intelligence Agency, "Ammunition Data and Terminal Effects Guide – Eurasian Communist Countries," DST-1160Z-126-92, March 5, 1992, partially declassified and released to Human Rights Watch via FOIA request.

⁶⁴ Human Rights Watch Report, p. 6; Chivers, 'U.N. Data on Gas Attack Point to Assad's Top Forces', indicating the one of the rockets could have been launched from Mezzeh Military Airport.

⁶⁵ US Intelligence Report; French Intelligence Report; British Intelligence Report.

⁶⁶ Seventh Report of the Organisation for the Prohibition of Chemical Weapons-United Nations Joint Investigative Mechanism, 26 October 2017, S/2017/904, Annex II (7th JIM Report), p. 32. The Syrian government officially acknowledged that it possessed chemical weapons on 23 July 2012, Neil MacFarquhar and Eric Schmitt, 'Syria Threatens Chemical Attack on Foreign Force', The New York Times, 23 July 2012, available at <https://www.nytimes.com/2012/07/24/world/middleeast/chemical-weapons-wont-be-used-in-rebellion-syria-says.html>. Analyses from French intelligence, US intelligence and Human Rights Watch found that sarin was part of the Syrian government's chemical weapons, French Intelligence Report, US Intelligence Report, Human Rights Watch Report.

⁶⁷ French Intelligence Report, p. 3. This finding relied on biomedical and material samples from Saraqeb and Jobar collected by teams from the French newspaper Le Monde, Jean-Philippe Rémy, 'Syrie : comment les échantillons de gaz sarin ont été rapportés', Le Monde, 5 June 2013, available at https://www.lemonde.fr/international/article/2013/06/05/la-france-confirme-deux-cas-d-utilisation-de-gaz-sarin-en-syrie_3424378_3210.html and later 'Des analyses confirment l'ampleur de l'usage de sarin en Syrie', Le Monde, 28 June 2013, available at https://www.lemonde.fr/international/article/2013/06/05/la-france-confirme-deux-cas-d-utilisation-de-gaz-sarin-en-syrie_3424378_3210.html.

⁶⁸ The COI determined that the sarin used in the chemical attacks on Eastern Ghouta and Western Ghouta on 21 August 2013 and on Khan Al-Assal on 19 March 2013 "bore the same unique hallmarks", Seventh COI Report, para. 128; Ninth COI Report, para. 44.

⁶⁹ OPCW published on 20 November 2013 a document detailing the requirements for the treatment and disposal of the chemicals declared by the Syrian government which included 80 tons of hexamine, OPCW, 'Request for Expression of Interest', 20 November 2013, available at https://www.opcw.org/sites/default/files/documents/ADM/PSB/Tender/Request_for_EOI_OPCWCDB_EOI012013.pdf.

process.⁷⁰ Hexafluorophosphate has been linked to the Syrian government's stockpile, including by the Joint Investigative Mechanism between the UN and the OPCW in relation to the sarin attack on Khan Shaykhun on 4 April 2017.⁷¹

Characteristics Linking Rockets to the Syrian Government

32. The rockets deployed in Eastern Ghouta are also linked to the Syrian government. The Syrian government's use of 330mm rockets has been documented before and after the 21 August 2013 attacks.⁷² The Syrian government also possessed the launchers likely used to propel the rockets on Eastern Ghouta.⁷³

Alleged Responsible Units and Individuals

33. As discussed above, the brief presents information on two possible launch sites for the Eastern Ghouta attacks:
- Early assessments of the rockets' launch sites and information from insider witnesses and eyewitnesses suggest that the rockets fired at Eastern Ghouta came from Mount Qasioun. Mount Qasioun and the surrounding area is a strategic location for the Syrian government. It is close to the Presidential Palace, the Republican Guard 104th, 105th and 106th Brigades, the Special Forces base, and storage warehouses and laboratories from the Scientific Studies and Research Centre (SSRC), the Syrian government agency responsible for the development and production of conventional and non-conventional weapons, including SSRC Institute 1000 and Branch 450.⁷⁴ Witnesses report that they saw rockets launched from Mount Qasioun the night of 21 August 2013.⁷⁵
 - Later assessments, which considered the short range of the munitions which hit Eastern Ghouta, placed the launch site of the attacks in government-held positions

⁷⁰ Somini Sengupta, 'Report Detail Could Further Implicate Syria in Chemical Attack, Analysts Say', The New York Times, 18 December 2013, available at https://www.nytimes.com/2013/12/19/world/middleeast/experts-intrigued-by-tidbit-in-syrian-chemical-arms-report.html?_r=; Bellingcat, 'Attempts to Blame the Syrian Opposition for the August 21st Sarin Attacks Continue One Year On', 20 August 2014, available at <https://www.bellingcat.com/news/mena/2014/08/20/attempts-to-blame-the-syrian-opposition-for-the-august-21st-sarin-attacks-continue-one-year-on/>; French Intelligence, 'National evaluation: Chemical attack of 4 April 2017 (Khan Sheikhoun)', 26 April 2017, available at https://www.diplomatie.gouv.fr/IMG/pdf/170425_-_evaluation_nationale_-_anglais_-_final_cle0dbf47-1.pdf, p. 2-4.

⁷¹ 7th JIM Report, para. 87.

⁷² Human Rights Watch Report, p. 12-13; Bellingcat, 'Volcanoes in Damascus'; Higgins and Dan Kaszeta, 'It's clear that Turkey was not involved in the chemical attack on Syria'; videos of volcano rocket launches by pro-government forces are available here: <https://www.youtube.com/watch?v=8O7bhD1xW0Y&list=PLPC0Udeof3T4TATRDOq8E2H1tP03uObKR>.

⁷³ E.g. Higgins, 'Piecing together open source evidence from the Syrian Sarin attacks'; video footage is available here: https://www.youtube.com/watch?v=0gRIU98UQwI&feature=emb_logo; See e.g. ARES Iranian Falaq-1 and Falaq-2 Rockets in Syria, Research Report No.2; عرين الأسد, Facebook, 8 March 2015, <https://www.facebook.com/161765477223764/photos/a.850646101669028/854682754598696/?type=3&theater>; الموسوعة العسكرية للجيش العربي السوري, Facebook, 13 October 2014, <https://www.facebook.com/613871612065748/photos/a.637513299701579/643953729057536/?type=3&theater>; Syrian Armed Forces - القوات المسلحة السورية, Facebook, 5 March 2015, <https://www.facebook.com/syrianforces/photos/a.372693826181368/1202220719895337/?type=3&theater>.

⁷⁴ See OSJI and Syrian Archive, Investigation Report on SSRC, October 2020.

⁷⁵ Information from witnesses.

approximately 2km north of the impact sites.⁷⁶ If this information is correct, the area around the Air Force Intelligence Branch in Harasta could be a likely area for the launch of the rockets,⁷⁷ given the long-standing role of the Air Force Intelligence in Syria's chemical weapons program and their elite status among Syria's government security commands.⁷⁸

34. In Western Ghouta, evidence suggests that the rockets originated from the area around Mezzeh Military Airport. Mezzeh Military Airport is in close proximity to the Air Force Intelligence, a Republican Guard base, and the 4th Division base.⁷⁹
35. Several individuals allegedly have had a role in the Ghouta attacks and should be investigated:
 - President Bashar Al-Assad: As President of the Republic and Commander in Chief, President Assad holds the highest responsibility in authorizing the attacks on Ghouta, which would not have taken place at minimum without his knowledge. An insider witness stated that Assad authorized the attacks, and Maher al-Assad subsequently ordered the attacks.
 - Major General Maher Al-Assad: Assad is the brother of Bashar Al-Assad and de facto Commander of the 4th Division. He is one of the most influential individuals in Syria and he is one of three people in Syria, including the President, who has control over the deployment of chemical weapons. An insider witness indicated that the attacks were carried out on the personal orders of Maher al-Assad. His forces carried out a ground assault on Eastern Ghouta in the hours immediately following the chemical attacks. He has been sanctioned by various entities.⁸⁰
 - Brigadier General Ghassan Abbas: Abbas is a senior officer with the Air Force Intelligence and Head of SSRC Branch 450, the main SSRC entity responsible for supporting the planning and execution of Syria's chemical attacks. According to an insider witness, Abbas was present at the time of the attacks and oversaw the

⁷⁶ Bellingcat, 'Identifying Government Positions During The August 21st Sarin Attacks'.

⁷⁷ Bellingcat, 'Identifying Government Positions During The August 21st Sarin Attacks'; coordinates of the Air Force Intelligence Branch are 33.545179, 36.351314, Berkeley Human Rights Center.

⁷⁸ Gregory Koblentz, 'Syria's Chemical Weapons Kill Chain', Foreign Policy, 7 April 2017, available at <https://foreignpolicy.com/2017/04/07/syrias-chemical-weapons-kill-chain-assad-sarin/>; Gregory Koblentz, 'Chemical-weapon use in Syria: atrocities, attribution, and accountability', 26 The Nonproliferation Review (2019).

⁷⁹ Human Rights Watch Report, p. 6.

⁸⁰ EU, 'European Union Consolidated Financial Sanctions List', updated on 24 September 2020, available at <https://webgate.ec.europa.eu/fsd/fsf/public/files/pdfFullSanctionsList/content?token=dG9rZW4tMjAxNw> ('EU Sanctions List'); United Kingdom, 'Consolidated List of Financial Sanctions Targets in the UK', updated on 21 September 2020, available at <https://ofsistorage.blob.core.windows.net/publishlive/ConList.pdf> ('UK Sanctions List'); United States, 'Syria Caesar Act Designations', 17 June 2020, <https://www.state.gov/syria-caesar-act-designations/>.

arming of rockets with chemical warheads. He has been sanctioned by several entities,⁸¹ including specifically for his role in the chemical attacks on Ghouta.⁸²

- Major General Ali Wanus: Wanus is an attache officer between the Republican Guard 105th Brigade and the SSRC, and is alleged to be one of the key SSRC-affiliated individuals responsible for the use of chemical weapons in Ghouta. He has been sanctioned by several entities.⁸³
- Brigadier General Yusuf Ajib: Ajib is a Representative of the Presidential Palace and Head of Security for Branch 450. He has been sanctioned by the UK and EU for his role as Head of Security for the SSRC.⁸⁴
- Major General Hamid Tahir Khalil: Khalil was the Head of the Syrian Missile and Artillery directorate at the time of the attack, the entity responsible for the testing and use of the Syrian Arab Army's artillery, rockets, and missiles. An insider witness indicated that Khalil attended and supervised the attacks. He has been sanctioned by the EU and the UK,⁸⁵ including specifically for his role in the chemical attacks on Ghouta.⁸⁶
- Major General Jawdat Salbi Mawas: Mawas was a senior officer in the Syrian Missile and Artillery directorate at the time of the attacks. An insider witness indicated that Mawas attended and supervised the attacks. He has been sanctioned by the EU and the UK,⁸⁷ including specifically for his role in the chemical attacks on Ghouta.⁸⁸

⁸¹ EU Sanctions List; UK Sanctions List; United States Department of the Treasury, 'Treasury Sanctions Syrian Officials In Connection With OPCW-UN Findings Of Regime's Use Of Chemical Weapons On Civilians', 12 January 2017, available at <https://www.treasury.gov/press-center/press-releases/Pages/jl0701.aspx> ('US Sanctions linked to OPCW-UN Findings'); Australian Government, 'Autonomous Sanctions (Designated Persons and Entities and Declared Persons – Syria) List 2017, 17 August 2017, available at <https://www.legislation.gov.au/Details/F2017L01080>; ('Australia Sanctions List'); Canada, 'Consolidated Canadian Autonomous Sanctions List', updated on 29 January 2020, available at https://www.international.gc.ca/world-monde/international_relations-relations_internationales/sanctions/consolidated-consolide.aspx?lang=eng ('Canada Sanctions List').

⁸² EU, 'List of persons and entities under EU restrictive measures over the situation in Syria', 30 May 2017, available at <https://www.europarl.europa.eu/cmsdata/124083/list-persons-entities-EU-restrictive-measures-Syria-30052017.pdf> ('EU Persons and Entities Sanctioned over Syria'), states "He has been involved in the proliferation of chemical weapons and the organisation of chemical weapons attacks, including in Ghouta in August 2013. He therefore shares responsibility for the violent repression against the Syrian population"; UK Sanctions List states "Involved in the proliferation of chemical weapons and the organisation of chemical weapons attacks, including in Ghouta in August 2013"

⁸³ US Sanctions Linked to OPCW-UN Findings; UK Sanctions List; EU Sanctions List; Australia Sanctions List; Canada Sanctions List.

⁸⁴ UK Sanctions List.

⁸⁵ EU Sanctions List; UK Sanctions List.

⁸⁶ EU Persons and Entities Sanctioned Over Syria states "As a senior ranking officer of the Syrian Artillery and Missile Directorate, he is responsible for the violent repression of the civilian population, including the deployment of missiles and chemical weapons by Brigades under his command in highly populated civilian areas in Ghouta in 2013"; UK Sanctions List states he was "Responsible for the deployment of missiles and chemical weapons by Brigades under his command in highly populated civilian areas in Ghouta in 2013".

⁸⁷ EU Sanctions List; UK Sanctions List.

⁸⁸ EU Persons and Entities Sanctioned Over Syria states "As a senior ranking officer of the Syrian Artillery and Missile Directorate, he is responsible for violent repression against the civilian population, including the use of missiles and chemical weapons by Brigades under his command in highly populated civilian areas in 2013 in Ghouta"; UK Sanctions List states he was "Responsible the

- Major General Adnan Hilweh: Hilweh is a senior officer with the 155th Brigade and possibly the Deputy Director of the Syrian Missile and Artillery Directorate. His senior position with the 155th Brigade at the time of the attacks is corroborated by an insider witness. An insider witness indicated that Hilweh attended and supervised the attacks. He has been sanctioned by the UK and the EU,⁸⁹ including specifically for the deployment and use of missile and chemical weapons in 2013.⁹⁰
- Brigadier General Ghassan Ghannan: Ghannan was the Commander of the 155th Brigade and a close affiliate of Maher Al-Assad. An insider witness indicated that Mawas attended and supervised the attacks. He has been sanctioned by the EU and UK.⁹¹
- Major General Talal Makhluף: Makhluף was the Commander of the Republican Guards 105th Brigade at the time of the attacks. SSRC chemical weapons were stored at the 105th Brigade's warehouses. It is unlikely that Makhluף would not have been aware of or involved in the attack's planning and execution. He has been sanctioned by various entities.⁹²

CONTEXT OF THE CHEMICAL ATTACKS

36. The chemical attacks on Eastern and Western Ghouta are part of a broader pattern of deliberate, indiscriminate and widespread attacks perpetrated by the Syrian government against civilians in opposition-held areas. Syrian Archive has documented 212 chemical weapons attacks between 2011 and 2019, of which at least five were sarin attacks.⁹³
37. The Syrian government has pursued a military strategy of punitive counterinsurgency and collective punishment against the civilian population in areas held by opposition forces.⁹⁴ As a result, civilians have been the first casualties of the Syrian government's repeated attacks. By some estimates, the indiscriminate violence led the share of civilian casualties to rise dramatically from 4% in 2011 to 48% in 2012.⁹⁵
38. Consistent with the Syrian government's strategy of deliberately targeting civilians, the Ghouta attacks were not an isolated incident, but were part of a pattern of attacks using with chemical weapons or conventional weapons perpetrated by the Syrian government. Chemical attacks before August 2013 include the attacks on the Khan Al Asal

use of missiles and chemical weapons by Brigades under his command in highly populated civilian areas in Ghouta in 2013.”

⁸⁹ EU Sanctions List; UK Sanctions List.

⁹⁰ EU Persons and Entities Sanctioned Over Syria states “As the Brigadier General of 155 and 157 Brigade, he is responsible for the violent repression against the civilian population in Syria, including through his responsibility for the deployment and use of missile and chemical weapons in civilian areas in 2013 and involvement in the large scale detentions”; UK Sanctions List states “Responsible for the deployment and use of missile and chemical weapons in civilian areas in 2013”.

⁹¹ EU Sanctions List; UK Sanctions List.

⁹² US Sanctions linked to OPCW-UN Findings; EU Sanctions List; UK Sanctions List

⁹³ Syrian Archive, ‘Chemical Weapons Database’, available at <https://syrianarchive.org/en/datasets/chemical-weapons> and <https://syrianarchive.org/en/datasets/chemical>.

⁹⁴ Tobias Schneider and Theresa Lütkefend, ‘Nowhere to Hide: The Logic of Chemical Weapons Use in Syria’, GPPI, February 2019, p. 26; Luke O’Brien and Aaron Stein, ‘The Military Logic behind Assad’s Use of Chemical Weapons’, War on the Rocks, 15 June 2018, available at <https://warontherocks.com/2018/06/the-military-logic-behind-assads-use-of-chemical-weapons/>.

⁹⁵ Schneider and Lütkefend, ‘Nowhere to Hide’, p. 26-27 based on data from the VDC.

neighborhood of Aleppo on 19 March 2013,⁹⁶ Eastern Ghouta in Jobar in April 2013,⁹⁷ and near Harasta on 25 May 2013.⁹⁸

39. The pattern of violence against civilians also included the deliberate targeting of civilian infrastructure, particularly medical facilities. Medical hospitals in Ghouta were attacked close to the time of the chemical attacks. The Douma National Hospital was struck by a conventional rocket on 13 August 2013. The Al-Fatih Hospital in Kafr Batna was bombarded several times, including on 21 August 2013.⁹⁹

THE CHEMICAL WEAPONS ATTACKS WERE AN INTERNATIONAL CRIME

40. The use of chemical weapons on Eastern and Western Ghouta constitutes war crimes prohibited under international criminal law, including the war crimes of employing poison or poisoned weapons¹⁰⁰ and the war crime of employing prohibited gases, liquids, materials or devices.¹⁰¹
41. The chemical attacks on Eastern and Western Ghouta also constitute crimes against humanity prohibited under international criminal law, including murder¹⁰² and other inhumane acts intentionally causing great suffering or serious injury to body or to mental or physical health.¹⁰³

⁹⁶ Final UN Mission Report, Appendix 3.

⁹⁷ French Intelligence, 'Allegations of use of chemical weapons in Syria since 2012', 6 April 2017, available at https://www.diplomatie.gouv.fr/IMG/pdf/170425_-_national_evaluation_annex_-_anglais_cle81722e.pdf

⁹⁸ Information from witnesses.

⁹⁹ Information on file with SCM; VDC, 'On the Use of Chemical Weapons in the Damascus Countryside', 22 August 2013, available at <https://www.vdc-sy.info/pdf/reports/chemicaldamascussuburbs-Arabic.pdf>

<https://www.vdc-sy.info/pdf/reports/chemicaldamascussuburbs-Arabic.pdf>

¹⁰⁰ Article 8(2)(e)(xiii), Statute of the International Criminal Court (ICC Statute).

¹⁰¹ Article 8(2)(e)(xiv), ICC Statute.

¹⁰² Article 7(1)(a), ICC Statute.

¹⁰³ Article 7(1)(k), ICC Statute.