



### NOTE BY THE TECHNICAL SECRETARIAT

#### REPORT OF THE OPCW FACT-FINDING MISSION REGARDING INCIDENTS OF ALLEGED USE OF TOXIC CHEMICALS AS A WEAPON IN KHARBIT MASSASNEH, SYRIAN ARAB REPUBLIC ON 7 JULY AND 4 AUGUST 2017

#### 1. SUMMARY

- 1.1 On 26 October 2017, the Syrian Arab Republic informed the Technical Secretariat (hereinafter “the Secretariat”) of the Organisation for the Prohibition of Chemical Weapons (OPCW) about two incidents that occurred in Kharbit Massasneh<sup>1</sup> in the Governorate of Hama in the Syrian Arab Republic on 7 July 2017 and 4 August 2017. The Syrian Arab Republic reported a “mortar attack with poisonous gas” on positions of the Syrian Arab Army (SAA) in said area, resulting in several casualties among soldiers who were subsequently transported to Hama National Hospital (hereinafter “the Hospital”). As a result, the National Authority of the Syrian Arab Republic requested the Secretariat to investigate both incidents.
- 1.2 In response to the request of the Syrian Arab Republic, the Secretariat conducted initial open-source research to gather additional information about the reported incidents, but no further data was available.
- 1.3 Based on the information received, the Director-General mandated the Fact-Finding Mission (FFM) of the OPCW to collect facts pertaining to the reported incidents. To this end, the FFM conducted four deployments to the Syrian Arab Republic.
- 1.4 The FFM obtained information about the reported incidents through:
  - (a) exchanging correspondence with the Syrian Arab Republic, including notes verbales;
  - (b) holding meetings with the Syrian Technical Committee of the National Authority of the Syrian Arab Republic (hereinafter “the Technical Committee”);

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<sup>1</sup> Other spellings for Kharbit Massasneh from other sources include: Masasneh, Khirbat Masasneh, Khirbet Masasneh, Kharbit Masasnah, Masasneh, or Massasneh. In this report, Kharbit Massasneh is used to ensure consistency with the English version of the notes verbales received from the Syrian Arab Republic.



- (c) conducting and analysing 19 interviews with 18 individuals, including medical personnel, casualties, military personnel, and witnesses of the reported incidents in Kharbit Massasneh; and
  - (d) reviewing and analysing material such as photographs, videos, records, and files received and gathered by the FFM.
- 1.5 The FFM examined and analysed all the information received and gathered and established the following:
- (a) Through medical records, the team verified the admission of a total of seven casualties to the Hospital on 8 July<sup>2</sup> and 4 August 2017.
  - (b) The complaints and symptoms of the casualties described during interviews, as well as the clinical signs reported in the medical records, are not consistent with any single well-defined toxidrome, and there were signs of irritation that cannot be linked to a specific class of chemicals.
  - (c) A team from the SAA Chemical Prevention Branch visited the general area 10 hours after the incident of 7 July 2017, but did not access the site of the incident. The team attempted to obtain a reading with a handheld detector but was not able to identify a chemical substance.
  - (d) The photographs and video recordings taken at the Hospital, which were made available for investigation into the incident that took place on 4 August 2017, do not provide sufficient indicators of the exposure that was reported.
- 1.6 During the investigation, the FFM actively pursued further available information in possession of the Syrian Arab Republic. The team also requested and obtained clarifications and explanations for a number of inconsistencies observed in the course of its activities. Despite the clarifications offered by the Syrian Arab Republic, the FFM still faced challenges in collecting sufficient information for its investigation of reported incidents, namely:
- (a) The location of the incidents was in the vicinity of the confrontation line and was assessed as unsafe for the FFM to be deployed there in the aftermath of the reported incidents.
  - (b) No photographs or video recordings of the locations of the reported incidents, which were taken shortly after the occurrence of the incidents, were made available to the FFM.
  - (c) Munitions and the remnants thereof were not retrieved or collected as objects of interest for the investigation into the alleged incidents. The descriptions of the munitions provided by the witnesses do not offer an accurate indication of their type or calibre.

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2 The incident reported occurred around midnight on 7 July 2017. The casualties arrived to the hospital in the first hours of 8 July 2017.

- (d) No photographs or video recordings of munitions were available in the documents provided by the Syrian Arab Republic.
  - (e) Environmental samples were not collected from either of the reported incident locations.
  - (f) Blood samples were taken by Syrian medical staff from the casualties at the Hospital for medical purposes. No targeted analysis was conducted of the blood samples taken from casualties of the reported incidents, and these samples were not made available to the FFM.
  - (g) A liquid substance was reportedly observed on the clothes of several casualties. There was no precise description of the substance, no samples were taken from the clothing of the casualties, and the clothes were not retrieved.
- 1.7 The FFM examined the data obtained and collected, both individually and combined. The conclusions of this report are based on an analysis of all evidence taken as a whole: interviews, information provided by the Syrian Arab Republic through documents, digital material, and during meetings, as well as supporting material gathered during the interview process, and subsequent cross-reference and corroboration of information.
- 1.8 The following were used as the basis for the conclusions drawn by the FFM regarding its investigation into the reported incidents:
- (a) the analysis of the information and documents provided by medical personnel;
  - (b) the description of the “unknown gas” reportedly involved in the incidents;
  - (c) the fact that no environmental samples were taken from the clothes of the casualties or from the incident locations;
  - (d) the fact that no targeted analysis was performed on the blood samples taken from casualties of the reported incidents, and that these samples were not made available to the FFM; and
  - (e) the fact that, based on the above, the FFM cannot confidently provide a toxicological assessment of the reported exposure.
- 1.9 The information obtained and analysed in line with the FFM’s mandate to gather facts about incidents of the alleged use of toxic chemicals as a weapon in the Syrian Arab Republic did not provide reasonable grounds for the FFM to determine that toxic chemicals were used as a weapon in the reported incidents that occurred in Kharbit Massasneh, in Hama Governorate in the Syrian Arab Republic, on 7 July 2017 and 4 August 2017.
- 1.10 The FFM is grateful to the Syrian Arab Republic, as well as the individuals, witnesses, and other organisations that supported its activities, in addition to the States Parties to the Convention.

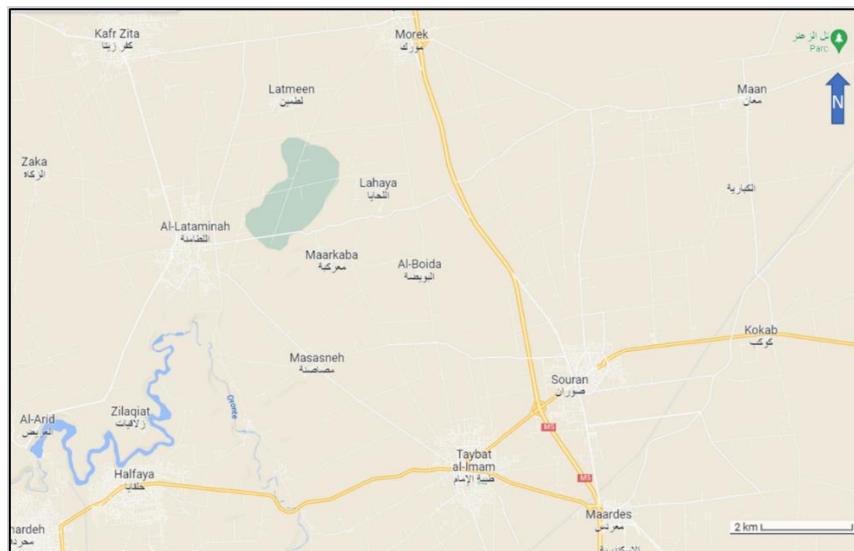
## **2. INTRODUCTION**

- 2.1 This report contains the findings and conclusions of the FFM following its investigation into the incidents reported in Kharbit Massasneh, Syrian Arab Republic, on 7 July and 4 August 2017. The activities of the FFM were conducted in accordance with decisions EC-M-48/DEC.1 (dated 4 February 2015) and EC-M-50/DEC.1 (dated 23 November 2015) of the OPCW Executive Council (hereinafter “the Council”), as well as other relevant Council decisions and the Director-General’s authority to seek to uphold at all times the object and purpose of the Chemical Weapons Convention (hereinafter “the Convention”), as reinforced by United Nations Security Council resolutions 2118 (2013) and 2209 (2015), as applicable to this investigation.
- 2.2 The terms of reference of the FFM were mutually agreed upon by the OPCW and the Syrian Arab Republic through the exchange of letters between the Director-General of the OPCW Secretariat and the Government of the Syrian Arab Republic, dated 1 and 10 May 2014, respectively (Annex to Note S/1255/2015\* by the Secretariat, dated 10 March 2015). The terms of reference of the FFM were endorsed by the OPCW Council in decisions EC-M-48/DEC.1 and EC-M-50/DEC.1 with express support for the continued work of the FFM in order to study all available information relating to allegations of the use of chemical weapons in the Syrian Arab Republic.
- 2.3 Both the OPCW Council and the United Nations Security Council have called upon the FFM to study all available information relating to allegations of the use of chemical weapons in the Syrian Arab Republic, including information provided by the Syrian Arab Republic and others.

## **3. BACKGROUND**

- 3.1 The sequence of events in this section was reported in public sources and was not the outcome of the FFM’s analysis.
- 3.2 Beginning in 2012, Hama Governorate witnessed heavy fighting, including air strikes, offensives, and counter-offensives. Several events occurring in 2016 and 2017 are presented in this section to provide an overview of the general situation in the region, particularly in the villages and towns surrounding Kharbit Massasneh, in the period before, during, and after the incidents that are the subject of this report.
- 3.3 In this section, several towns and villages—particularly in the northern countryside of Hama—are mentioned. Figure 1 provides an overview of these locations on the map.

**FIGURE 1: MAP OF TOWNS AND VILLAGES IN NORTHERN HAMA**



- 3.4 In August 2016, factions of the Free Syrian Army (FSA), together with the armed group Jund Al-Aqsa, launched an offensive in the northern countryside of Hama and took control over Kharbit Massasneh, south of Maarkaba. These factions and armed groups then took control over multiple SAA positions and checkpoints, including Al-Mafqas, Al-Adayed, and Al-Khirba.<sup>3,4</sup>
- 3.5 On 29 September 2016, the SAA reported military operations in Hama Governorate, including the destruction of a number of tanks and armoured vehicles belonging to armed groups in the surroundings of Taybet Al-Imam, Maardes, and Morek, which neighbour Kharbit Massasneh.<sup>5</sup>
- 3.6 On 12 October 2016, over 30 air strikes were reported in areas outside of the Syrian Government's control in the northern countryside of Hama. Twenty airstrikes were additionally reported in Ltamenah, Taybet Al-Imam, Maardes, and Suran.<sup>6</sup>
- 3.7 On 30 December 2016, the SAA and the Armed Forces General Command started a comprehensive cessation of hostilities across all the territories of the Syrian Arab Republic following the advances achieved by the SAA on several fronts. Hayat Tahrir Al-Sham (HTS) (formerly Al-Nusra Front), the Islamic State in Iraq, and the Levant (ISIL), as well as the groups affiliated with them, were excluded from the agreement on the cessation of hostilities.<sup>7</sup>

3 <http://www.shaam.org/news/syria-news>.

4 <https://baladi-news.com/ar/articles/9498/>.

5 <https://syrianfreepress.wordpress.com/2016/09/29/4-war-days/>.

6 <https://baladi-news.com/ar/articles/11070/>.

7 <https://syrianfreepress.wordpress.com/2016/12/29/>.

- 3.8 On 11 January 2017, towns and villages in northern Hama—including Halfaya, Taybet Al-Imam, Maarkaba, and Morek—were targeted by several air strikes and artillery shelling.<sup>8</sup>
- 3.9 By the end of March 2017, the SAA regained control over 16 towns and villages in the northern countryside of Hama. Approximately 90 air strikes reportedly targeted several towns in the area at the time, including Ltamenah, Halfeya, Taybet Al-Imam, Suran, Khirbat Hajema, and Kharbit Massasneh.<sup>9</sup> Three of these air strikes were investigated by the FFM, which concluded that toxic chemicals were used as a weapon in Ltamenah on 24, 25, and 30 March 2017 (sarin, chlorine, and sarin, respectively).<sup>10,11</sup> The OPCW’s Investigation and Identification Team (IIT) later issued its conclusions on the identification of the perpetrators of these incidents.<sup>12</sup>
- 3.10 On 20 April 2017, the SAA and its allies reported taking control of Taybet Al-Imam, in the northern countryside of Hama, after confrontations with HTS and its allied armed factions. During the battle preceding this takeover, various weapons were used, including artillery and air strikes, to target the movements and supplies of armed groups in the region (Kharbit Massasneh, Al-Boida, Maarkaba, Lahaya, Morek, and Salba).<sup>13,14</sup>
- 3.11 On 22 April 2017, in an operation against HTS and its allies in the northern countryside of Hama led by the Tiger Forces and the 5th Assault Corps, the SAA advanced in the direction of Al-Boida and Kharbit Massasneh, two villages located at close proximity to the M5 Highway, which is considered a strategic supply line linking Damascus, Hama, and Aleppo. The town of Halfaya in the northwest of Hama, then under the control of the FSA factions, was the next goal of the SAA.<sup>15</sup> According to the same source, after recapturing Halfaya, the Tiger Forces and the 5th Assault Corps shifted their focus to Ltamenah. Figure 2 provides the positions of the SAA advancing in areas in northern Hama.

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8 <https://baladi-news.com/ar/articles/14469/>.

9 <https://aawsat.com/home/article/891396/>.

10 [https://www.opcw.org/sites/default/files/documents/2018/en/s-1636-2018\\_e\\_.pdf](https://www.opcw.org/sites/default/files/documents/2018/en/s-1636-2018_e_.pdf).

11 [https://www.opcw.org/sites/default/files/documents/2017/en/s-1548-2017\\_e\\_.pdf](https://www.opcw.org/sites/default/files/documents/2017/en/s-1548-2017_e_.pdf).

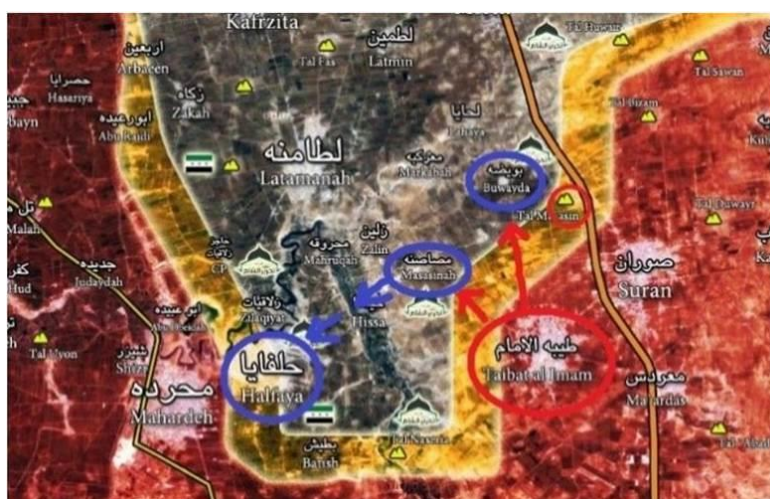
12 [https://www.opcw.org/sites/default/files/documents/2017/en/s-1548-2017\\_e\\_.pdf](https://www.opcw.org/sites/default/files/documents/2017/en/s-1548-2017_e_.pdf).

13 <http://alwaght.net/ar/News/94721/>.

14 <https://www.rozana.fm/ar/news/2017/04/22/>.

15 <https://southfront.org/tiger-forces-and-5th-assault-corps-rapidly-advancing-on-buwaidah-and-masasnah-in-northern-hama-maps/>.

**FIGURE 2: SITUATION IN NORTHERN HAMA ON 22 APRIL 2017<sup>16</sup>**



■ “Current” advance of the SAA   ■ Expected operations   ■ Confrontation lines

- 3.12 On 24 April 2017, the SAA and its allies took control of Kharbit Massasneh in Hama after confrontations with armed groups and the HTS. About 300 members of HTS were killed, and their vehicles and ammunition warehouses were destroyed. The SAA continued advancing in the northern countryside of Hama and also took control of Zour Al-Heesa, Zour Al-Tayba, and Halfaya villages, which are located to the west of Kharbit Massasneh, allowing the SAA to reach the outskirts of Khan Shaykhun.<sup>17, 18</sup>
- 3.13 In early May 2017, confrontations at the Massasneh frontlines intensified.<sup>19</sup> During the fourth and last round of negotiations in Astana on 4 May 2017, the Russian Federation, Türkiye, and the Islamic Republic of Iran announced their intentions to act as “guarantors of an agreement on Syrian de-escalation”. The stakeholders signed a memorandum on the creation of four de-escalation areas in the Syrian Arab Republic upon the conclusion of the Astana negotiations, with the objective of ending hostilities and improving the humanitarian situation. The Idlib and Hama Governorates were part of the largest de-escalation area. However, the Astana agreement reportedly failed and none of its objectives were met.<sup>20,21,22,23</sup>
- 3.14 On 12 June 2017, the SAA Forces positioned in Massasneh targeted the town of Ltamenah with artillery and mortar shelling, causing material damage.<sup>24</sup>

<sup>16</sup> [https://s2.cdnstatic.space/wp-content/uploads/2017/04/Screenshot\\_213.jpg](https://s2.cdnstatic.space/wp-content/uploads/2017/04/Screenshot_213.jpg).

<sup>17</sup> <https://www.alalam.ir/news/1958247/>.

<sup>18</sup> <http://alwaght.net/ar/News/95246/>.

<sup>19</sup> <https://www.shaam.org/news/bulletins/>.

<sup>20</sup> [https://www.dohainstitute.org/en/lists/ACRPS-PDFDocumentLibrary/Astana\\_Agreement\\_Guarantees\\_May\\_2017.pdf](https://www.dohainstitute.org/en/lists/ACRPS-PDFDocumentLibrary/Astana_Agreement_Guarantees_May_2017.pdf).

<sup>21</sup> [https://archive.mid.ru/en/foreign\\_policy/news/-/asset\\_publisher/cKNonkJE02Bw/content/id/2746041](https://archive.mid.ru/en/foreign_policy/news/-/asset_publisher/cKNonkJE02Bw/content/id/2746041).

<sup>22</sup> <https://www.kas.de/documents/252038/7938566/De-escalation+zones+in+Syria.pdf/>.

<sup>23</sup> <https://www.almodon.com/arabworld/2017/5/8/>.

<sup>24</sup> <https://stepagency-sy.net/2017/06/12/>.

- 3.15 On 7 July 2017, the SAA targeted several villages in the northern countryside of Hama, including Ltamenah and Kafr Zeita, from its positions in Massasneh, Halfaya, and Tell Maleh.<sup>25</sup> During the month of July 2017, confrontations continued between the SAA positioned in Massasneh and armed groups positioned in neighbouring villages.
- 3.16 In August and September 2017, artillery and mortar shelling continued from both sides at the frontlines, and Ltamenah was heavily targeted from the SAA positions in Halfaya and Massasneh.<sup>26,27,28,29,30</sup>

#### 4. PRE-DEPLOYMENT ACTIVITIES AND MISSION TIMELINE

- 4.1 Through its Note Verbale No. 103, dated 26 October 2017 and received by the Secretariat on 27 October 2017, the Syrian Arab Republic reported two incidents in Kharbit Massasneh to the Secretariat. The Secretariat conducted initial open-source research to gather additional information. No public information was available about the allegations.
- 4.2 Based on information received from the Syrian Arab Republic and in accordance with its mandate as referred to above, the FFM was tasked with collecting facts pertaining to the reported incidents.
- 4.3 Annex 3 reflects the mission timeline in detail, including mission activities and correspondence, from the date of receipt of the initial information via Note Verbale No. 103 from the Syrian Arab Republic in October 2017 up to the date of publication of this report.

#### 5. MISSION ACTIVITIES

##### Methodological considerations

- 5.1 The FFM followed the same methodological approach outlined in previous FFM reports,<sup>31</sup> adhering to the most stringent protocols throughout its activities.
- 5.2 The FFM collected information related to the incidents in Kharbit Massasneh, using its own equipment, ensuring the chain of custody and witness identity protection throughout its deployments in accordance with the OPCW's standard operating procedures (SOPs), work instructions, and guidelines.
- 5.3 Interviews were conducted by inspectors trained and proficient in interviewing techniques, following the procedures set out in OPCW work instructions. Prior to commencing the interviews, the process was explained to the interviewees, with emphasis on the fact that with the consent of the interviewee, the interviews would be recorded using audio, video, or both. After confirming that the process had been

<sup>25</sup> <https://baladi-news.com/ar/articles/20775/>.

<sup>26</sup> [https://twitter.com/AlnasarArmy/status/883023478152200195?t=W\\_TnvcXJ7ABA6jQOvL34Jw&s=03](https://twitter.com/AlnasarArmy/status/883023478152200195?t=W_TnvcXJ7ABA6jQOvL34Jw&s=03).

<sup>27</sup> [https://twitter.com/Halfaya\\_Center/status/891998937741185024?t=3FiwkEDixdGGrlaGqiBxCQ&s=03](https://twitter.com/Halfaya_Center/status/891998937741185024?t=3FiwkEDixdGGrlaGqiBxCQ&s=03)

<sup>28</sup> [https://twitter.com/Halfaya\\_Center/status/891575567300124672?t=HnD-FgikSGIK0tDMqglM7A&s=03](https://twitter.com/Halfaya_Center/status/891575567300124672?t=HnD-FgikSGIK0tDMqglM7A&s=03).

<sup>29</sup> <https://twitter.com/MoznAgency2021/status/912592321211969536?t=on9X9YektHLuXGGcBtMNRa&s=03>.

<sup>30</sup> [https://twitter.com/abofadi567dotc1/status/900958169962233856?t=K\\_N-O2B5uCDEuzMU0N-N\\_g&s=03](https://twitter.com/abofadi567dotc1/status/900958169962233856?t=K_N-O2B5uCDEuzMU0N-N_g&s=03).

<sup>31</sup> S/1255/2015, dated 10 March 2015.



understood, interviewees were requested to sign a consent form. The interview process used the free recall approach, with follow-up questions to elicit information of potential evidentiary value and to clarify aspects of the testimony. To guarantee the impartiality of the interview process, only the interviewees and FFM personnel were present in the room during the interviews.

- 5.4 The FFM examined the data obtained and collected, both individually and combined. The conclusions of this report are based on an analysis of all evidence taken as a whole: interviews, information provided by the Syrian Arab Republic through documents, digital material, and during meetings, as well as supporting material gathered during the interview process, and subsequent cross-reference and corroboration of information.

#### **Activities**

- 5.5 The activities of the FFM were conducted in accordance with its terms of reference, OPCW guidelines, SOPs, and work instructions as set out in Annex 1. The mission activities included:
- (a) exchanging notes verbales and internal memoranda with the Syrian Arab Republic;
  - (b) holding meetings with the Technical Committee;
  - (c) conducting and analysing interviews with medical staff, casualties, and witnesses of the reported incidents in Kharbit Massasneh; and
  - (d) reviewing and analysing photographs, videos, records, and files gathered by the FFM.
- 5.6 The FFM actively pursued further available information in possession of the Syrian Arab Republic, other OPCW State Parties, non-governmental organisations, and potential witnesses, in addition to conducting in-depth research into public information.
- 5.7 The Secretariat and the Syrian Arab Republic exchanged a number of notes and letters, including notes verbales throughout the course of the FFM's activities. A list of these items of correspondence can be found in Annex 3 to this report.
- 5.8 On 26 October 2017, the Syrian Arab Republic sent Note Verbale No. 103 to the Secretariat, reporting an alleged "mortar attack with poisonous gases on the Syrian Arab Army in the area of Kharbit Massasneh in Hama Governorate", which occurred on 7 July and 4 August 2017. The National Authority of the Syrian Arab Republic requested the OPCW to investigate both reported incidents.
- 5.9 On 10 November 2017, the Syrian Arab Republic provided additional information in Note Verbale No. 116, including documents on incidents in the area of Kharbit Massasneh.
- 5.10 On 4 December 2017, the Syrian Arab Republic provided additional information in Note Verbale No. 128 related to the incident that took place on 4 August 2017 in Kharbit Massasneh.

- 5.11 From 6 to 17 December 2017, the FFM deployed to the Syrian Arab Republic, held meetings with the Technical Committee and medical personnel, and conducted interviews with witnesses.
- 5.12 The FFM deployed to the Syrian Arab Republic again from 27 September to 4 October 2018, held meetings with the Technical Committee, and conducted interviews with witnesses.
- 5.13 From 2 to 15 December 2019, the FFM again deployed to the Syrian Arab Republic, held meetings with the Technical Committee, conducted interviews with witnesses, and visited the Hospital where casualties were reportedly treated.
- 5.14 On 21 May 2020, in its Note Verbale No. 38, the Syrian Arab Republic provided additional information, including copies of forensic reports and police reports, as requested by the FFM.
- 5.15 Through an exchange of notes verbales during the period from March to November 2021, the Syrian Arab Republic and the Secretariat agreed on deployment dates and FFM activities.
- 5.16 From 28 November to 10 December 2021, the FFM deployed to the Syrian Arab Republic, held meetings with the Technical Committee, and conducted interviews with witnesses.
- 5.17 On 22 February 2022, through Note Verbale No. NV/ODG-239/22, the Secretariat requested that the Syrian Arab Republic provide information regarding the security situation before and during the period of the reported incidents in Hama Governorate. On 25 March 2022, the Syrian Arab Republic provided a response in Note Verbale No. 22.

## **6. ACCESS TO SITES AND RELATED CONSIDERATIONS**

- 6.1 The safety and security of individuals involved in any FFM deployment are of the utmost importance.
- 6.2 The safe deployment of the FFM to the locations was deemed not possible for the following reasons:
  - (a) the continuous military activities in the area;
  - (b) the volatile situation in the surroundings of Kharbit Massasneh at the time of the incidents;
  - (c) the presence of remnants of war; and
  - (d) the fact that the team formed by the Technical Committee could not access the location of the incidents due to the aforementioned military activities.
- 6.3 The FFM was able to visit other locations in the Syrian Arab Republic during its deployments, including Damascus and Hama Governorate. In the latter, the FFM visited locations relevant to the reported incidents, including medical facilities.

## 7. FACTUAL FINDINGS

### Information provided by the Syrian Arab Republic

- 7.1 During the course of its investigation and deployments, the FFM received a number of items of correspondence and documents from the Syrian Arab Republic. The documents are listed in Annex 5 and include medical reports, military police reports, technical reports, video recordings, maps, and GPS coordinates.
- 7.2 The FFM held four meetings with relevant personnel in relation to the reported incidents in Kharbit Massasneh. These meetings were facilitated by the National Authority of the Syrian Arab Republic and the objective was to receive and clarify relevant information.
- 7.3 The reports (Annex 5) indicated that around midnight on 7 July 2017, the armed groups stationed in the town of Ltamenah targeted members of the SAA with hand grenades and 120-mm mortars filled with toxic gases. According to the reports, “numerous soldiers” of the Syrian Arab Army were exposed to said gases and were taken to the Hospital. The casualties presented with dyspnoea, redness in the eyes and face, muscle spasms, peripheral cyanosis, tachycardia, and in some cases loss of consciousness and frothing from the mouth. The incident occurred northwest of Kharbit Massasneh.
- 7.4 The reports (Annex 5) also stated that at 14:15 on 4 August 2017, armed groups launched mortars targeting members of the SAA in a location close to the village of Kharbit Massasneh. According to the reports, following the explosion of one of these projectiles, white smoke was released, causing “a number of soldiers” with the SAA to experience suffocation and loss of consciousness. The soldiers were then rescued and taken to the Hospital. The reports mention that during their medical examinations, casualties displayed the same symptoms observed in the casualties who had been brought to the Hospital on 8 July 2017.
- 7.5 On 9 August 2017, a “technical team” was tasked by the Technical Committee to travel to the city of Hama to closely examine the two incident locations. The technical team intended to visit the locations of both reported incidents to inspect the ammunition allegedly used by the armed groups. However, the visit was ultimately not possible due to the ongoing confrontations at the time.
- 7.6 On the same day, the technical team visited the Hospital, interviewed medical personnel related to the reported incidents, and collected the medical records of the casualties. The technical team was not able to meet the casualties, as they arrived in Hama five days after the incident on 4 August 2017 and approximately one month after the incident on 7 July 2017. During this visit, the treating physicians mentioned that a strange odour emanated from the clothing of the casualties, and some of them described it as similar to the odour of sulfur.
- 7.7 The technical team also received two military police reports from the Hama Police Department related to the investigation of both incidents (dated 20 July and 10 August 2017, respectively). The investigations were initiated following telegraph communications from the Hospital upon receiving casualties from the SAA. Both reports include the testimonies of the soldiers (recruits), who reportedly were affected

during the incidents. The reports conclude that the casualties suffered loss of consciousness and suffocation secondary to inhaling toxic gases.

- 7.8 The FFM received a total of seven medical records issued by the Hospital, three of which related to the reported incident on 7 July 2017, and four of which related to the reported incident of 4 August 2017. All casualties were personnel of the SAA. The FFM examined the medical records and collected a copy of them.
- 7.9 Additionally, the FFM received two internal medicine specialist reports in relation to both reported incidents. These reports list the symptoms exhibited by the casualties, the treatment they received, and conclude that the symptoms resulted from the inhalation of a toxic gas (an unknown substance).
- 7.10 Concerning the incident on 7 July 2017, the FFM was provided with an “Immediate Report” from the Chemical Prevention Branch of the SAA. A team from the Branch visited the area of the incident 10 hours after the incident on 7 July 2017, but did not access the site of the incident. The team attempted to obtain a reading with a handheld detector, but was not able to identify a chemical substance. The team’s report<sup>32</sup> stated the following:
- (a) “armed terrorist groups used toxic substances, chlorine gas, against troops present in the area of Kharbit Massasneh”;
  - (b) “the soldiers are affiliated to the Air Force Groups”;
  - (c) “no toxic substance was detected after approximately 10 hours; the substance disappeared due to high temperatures”;
  - (d) “symptoms displayed by casualties indicate the use of chlorine gas”; and
  - (e) “120 mm mortars were used (approximately 15 projectiles)”.
- 7.11 Additionally, the “Immediate Report” indicated that first aid was administered in the field to three soldiers displaying mild symptoms, and their condition improved. However, three other soldiers displayed moderate symptoms and were admitted to the Hospital, where they received the necessary treatment. Their condition was stable following the treatment.
- 7.12 According to the “Immediate Report” that was drafted following the incident on 7 July 2017, while the substance involved is reported to be chlorine, the National Authority of the Syrian Arab Republic explained that given the nature of this report, the conclusion might not be accurate.
- 7.13 In relation to the incident on 4 August 2017, in addition to medical and military police reports, the FFM received from the Syrian Arab Republic a CD containing three video recordings taken in the emergency room at the Hospital. The FFM provides a description of the video recordings in Annex 6 of this report.

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Document provided as attachment to Note Verbale No. 116.

- 7.14 In a “Brief Report” on both incidents, the Technical Committee mentioned that it was “unable to retrieve the clothing of the casualties in order to identify the toxic gases used”. In addition, the report mentioned that the symptoms indicate that “the toxic gases CN and CS” (phenacyl chloride and 2-chlorobenzalmalononitrile, respectively) were used by armed groups.
- 7.15 The Technical Committee had also provided the FFM with a report entitled “Comparative Study and Scientific Analysis between the Effect of the Use of Toxic Gases by Terrorist Groups during Incidents (Kharbit Massasneh, Qulayb al-Thawr, Blil, Al-Hamadaniyah, and Karm al-Tarrab) and the Toxic and Irritant Gases used for Riot Control”. The FFM noted that this Comparative Study did not refer to an incident on a specific date in Kharbit Massasneh.
- 7.16 Moreover, the Comparative Study consists of the general statements of a number of casualties who were reportedly present in the vicinity of the confrontation lines and witnessed the projectiles landing. According to the Comparative Study, the casualties reported that a “few masked armed men were seen throwing cylindrical containers. These containers caught fire upon impacting the ground, and dispersed gases in the surroundings, while spinning. These are the gases that affected us”.
- 7.17 Additionally, the Comparative Study referred to statements by several army personnel members who confirmed that at the confrontation lines, they were targeted with mortars that emitted a white cloud that remained for a relatively extended period of time. The soldiers believed it to be phosphorus munitions (i.e., munitions containing white phosphorus).
- 7.18 Based on the symptoms of the casualties in the reported incidents, the Comparative Study referred to “toxic irritant and tear gases” such as CN, PS, CS and CR,<sup>33</sup> as well as other substances that cause similar effects upon exposure.
- 7.19 The Syrian Arab Republic informed the Secretariat through Note Verbale No. 22, dated 25 March 2022, that at the time of the incidents, the main fighting factions and armed groups in the countryside of Hama—including in Kharbit Massasneh—were Jabhat Al-Nusra (Al-Nusra Front) and its affiliated factions Ahfed Al-Rasul Brigade, Ahrar Al-Sham, and Al-Farouq Brigade.
- 7.20 The FFM examined and reviewed the reports and documents provided by the Syrian Arab Republic and established the following:
- (a) No inspections, photographs, or video recordings of the munitions were included in the documents in connection to the reported incident on 7 July 2017.
  - (b) No environmental samples, including the clothing of the casualties, were collected.
  - (c) The reports of the Syrian Arab Republic concluded that the gas used was possibly a riot control agent. The Technical Committee emphasised that this conclusion was based solely on the symptoms experienced by the casualties.

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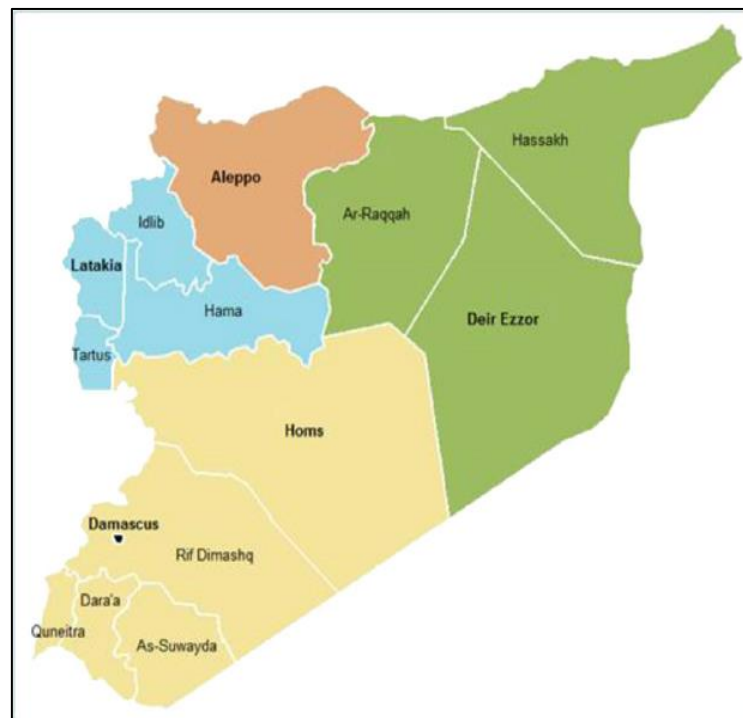
CN: phenacyl chloride; PS: chloropicrin; CS: 2-chlorobenzalmalononitrile; CR: dibenzoxazepine.

- (d) The FFM cannot link the statements reported in the Comparative Study regarding the types of devices or projectiles and the substance(s) involved to any of the reported incidents in Kharbit Massasneh, since the study covered several other reported allegations<sup>34</sup> that had occurred in 2016 and 2017.

#### Site of the Incidents: Kharbit Massasneh

- 7.21 Hama Governorate is situated in western-central Syria, bordering Idlib and Aleppo Governorates to the north, Homs Governorate to the south, Tartus and Latakia Governorates to the west, and Al-Raqqah Governorate to the east.
- 7.22 Kharbit Massasneh is a village in Hama Governorate, 20 kilometres to the northwest of the city of Hama. The village lies on the road connecting Tayyibat Al-Imam and Ltamenah.

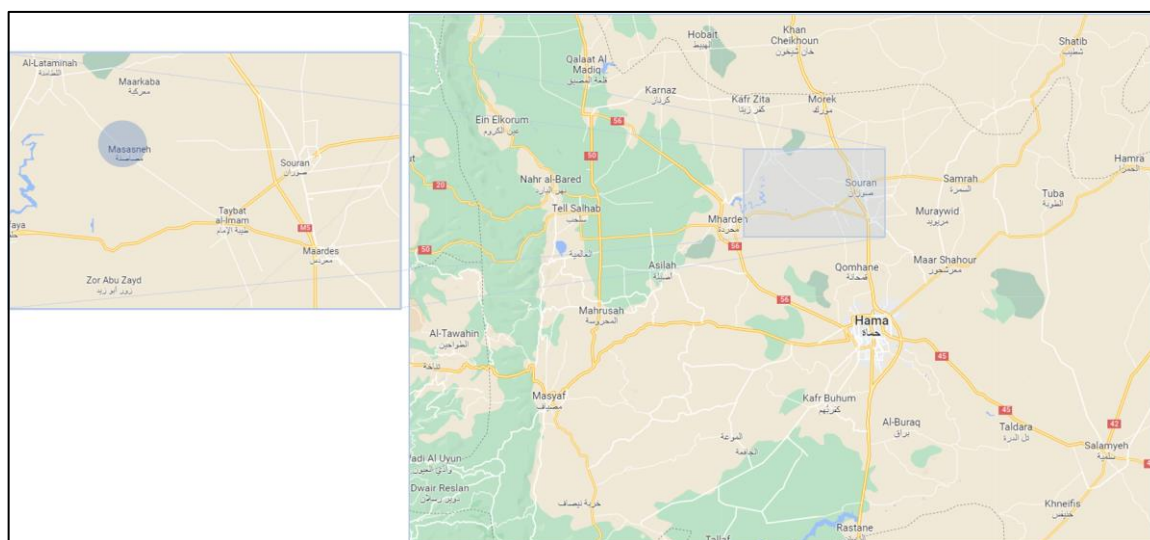
**FIGURE 3: LOCATION OF HAMA GOVERNORATE**



<sup>34</sup>

The FFM investigated the incidents in Al-Hamadaniyah on 30 October 2016 and Karm Al-Tarrab on 13 November 2016 and issued its report (S/1642/2018) on 6 July 2018. The report concludes that “[...] the FFM cannot confidently determine whether or not a specific chemical was used as a weapon in the incidents that took place in the neighbourhood of Al-Hamadaniyah and in the area of Karm al-Tarrab”.

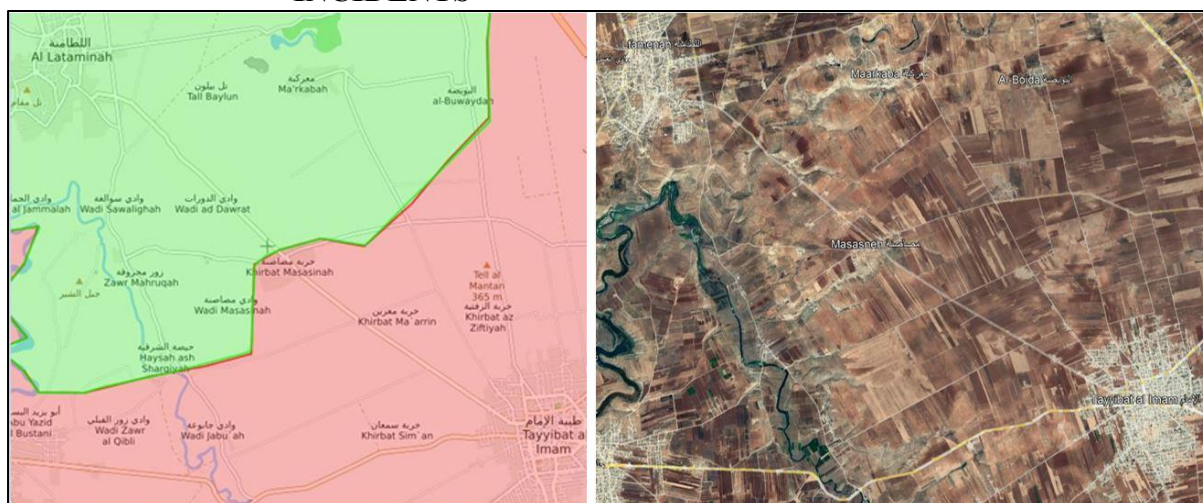
**FIGURE 4: LOCATION OF KHARBIT MASSASNEH**



7.23 Kharbit Massasneh is located two kilometres to the east of the Orontes river. It is surrounded by farmlands, olive trees, and dry river beds, including the valley of Massasneh (known as Wadi Massasneh).

7.24 At the time of the reported incidents, the village of Kharbit Massasneh was under the control of the SAA and confrontation lines were in close proximity to it. The SAA gained control of the village and nearby areas in a military operation that took place between 25 and 27 April 2017, moving the confrontation line closer to the north of the village. Figure 5 shows a map of the confrontation line at the time of the incidents.

**FIGURE 5: CONFRONTATION LINES AT THE TIME OF THE INCIDENTS<sup>35</sup>**



7.25 Figure 6 presents the topography of Kharbit Massasneh and its surroundings. The landscape consists of a plain with an average altitude of 300 metres in the vicinity of

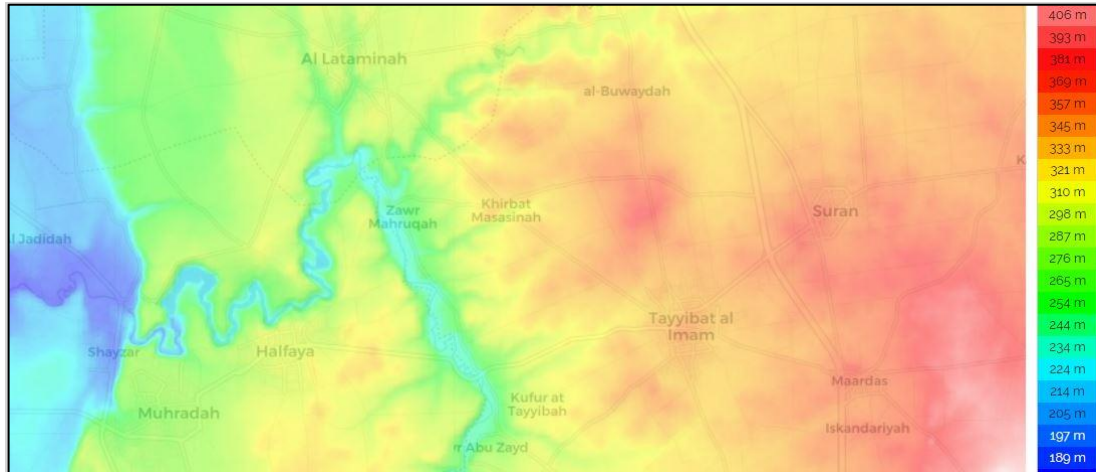
35

<https://syria.liveuamap.com/en/time/07.07.2017>; <https://syria.liveuamap.com/en/time/04.08.2017>.



the village. The plain's altitude gradually decreases towards the west and the Orontes river. Several dry river beds are present in the area.

**FIGURE 6: TOPOGRAPHY OF KHARBIT MASSASNEH AND SURROUNDING VILLAGES<sup>36</sup>**



**FIGURE 7: LOCATIONS OF THE INCIDENTS OF 7 JULY AND 4 AUGUST 2017**



7.26 The incident of 7 July 2017 is reported to have occurred in an agricultural area approximately 650 metres to the northwest of the main crossroad in Kharbit Massasneh, on the road to Ltamenah.

<sup>36</sup> <https://en-gb.topographic-map.com/maps/lplu/Syria/>.



- 7.27 The 4 August 2017 incident is reported to have taken place approximately 650 metres to the east of the main crossroad in Kharbit Massasneh, in an agricultural area next to the road to Suran.
- 7.28 The FFM reviewed the meteorological conditions on the dates of both reported incidents in Kharbit Massasneh based on the available public sources. The FFM is aware that meteorological data may vary slightly from one public source to another. Most sources refer to the main city in a given Governorate—the city of Hama in this case. Therefore, the data is more indicative of a general forecast in the area than a precise account of the weather conditions at the time of the incidents.

**TABLE 1: METEOROLOGICAL CONDITIONS IN HAMA ON 7 JULY 2017**<sup>37</sup>

Friday, 7 July 2017								
Max: 37°C Min: 22°C Sunrise: 05:26, Sunset: 07:51 PM								
Moonrise: 06:22 PM Moonset: 04:02								
Time	Temperature	Wind (Km/h)	Gust (km/h)	Rain	Humidity %	Cloud %	Pressure (mb)	Visibility
00:00	22	14 from S	24	0.0 mm	78	2	1005	Excellent
03:00	22	12 from SE	17	0.0 mm	83	0	1005	Excellent
06:00	30	18 from S	21	0.0 mm	83	0	1005	Excellent
09:00	35	21 from S	24	0.0 mm	65	0	1004	Excellent
12:00	36	25 from S	29	0.0 mm	36	0	1003	Excellent
15:00	32	25 from S	29	0.0 mm	34	0	1003	Excellent
18:00	26	17 from S	27	0.0 mm	42	0	1004	Excellent
21:00	25	12 from S	18	0.0 mm	65	0	1005	Excellent

**TABLE 2: METEOROLOGICAL CONDITIONS IN HAMA ON 4 AUGUST 2017**<sup>38</sup>

Friday, 4 August 2017								
Max: 35°C Min: 23°C Sunrise: 05:45, Sunset: 07:34 PM								
Moonrise: 05:06 PM Moonset: 02:43								
Time	Temperature	Wind (Km/h)	Gust (km/h)	Rain	Humidity %	Cloud %	Pressure (mb)	Visibility
00:00	23	10 from S	12	0.0 mm	74	0	1007	Excellent
03:00	23	8 from SE	9	0.0 mm	78	0	1007	Excellent
06:00	28	13 from S	15	0.0 mm	78	0	1008	Excellent
09:00	33	15 from S	18	0.0 mm	66	3	1007	Excellent
12:00	35	22 from S	26	0.0 mm	49	2	1006	Excellent
15:00	32	26 from S	29	0.0 mm	49	0	1006	Excellent
18:00	25	17 from S	22	0.0 mm	49	0	1007	Excellent
21:00	24	11 from S	13	0.0 mm	66	0	1007	Excellent

<sup>37</sup> [worldweatheronline.com/hama-weather-history/hamah/sy.aspx](http://worldweatheronline.com/hama-weather-history/hamah/sy.aspx).

<sup>38</sup> [worldweatheronline.com/hama-weather-history/hamah/sy.aspx](http://worldweatheronline.com/hama-weather-history/hamah/sy.aspx).

## Collected information

### Interviews and meetings

- 7.29 In fulfilment of its mandate to examine all available information relating to the alleged use of toxic chemicals as a weapon, the FFM conducted in-person interviews with consenting witnesses.
- 7.30 The identity of all witnesses was verified before signing an interview consent form. To guarantee the independence and impartiality of the interview process, only the witness and relevant FFM team members were present in the room during interviews.
- 7.31 Between 6 December 2017 and 10 December 2021, the FFM conducted a total of 19 interviews with 18 individuals. A breakdown of the interviewees' profiles is provided in Table 3. Of the 18 interviewees, four were medical staff, seven were witnesses, and seven were casualties. One of the interviewees was interviewed twice.
- 7.32 In December 2019, the incidents reported in Kharbit Massasneh were discussed at four technical meetings with medical personnel and forensic specialists facilitated by the Technical Committee. During these meetings, the FFM clarified information received previously, and obtained additional information from relevant medical personnel and forensic specialists.

**TABLE 3: PROFILES OF INTERVIEWEES**

	Interviewees	Primary Casualties	Female	Male
Medical support staff	1	0	0	18
Treating physician	3	0		
Witness	7	0		
Casualty	7	7		
<b>Total</b>	18	7	0	18

- 7.33 The following is a composite summary of the statements given by witnesses interviewed by the FFM.

### Incident in Kharbit Massasneh on 7 July 2017

- 7.34 On 7 July 2017, an incident reportedly involving a mortar attack with toxic gas took place during an ongoing battle between the SAA and armed groups. The SAA forces were barricaded in the north of Kharbit Massasneh, with approximately three members at each position and a 100-metre distance between each position. The distance between the SAA and the armed groups was between 200 and 300 metres. Various weapons were used against the SAA by the armed groups from the northern part of the village.

- 7.35 According to witness testimonies, the time of the reported incident varied between midnight on 7 July 2017 and early morning on 8 July 2017. Several witnesses stated that it was dark, while others mentioned that there was light. One witness said the moonlight on that night was sufficient to have a visibility of five metres ahead.
- 7.36 During the fight, three soldiers retreated after a projectile landed in their vicinity and released smoke. They ran for approximately 60 metres before other soldiers noticed that they had collapsed. The second group of soldiers intervened, withdrew the three affected soldiers to a safer location, and washed their faces with water.
- 7.37 Another group of soldiers remained in their barricades and were affected by the smoke; they lost consciousness and were transported to the Hospital for medical treatment.
- 7.38 According to witness statements, one of the projectiles did not explode and generated an unusual sound that they could not describe further due to the intense military activities. The witnesses added that this projectile released a smoke that was initially white, then turned yellowish. They stated that the odour they perceived was different from the odour of gun powder and was described as a foul and pungent odour. A number of witnesses stated that the odour disappeared immediately, while others said it dissipated slowly. One of the witnesses did not exclude the possibility that more than one “different” projectile was shot towards their location.
- 7.39 According to witness accounts, between 01:00 and 02:00 on 8 July 2017, three SAA soldiers arrived at the Hospital by ambulance suffering from respiratory distress.
- 7.40 The medical staff reported an unpleasant odour emanating from the casualties, causing personnel to feel a mild sore throat. The medical staff did not provide any additional description of this odour and explained that they were wearing surgical masks during the treatment.
- 7.41 According to witnesses, their main symptoms were dry throat, shortness of breath, lacrimation, excessive salivation, rhinorrhoea, nausea, and vomiting. One witness reported a cough.
- 7.42 Subsequent to the incident and the examination of the casualties, the forensic specialist at the Hospital issued a military forensic report that was communicated to the relevant military authority of the Syrian Arab Republic. The report stated that the casualties were exposed to an “unknown gas”. One witness mentioned that this conclusion was reached based on the signs and symptoms that casualties exhibited.
- 7.43 Several witnesses reported that various weapons were used against them, including 14.5-mm machine guns, 23-mm cannons, grenade launchers, and mortars of different calibres. Some of these munitions reportedly released a smoke that produced the described effects across a radius of approximately 50 metres. One witness mentioned that the SAA was reciprocating with similar weapons.
- 7.44 One witness—a member of the Technical Team—recalled that 10 hours after the incident on 8 July 2017, the team visited the general area with a handheld chemical detector to inspect the area of the incident. According to the witness, no nerve agents, toxic substances, or asphyxiating agents were detected due to the high summer temperatures. Based on the signs and symptoms of the casualties, the witness stated that

the “expected substance” used in the incident was chlorine and that there had been information circulating about armed groups being in possession of chlorine.

Incident in Kharbit Massasneh on 4 August 2017

- 7.45 According to witness statements, on 4 August 2017, the ongoing confrontation was between the SAA troops that were positioned at the barricades to the north of Kharbit Massasneh and armed groups positioned in south of Ltamenah.
- 7.46 According to the accounts of witnesses who were at the barricades, the SAA soldiers were continuously monitoring the area from their “observation point”, using both day and night vision binoculars, and they could see the movement of armed groups at the location where they were positioned in Ltamenah. One witness stated that armed groups were positioned at an olive press situated near Ltamenah, on the side of the Massasneh – Ltamenah road, a location used to fire at the SAA troops. The witnesses also mentioned that the soldiers were targeted with various types of munitions, including machine guns and mortars.
- 7.47 According to one witness, around 14:00 on that same day, mortar shells fell into the courtyard of a poultry farm in the vicinity of the SAA barricades. A number of mortars reportedly produced a sound lower than usual and released a smoke that was described by witnesses as “white as snow”.
- 7.48 At that moment, four SAA soldiers were present at the same location; one of them stated that they took cover in buildings that were approximately 10 metres away from their barricades in a location overlooking Ltamenah. Another soldier said that they sought shelter in buildings near a water reservoir. Another two soldiers stated that they took cover in their foxholes behind the barricades.
- 7.49 Based on witness descriptions, the smoke had a foul odour, and a few minutes after its dispersion, several SAA soldiers developed symptoms including a cough, lacrimation, altered consciousness, irritation of the airway, shortness of breath, nausea, and vomiting. One witness mentioned that the wind was blowing in their direction, which caused lacrimation and irritation in the eyes. While several witnesses were not able to clarify the source of the smoke, one witness stated that the projectile that landed approximately at a distance of 10 metres from their position released the smoke.
- 7.50 The affected soldiers were rescued by their colleagues and transported by military vehicle to the Hospital. They arrived between 16:30 and 17:00. Several casualties who were interviewed mentioned that they “woke up at the hospital, hours later”.
- 7.51 Witnesses also reported that a strange odour emanated from the clothes of the casualties, causing the medical staff to suffer from a mild sore throat.
- 7.52 After initial treatment and observation in the intensive care unit (ICU), the condition of the casualties improved. All witnesses stated that they stayed at the hospital for two to three days before being discharged.
- 7.53 After the incident, the forensic specialist at the Hospital issued a military forensic report that was communicated to the relevant military authority of the Syrian Arab Republic. The report stated that the casualties were exposed to an unknown gas. As stated by the

witnesses, the conclusion of this report was based on the signs and symptoms that the casualties exhibited.

## **Epidemiology and toxicology**

### The symptoms experienced by casualties

- 7.54 Based on interviews, casualties from both incidents stated that the onset of symptoms varied from instantaneous to within few minutes from the moment of exposure. Additional signs were described by the treating medical staff at the Hospital and were reported in the medical records of the casualties. Table 4 lists the symptoms described by the casualties and the additional clinical signs that were observed by the medical personnel at the Hospital for both incidents.
- 7.55 None of the casualties who experienced both incidents displayed any trauma injuries. Their symptoms included dyspnoea, loss of consciousness, a burning sensation in the eyes, conjunctival injection, and lacrimation. Several casualties reported muscle spasms. Other signs were reported by the treating physicians and included a wheezing sound on auscultation of the chest, as well as central and peripheral cyanosis.

**TABLE 4: DESCRIBED SYMPTOMS AND CLINICAL SIGNS**

<b>Symptoms reported by casualties</b>	<b>7 July 2017</b>	<b>4 August 2017</b>
Dyspnoea	3	4
Altered state of consciousness (described as impairment or loss of consciousness, hallucination, waking up in the hospital, and/or difficulty staying awake)	3	4
Cough	1	
Excessive salivation (described as foaming at the mouth)		4
Lacrimation (excessive tear production) and burning sensation in the eyes	3	
Burning sensation in the nasal and oral mucosa		4
Hypoesthesia in the extremities (described as limb numbness)		4
Palpitations	3	
Vomiting	3	
Muscle spasm	3	
<b>Additional clinical signs reported by medical personnel</b>		
Dermal irritation (described as pimples and/or red patches)	3	
Conjunctival injection (red eyes)	3	
Wheezing sound on auscultation of the chest	3	4
State of agitation	3	
Central and peripheral cyanosis (described as lip and non-specific limb cyanosis)	3	
Limp limbs	3	

Casualty treatment and diagnosis

- 7.56 Medical intervention was focused on the treatment of symptoms reported by the casualties and the clinical signs observed by the treating medical personnel. It was not specific to the exposure to any particular class of substances.
- 7.57 As mentioned in the medical records and reported by the treating physicians, medical intervention consisted of initial treatment involving first aid procedures and the administration of oxygen, nebulized beta-agonists, IV fluids, and corticosteroids.
- 7.58 While the medical records of the casualties reported washing the casualties with water during the initial treatment, the medical personnel who were interviewed explained that their faces and bodies were wiped with water using bandages. Additionally, regarding the reported incident of 4 August 2017, one witness mentioned that casualties at the Hospital had their faces thoroughly washed by their colleagues in an attempt to wake them up, as they displayed altered states of consciousness.
- 7.59 According to the testimony of another treating physician who was involved in the treatment of casualties of both incidents, the patients were not disrobed and wore the same clothes throughout the entirety of their treatment.
- 7.60 After the initial treatment and as mentioned in the records, the medical personnel reported a slight improvement in the condition of the casualties who were admitted to the ICU for observation and additional treatment. Chest X-rays and laboratory results from blood tests were reported to be normal.
- 7.61 The medical records showed that the patients were in good general condition and that they were discharged from the ICU on 8 July 2017 at 09:00. The differential diagnosis in the medical records read “inhalation of a (unknown) toxic gas”. No further indication of the nature of this substance is provided in the records.
- 7.62 Regarding the incident on 7 July 2017, the FFM sought clarification from the treating physicians during meetings. One physician mentioned that the number of casualties admitted to the emergency room of the Hospital varied between four and ten.
- 7.63 As part of initial treatment, the treating physician said that four of the patients were disrobed, while the others, who presented mild symptoms, were not. The physician added that there was a liquid substance on the clothes of the casualties, but could not identify it or provide further description. In addition to the aforementioned signs and symptoms, the physician reported that casualties from the incident on 7 July 2017 developed red spots on their faces that lasted from 24 hours up to four days. The physician also noted that the casualties had a white-pinkish froth coming out of the mouth, but with no evidence of blood in it.
- 7.64 The FFM noted the discrepancies between the clarifications given by the physician and the information reported and recorded. These discrepancies are related to, inter alia: the medical records refer only to three casualties on 7 July 2017; the red patches on the skin of the casualties lasted reportedly between 24 hours and four days, which could not be corroborated due to the discharge date of the casualties on 8 July 2017; and, the medical records for the three casualties from the alleged incident on 7 July 2017 do not mention foaming from the mouth among the medical signs.

Medical documentation, admission, discharge, and follow-up

- 7.65 The FFM obtained still photographs of the medical records of the casualties, as well as logs from the Hospital related to both incidents. In addition, during its deployments, the FFM sought clarifications about these medical records by interviewing the treating physicians and the forensic doctor who issued the forensic reports for both incidents to the military authorities.

*Incident of 7 July 2017*

- 7.66 In the documents related to the incident, the FFM noted two different incident dates: some documents stated that the incident occurred on 7 July 2017, while others stated that it took place on 8 July of the same year. The National Authority of the Syrian Arab Republic clarified that the reported incident occurred around midnight, which caused the confusion observed in the documents, and requested that the date of 7 July 2017 be designated as the date of the incident.
- 7.67 According to the Hospital's logs, the three casualties (referred to as military personnel) were admitted to the Hospital at 01:25. The Hospital's logs mention both dates: 7 and 8 July 2017. The diagnosis for these three casualties was gas inhalation.
- 7.68 Based on the medical records and the medical staff's recollection of the events, the three casualties arrived at the Hospital between 01:15 and 01:45.
- 7.69 The medical records of the three casualties show that they were discharged from the ICU and moved to general care on 8 July 2017 at 09:00, following improvement in their condition. Additionally, the treating physician stated that two casualties were discharged from the ICU and moved to general care at 09:00, while the third casualty stayed longer in the ICU and was moved to general care later that same day at 18:00.
- 7.70 While all three casualties stated during their interviews that they stayed at the Hospital for three days and were discharged on the fourth day after their admission to the Hospital, the medical records for all of them show that they were discharged from the Hospital on 8 July 2017, after their medical condition had improved. The exact discharge time is not clearly specified in the records.
- 7.71 None of the medical personnel interviewed reported that the casualties returned for any follow-up treatment at the Hospital after being discharged. The medical personnel added that since the casualties are military personnel, they go back to their military barracks where they are managed by their supervisors. All casualties stated that they had a two-week recovery period following the incident, which was also reported in the military police report.

*Incident of 4 August 2017*

- 7.72 According to the Hospital's logs for emergency admission, four casualties were admitted to the Hospital at 18:00 on 4 August 2017. According to these logs, their diagnosis was "gas inhalation".

- 7.73 Following their admission on 4 August 2017 and initial treatment, the casualties were admitted to the ICU for observation and treatment. All patients responded to the administered treatment. The medical records show that they were all discharged from the ICU in the afternoon of 5 August 2017. In his interview, the treating physician stated that they were all discharged from the ICU at 09:00 on 5 August 2017 after their condition had improved.
- 7.74 In addition, casualties stated that they stayed at the hospital for two or three days and were discharged on the third or fourth day. The discharge date for the four casualties of the incident on 4 August 2017 is indicated at the bottom of the temporary treatment form, and reads “discharge with improvement”, on 7 August 2017.
- 7.75 The treating physicians did not report any casualties returning for further follow-up treatment. However, one casualty said that they returned for follow-up treatment and reported being in a good condition afterwards.
- 7.76 The FFM noted the absence of any details regarding the treatment administered or continuous monitoring for all the casualties in the medical records from the date they were discharged from the ICU (5 August 2017) and the date they were discharged from the Hospital (7 August 2017).
- 7.77 During its deployments to the Syrian Arab Republic, the FFM received a CD containing three video recordings taken in the emergency room of the Hospital. The metadata indicates that 4 August 2017—the date of the reported incident—was the last date on which these video recordings were modified. In Annex 6, the FFM provides a description of the content of each video recording and the relevant information extracted.
- 7.78 One video consists of an interview with medical staff explaining the casualties’ symptoms upon arrival at the Hospital. There was no indication of the amount of time that passed between the arrival of the casualties at the Hospital and the time of the interview. In the video, the three patients appear to be in their military uniforms. It is not clear from the video whether these patients have been washed or wiped with water.
- 7.79 Each video recording shows a single adult male on a hospital bed receiving oxygen, a nebulizer, and IV fluids. Two casualties are awake with purposeful movement, and a third does not appear to be awake, but his ventilation rate and depth appear normal.

#### Epidemiological and toxicological assessment

- 7.80 The signs and symptoms described constitute a general physiological response to a variety of factors that can be caused by a wide range of substances or diseases.
- 7.81 The exposure to any class of chemical substances produces a predictable and known set of signs and symptoms, which is referred to as toxidrome. Some variations from one patient to another may be observed depending on the amount, route, and duration of exposure, in addition to an individual’s premorbid condition. However, patients would generally display the symptoms of toxicity associated with a chemical substance upon exposure.



- 7.82 The complaints and symptoms of the casualties described during interviews and the clinical signs reported in the medical records are not consistent with any single well-defined toxidrome, and therefore cannot be linked to a specific class of chemicals.
- 7.83 The FFM noted discrepancies between the medical records and the accounts collected at interviews and meetings; this includes the names of physicians who were on shift and were involved in the treatment of the casualties, as well as the discharge dates and times.
- 7.84 In addition, the FFM noticed that one of the individuals who was interviewed in their capacity as a treating physician in relation to the incident on 7 July 2017 does not appear on the shift logs corresponding to the date and time of either incident. The name and signature of this physician appeared in the medical records provided for the soldiers reportedly affected on 4 August 2017.
- 7.85 When asked by the FFM, witnesses clarified the reason behind the appearance of the names and signatures of several physicians in medical records, despite being absent from the shift log on the dates of both reported incidents. For instance, the forensic medical specialist is responsible for issuing forensic reports for all of Hama Governorate and their name is not necessarily mentioned systematically in all documentation. In addition, understaffed hospitals would call physicians who are not on shift to assist the medical team as needed. In this case, their names will not necessarily be listed in the shift logs. Moreover, these physicians could be heads of departments, responsible for reviewing medical reports and validating them or residential treating physicians residing at the Hospital.

## **8. CONCLUSIONS**

- 8.1 The conclusions drawn by the FFM are the result of the combination, consistency, and corroboration of evidence gathered as a whole throughout the mission; they are not based on isolated evidentiary elements. This report sets out the findings of the work of the FFM conducted over the period from October 2017 to the date of issue of this report on the incidents in Kharbit Massasneh, Syrian Arab Republic, on 7 July 2017 and 4 August 2017.
- 8.2 On 26 October 2017, the Syrian Arab Republic informed the Secretariat of two incidents that occurred in Kharbit Massasneh, in the Governorate of Hama in the Syrian Arab Republic, on 7 July 2017 and 4 August 2017. The State Party reported a “mortar attack with poisonous gas” on positions of the Syrian Arab Army in the specified area, resulting in several casualties among soldiers who were subsequently transported to the Hospital. As a result, the National Authority of the Syrian Arab Republic requested the Secretariat to investigate both incidents.
- 8.3 Regarding the incidents in Kharbit Massasneh on 7 July and 4 August 2017, the conclusion of the FFM concerning the use of toxic chemicals as a weapon is based on information provided by the Syrian Arab Republic through notes verbales, at meetings with the Technical Committee, as well as the analysis of interviews, supporting material, Hospital records, and subsequent cross-reference and corroboration of all evidence.

- 8.4 The FFM examined and analysed all the information received and gathered and established the following:
- (a) Through medical records, the team verified the admission of a total of seven casualties to the Hospital on 8 July and 4 August 2017.
  - (b) The complaints and symptoms of the casualties described during interviews, as well as the clinical signs reported in the medical records, are not consistent with any single well-defined toxidrome, and there were signs of irritation that cannot be linked to a specific class of chemicals.
  - (c) A team from the SAA Chemical Prevention Branch visited the general area 10 hours after the incident on 7 July 2017, but did not access the site of the incident. The team attempted to obtain a reading with a handheld detector but was not able to identify a chemical substance.
  - (d) The photographs and video recordings taken at the Hospital, which were made available for investigation into the incident that took place on 4 August 2017, do not provide sufficient indicators of the exposure that was reported.
- 8.5 During the investigation, the FFM actively pursued further available information in possession of the Syrian Arab Republic. The team also requested and obtained clarifications and explanations for a number of inconsistencies observed in the course of its activities. Nevertheless, despite the clarifications offered by the State Party, the FFM still faced challenges in collecting sufficient information for its investigation of reported incidents, namely:
- (a) The location of the incidents was in the vicinity of the confrontation line and was assessed as unsafe for the FFM to be deployed there in the aftermath of the reported incidents.
  - (b) No photographs or video recordings of the locations of the reported incidents, which were taken shortly after the occurrence of the incidents, were made available to the FFM.
  - (c) Munitions and the remnants thereof were not retrieved or collected as objects of interest for the investigation into the allegations. The descriptions of the munitions provided by the witnesses do not offer an accurate indication of their type or calibre.
  - (d) No photographs or video recordings of munitions were available in the documents provided by the Syrian Arab Republic.
  - (e) Environmental samples were not collected from either of the reported incident locations.
  - (f) Blood samples were taken by medical staff from the casualties at the Hospital for medical purposes. No targeted analysis was conducted of the blood samples taken from casualties of the reported incidents, and these samples were not made available to the FFM.

- (g) A liquid substance was reportedly observed on the clothes of several casualties. There was no precise description of the substance, no samples were taken from the clothing of the casualties, and the clothes were not retrieved.
- 8.6 Based on the analysis of the information and documents provided by medical personnel, the lack of an accurate description of the “unknown gas” reportedly involved in the incidents, and the fact that no samples were available from the clothes of the casualties, the FFM cannot confidently provide a toxicological assessment of the reported exposure.
- 8.7 The information obtained and analysed in line with the FFM’s mandate to gather facts about incidents of the alleged use of toxic chemicals as a weapon in the Syrian Arab Republic did not provide reasonable grounds for the FFM to determine that toxic chemicals were used as a weapon in the reported incidents that occurred in Kharbit Massasneh, in Hama Governorate in the Syrian Arab Republic, on 7 July 2017 and 4 August 2017.

Annexes (English Only):

- Annex 1: Reference documentation
- Annex 2: Open sources
- Annex 3: Mission timelines
- Annex 4: Information collected by the FFM
- Annex 5: Documents received from the Syrian Arab Republic
- Annex 6: Description of the video recordings received from the Syrian Arab Republic

**Annex 1****REFERENCE DOCUMENTATION**

	<b>Document Reference<sup>39</sup></b>	<b>Full title of Document</b>
1	QDOC/INS/SOP/IAU01	Standard Operating Procedure for Evidence Collection, Documentation, Chain-of-Custody and Preservation during an Investigation of Alleged Use of Chemical Weapons
2	QDOC/INS/WI/IAU05	Work Instruction for Conducting Interviews during an Investigation of Alleged Use
3	QDOC/INS/SOP/IAU02	Standard Operating Procedure Investigation of Alleged Use (IAU) Operations
4	QDOC/INS/SOP/GG011	Standard Operating Procedure for Managing Inspection Laptops and other Confidentiality Support Materials

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<sup>39</sup>

The OPCW QDOCs referred to in this report are the most recent versions.

**Annex 2**

**OPEN SOURCES**

No open-source data was available in relation to the reported allegations in Kharbit Massasneh on 7 July 2017 and 4 August 2017.

**Annex 3****MISSION TIMELINE**

Date	Activities
26 October 2017	The Secretariat received a note verbale from the Syrian Arab Republic with information on an alleged use of toxic chemicals as a weapon.
10 November 2017	The Secretariat received a note verbale from the Syrian Arab Republic with additional information.
17 November 2017	The Secretariat sent a note verbale and informed the Syrian Arab Republic of its intention to deploy the FFM.
22 November 2017	The Secretariat received a note verbale from the Syrian Arab Republic.
4 December 2017	The Secretariat received a note verbale from the Syrian Arab Republic with additional information.
6 – 17 December 2017	The FFM conducted seven in-person interviews, took photographs, and collected data from the National Hospital of Hama.
4 September 2018	The Secretariat sent a note verbale to the Syrian Arab Republic.
27 September – 4 October 2018	The FFM conducted three in-person interviews, collected evidence, and held meetings with representatives of the National Authority of Syrian Arab Republic.
20 November 2019	The Secretariat sent a note verbale to the Syrian Arab Republic.
2 – 15 December 2019	The FFM conducted four in-person interviews, one field visit, technical meetings, and collected information.
21 May 2020	The Secretariat received a note verbale from the Syrian Arab Republic with additional information regarding the incident.
25 March 2021	The Secretariat sent a note verbale to the Syrian Arab Republic.
1 April 2021	The Secretariat received a note verbale from the Syrian Arab Republic.
1 April 2021	The Secretariat sent a note verbale to the Syrian Arab Republic.
6 April 2021	The Secretariat received a note verbale from the Syrian Arab Republic.

Date	Activities
9 November 2021	The Secretariat sent a note verbale to the Syrian Arab Republic.
15 November 2021	The Secretariat received a note verbale from the Syrian Arab Republic.
28 November – 10 December 2021	The FFM conducted five in-person interviews, held technical meetings, and collected information.
22 February 2022	The Secretariat sent a note verbale to the Syrian Arab Republic requesting additional information.
25 March 2022	The Secretariat received a note verbale from the Syrian Arab Republic.

## Annex 4

**INFORMATION COLLECTED BY THE FFM**

The tables below comprise the list of physical evidence collected from various sources by the FFM. The evidence has been categorised by evidence stored in electronic media storage devices, and hard copies. Electronic files include audio-visual captions, still images, and documents and records.

**TABLE A4.01: ELECTRONIC DATA COLLECTED BY THE FACT-FINDING MISSION**

Entry Number	Assigned Code		
1	10019		
File names			
Dscf.5067.jpg	Dscf.5107.jpg	Dscf.5147.jpg	Dscf.5187.jpg
Dscf.5068.jpg	Dscf.5108.jpg	Dscf.5148.jpg	Dscf.5188.jpg
Dscf.5069.jpg	Dscf.5109.jpg	Dscf.5149.jpg	Dscf.5189.jpg
Dscf.5070.jpg	Dscf.5110.jpg	Dscf.5150.jpg	Dscf.5190.jpg
Dscf.5071.jpg	Dscf.5111.jpg	Dscf.5151.jpg	Dscf.5191.jpg
Dscf.5072.jpg	Dscf.5112.jpg	Dscf.5152.jpg	Dscf.5192.jpg
Dscf.5073.jpg	Dscf.5113.jpg	Dscf.5153.jpg	Dscf.5193.jpg
Dscf.5074.jpg	Dscf.5114.jpg	Dscf.5154.jpg	Dscf.5194.jpg
Dscf.5075.jpg	Dscf.5115.jpg	Dscf.5155.jpg	Dscf.5195.jpg
Dscf.5076.jpg	Dscf.5116.jpg	Dscf.5156.jpg	Dscf.5196.jpg
Dscf.5077.jpg	Dscf.5117.jpg	Dscf.5157.jpg	Dscf.5197.jpg
Dscf.5078.jpg	Dscf.5118.jpg	Dscf.5158.jpg	Dscf.5198.jpg
Dscf.5079.jpg	Dscf.5119.jpg	Dscf.5159.jpg	Dscf.5199.jpg
Dscf.5080.jpg	Dscf.5120.jpg	Dscf.5160.jpg	Dscf.5200.jpg
Dscf.5081.jpg	Dscf.5121.jpg	Dscf.5161.jpg	Dscf.5201.jpg
Dscf.5082.jpg	Dscf.5122.jpg	Dscf.5162.jpg	Dscf.5202.jpg
Dscf.5083.jpg	Dscf.5123.jpg	Dscf.5163.jpg	Dscf.5203.jpg
Dscf.5084.jpg	Dscf.5124.jpg	Dscf.5164.jpg	Dscf.5204.jpg
Dscf.5085.jpg	Dscf.5125.jpg	Dscf.5165.jpg	Dscf.5205.jpg
Dscf.5086.jpg	Dscf.5126.jpg	Dscf.5166.jpg	Dscf.5206.jpg
Dscf.5087.jpg	Dscf.5127.jpg	Dscf.5167.jpg	Dscf.5207.jpg
Dscf.5088.jpg	Dscf.5128.jpg	Dscf.5168.jpg	Dscf.5208.jpg
Dscf.5089.jpg	Dscf.5129.jpg	Dscf.5169.jpg	Dscf.5209.jpg
Dscf.5090.jpg	Dscf.5130.jpg	Dscf.5170.jpg	Dscf.5210.jpg
Dscf.5091.jpg	Dscf.5131.jpg	Dscf.5171.jpg	Dscf.5211.jpg
Dscf.5092.jpg	Dscf.5132.jpg	Dscf.5172.jpg	Dscf.5212.jpg
Dscf.5093.jpg	Dscf.5133.jpg	Dscf.5173.jpg	Dscf.5213.jpg
Dscf.5094.jpg	Dscf.5134.jpg	Dscf.5174.jpg	Dscf.5214.jpg
Dscf.5095.jpg	Dscf.5135.jpg	Dscf.5175.jpg	Dscf.5215.jpg
Dscf.5096.jpg	Dscf.5136.jpg	Dscf.5176.jpg	Dscf.5216.jpg
Dscf.5097.jpg	Dscf.5137.jpg	Dscf.5177.jpg	Dscf.5217.jpg
Dscf.5098.jpg	Dscf.5138.jpg	Dscf.5178.jpg	Dscf.5218.jpg
Dscf.5099.jpg	Dscf.5139.jpg	Dscf.5179.jpg	Dscf.5219.jpg
Dscf.5100.jpg	Dscf.5140.jpg	Dscf.5180.jpg	Dscf.5220.jpg
Dscf.5101.jpg	Dscf.5141.jpg	Dscf.5181.jpg	Dscf.5221.jpg
Dscf.5102.jpg	Dscf.5142.jpg	Dscf.5182.jpg	Dscf.5222.jpg
Dscf.5103.jpg	Dscf.5143.jpg	Dscf.5183.jpg	Dscf.5223.jpg
Dscf.5104.jpg	Dscf.5144.jpg	Dscf.5184.jpg	Dscf.5224.jpg
Dscf.5105.jpg	Dscf.5145.jpg	Dscf.5185.jpg	Dscf.5225.jpg
Dscf.5106.jpg	Dscf.5146.jpg	Dscf.5186.jpg	Dscf.5226.jpg



**TABLE A4.02: HARD-COPY DATA COLLECTED BY THE FACT-FINDING MISSION**

Entry Number	Assigned Package Code	Evidence Reference Number	Description
1.	10015	201712151001503	Drawing
2.	10018	201712151001803	Drawing

## Annex 5

### DOCUMENTS RECEIVED FROM THE SYRIAN ARAB REPUBLIC

1. On 26 October 2017, the Syrian Arab Republic informed the Secretariat through Note Verbale No. 103 of an instance of alleged use of toxic chemicals as a weapon in the area of Kharbit Massasneh in Hama Governorate, Syrian Arab Republic on 7 July 2017 and 4 August 2017. In this note verbale, the National Authority of the Syrian Arab Republic requested the OPCW to investigate both reported incidents.
2. On 10 November 2017, the Syrian Arab Republic provided additional information in Note Verbale No. 116, including documents on incidents in the area of Kharbit Massasneh.
3. On 22 November 2017, the Syrian Arab Republic sent Note Verbale No. 124 regarding deployment of the FFM.
4. On 4 December 2017, the Syrian Arab Republic provided a CD with three videos with Note Verbale No. 128, which addressed the incident that took place on 4 August 2017 in Kharbit Massasneh (Annex 6).
5. On 9 December 2017, the FFM received the following documents from the National Authority of the Syrian Arab Republic: a report on incidents in Kharbit Massasneh on 7 July 2017 and 4 August 2017; a copy of the floorplan of the National Hospital of Hama; a copy of the medical staff shift log from the National Hospital of Hama on 7 July 2017 and 4 August 2017; a copy of the police report and medical reports related to the incident on 7 July 2017 in Kharbit Massasneh; and a copy of the forensic report and medical reports related to the incident on 7 July 2017 in Kharbit Massasneh.
6. On 17 December 2017, the FFM received the following documents from the National Authority of the Syrian Arab Republic: a copy of the Comparative Study between the effect of toxic chemicals used by terrorist groups during incidents and the toxic and irritant gases used for riot control; forensic reports relating to the incident on 7 July 2017 in Kharbit Massasneh; and references for names and chemical codes.
7. On 4 April 2018, the FFM received information from the National Authority of the Syrian Arab Republic related to incident on 7 July 2017 and 4 August 2017 in Kharbit Massasneh (GPS coordinates, maps, and information about detection devices used).
8. On 29 September 2018, the FFM received an updated report on the incidents in Kharbit Massasneh on 7 July 2017 and 4 August 2017 from the National Authority of the Syrian Arab Republic.
9. On 2 October 2017, the FFM received the following documents from the National Authority of the Syrian Arab Republic: photos of three medical reports related to the incident on 7 July 2017 in Kharbit Massasneh; photos of four medical reports related to the incident on 4 August 2017 in Kharbit Massasneh; photos of the emergency room patient logbook from the National Hospital of Hama on 7 July 2017; and, photos of the emergency room patient logbook from the National Hospital of Hama on 4 August 2017.

10. On 21 May 2020, the Syrian Arab Republic sent Note Verbale No. 38 and provided additional information, including copies of forensic reports and police reports, as requested by the FFM.
11. On 1 April 2021, the Syrian Arab Republic sent Note Verbale No. 32 regarding the activities of the FFM during its deployment.
12. On 6 April 2021, in reference to the Secretariat's Notes Verbales NV/ODG-50/21 (dated 25 March 2021) and NV/ODG-53/21 (dated 1 April 2021), the Syrian Arab Republic sent Note Verbale No. 32 regarding the deployment of the FFM.
13. On 15 November 2021, in reference to the Secretariat's Note Verbale NV/ODG-172/21 (dated 9 November 2021), the Syrian Arab Republic sent Note Verbale No. 137 regarding the deployment of the FFM.
14. On 25 March 2022, in reference to the Secretariat's Note Verbale NV/ODG-239/21 (dated 22 February 2021), the Syrian Arab Republic sent Note Verbale No. 22.

## Annex 6

### DESCRIPTIONS OF THE VIDEO RECORDINGS RECEIVED FROM THE SYRIAN ARAB REPUBLIC

#### **Video 1: 20170804185250**

Video 1 is 10 seconds long and portrays a male patient lying supine on a bed. The patient is being treated with a low-volume nebulizer through a mask. The subject is awake with purposeful movement and is in no apparent distress. The ventilation rate is normal and there is no visible sign of dyspnoea or cyanosis.

An intravenous catheter is placed in the right forearm and no external trauma is noted.

Audio is background noise only.

#### **Video 2: 20170804185532**

Video 2 is 14 seconds in length and shows one adult male laying in the semi-fowlers position on a hospital bed. The subject is being treated with a low-volume nebulizer through a mask and does not show signs of being conscious. The ventilation rate is normal and there is no objective sign of dyspnoea or cyanosis.

An intravenous catheter is placed in the right hand and a blood pressure cuff is on the left arm.

No external trauma is noted.

Audio is background noise only.

#### **Video 3: 20170804185958**

Video 3 is 53 seconds in length and contains an interview of medical staff. In the background, an adult male can be seen laying in the semi-fowlers position on a hospital bed in a patient treatment room.

The patient is being treated with a low-volume nebulizer via a mask and is awake with purposeful movement. The ventilation rate appears normal and there is no objective sign of dyspnoea.

Due to the subject not being the primary subject of the video, it is not possible to evaluate for cyanosis. No external trauma is noted.

The interview is being conducted with treating medical personnel. The personnel state that the Hospital was informed that they would be receiving four casualties reportedly exposed to an inhalation of toxic gas. They describe the casualties as presenting with agitation, dyspnoea, conjunctival injection, and “frothing at the mouth”. They were treated with a nebulizer (medication not stated) and non-specific medication intravenously.

The treating medical personnel also state that the casualties are in good condition and have improved since their arrival. It is unknown when the interview took place in relation to the arrival of the casualties.