



## Security Council

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### **Letter dated 24 November 2015 from the Secretary-General addressed to the President of the Security Council**

I have the honour to transmit herewith the twenty-sixth monthly report of the Director-General of the Organization for the Prohibition of Chemical Weapons (OPCW), submitted pursuant to paragraph 12 of Security Council resolution 2118 (2013) (see annex). The present report covers the period from 22 October to 23 November 2015.

With respect to the destruction of the 12 chemical weapons production facilities, comprising five underground structures and seven hangars, only one hangar has yet to be destroyed. However, as previously reported, that hangar remains inaccessible, owing to the prevailing security situation.

I note that progress continues to be made in the destruction of all chemicals declared by the Syrian Arab Republic. I look forward to the full completion of this process.

Since my previous letter (S/2015/820), dated 26 October 2015, the OPCW Declaration Assessment Team has returned from its twelfth visit to the Syrian Arab Republic. During that visit, the Team visited several sites, taking a number of samples. Its consultations with Syrian authorities and technical-level discussions also continued. Planning is currently under way for the thirteenth visit of the Team to the Syrian Arab Republic, which is scheduled to take place in December 2015.

As I indicated to you in my previous letter, the OPCW Executive Council had requested the Director-General to report to it before its eighty-first session, in March 2016, on the details of all unresolved issues, in particular those on which no further progress had been made. In that regard, I again underline the necessity of continuing cooperation between the Syrian authorities and OPCW.

You may recall that the OPCW Executive Council, in its decision of 4 February 2015 (EC-M-48/DEC.1), *inter alia*, noted the statement by the Director-General of his intent to include, as part of his monthly reports to the Security Council, the reports of the OPCW fact-finding mission in the Syrian Arab Republic, along with information on any discussions within the Executive Council on the work of the mission. In that regard, three fact-finding mission reports were transmitted to you on 25 February 2015 (see S/2015/138). Since my previous letter, three further fact-finding mission reports have been circulated to States parties to the Chemical Weapons Convention. In accordance with the aforementioned Executive Council decision, those latest reports have been attached hereto (see annex, enclosures III-V).



The reports contain some profoundly disturbing conclusions, including the finding by the OPCW fact-finding mission of the likely use of one or more toxic chemicals — probably containing the element chlorine — as a weapon, and its confirmation with “utmost confidence” of the use of sulfur mustard.

The seriousness of the conclusions of the OPCW fact-finding mission cannot be overemphasized. The use of chemical weapons is both unconscionable and unacceptable. I am confident that those responsible will be identified and will be held to account.

In this context, and in relation to the work of the OPCW-United Nations Joint Investigative Mechanism, I have the honour to refer to my letter, dated 9 November 2015 (S/2015/854), by which I informed the President of the Security Council, as requested by the Council in paragraph 10 of its resolution 2235 (2015), that the Mechanism would begin its full operations on 13 November 2015. Immediately thereafter, from 16 to 18 November 2015, the independent, three-member leadership panel of the Mechanism held a three-day meeting in The Hague with the staff of the Mechanism who had been recruited or identified for recruitment. The aim of the meeting was to formally initiate the investigative work of the Mechanism. It also facilitated the continuation of discussions with OPCW for the speedy conclusion of the memorandum of understanding on the provision of access, storage and handling of information and other arrangements, which are still pending.

The supplementary arrangement with OPCW concerning the implementation of Security Council resolution 2235 (2015) was concluded on 20 November 2015.

The text of the status-of-mission agreement to be concluded with the Government of the Syrian Arab Republic has been agreed upon and will be signed as soon as the Arabic text of the agreement becomes available. Finally, I am grateful for the voluntary contributions to the trust fund received thus far and am pleased to announce that further pledges have been received from a number of Member States.

*(Signed)* **BAN Ki-moon**

**Annex**

[Original: Arabic, Chinese, English, French, Russian and Spanish]

I have the honour to transmit to you my report entitled “Progress in the elimination of the Syrian chemical weapons programme”, prepared in accordance with the relevant provisions of Executive Council decision EC-M-33/DEC.1 of the Organization for the Prohibition of Chemical Weapons and Security Council resolution 2118 (2013), both dated 27 September 2013, for transmission to the Council. My report covers the period from 22 October to 23 November 2015 and also covers the reporting requirements of Executive Council decision EC-M-34/DEC.1, dated 15 November 2013. Please also find attached Executive Council decision EC-M-50/DEC.1, dated 23 November 2015, entitled “Further reports of the OPCW Fact-Finding Mission in Syria”, and the three reports by the Fact-Finding Mission, mandated to establish the facts surrounding the alleged use of toxic chemicals as a weapon in the Syrian Arab Republic.

*(Signed)* Ahmet **Üzümcü**

## Enclosure I

### **Note by the Director-General of the Organization for the Prohibition of Chemical Weapons**

#### **Progress in the elimination of the Syrian chemical weapons programme**

1. In accordance with subparagraph 2(f) of the decision by the Executive Council (hereinafter “the Council”) at its Thirty-Third Meeting (EC-M-33/DEC.1, dated 27 September 2013), the Technical Secretariat (hereinafter “the Secretariat”) is to report to the Council on a monthly basis regarding the implementation of that decision. In accordance with paragraph 12 of United Nations Security Council resolution 2118 (2013), the report by the Secretariat is also to be submitted to the Security Council through the Secretary-General.
2. The Council, at its Thirty-Fourth Meeting, adopted a decision entitled “Detailed Requirements for the Destruction of Syrian Chemical Weapons and Syrian Chemical Weapons Production Facilities” (EC-M-34/DEC.1, dated 15 November 2013). In paragraph 22 of that decision, the Council decided that the Secretariat should report on its implementation “in conjunction with its reporting required by subparagraph 2(f) of Council decision EC-M-33/DEC.1”.
3. The Council, at its Forty-Eighth Meeting, also adopted a decision entitled “Reports of the OPCW Fact-Finding Mission in Syria” (EC-M-48/DEC.1, dated 4 February 2015).
4. This, the twenty-sixth monthly report, is therefore submitted in accordance with the aforementioned Council decisions, and includes information relevant to the period from 22 October to 23 November 2015.

#### **Progress achieved by the Syrian Arab Republic in meeting the requirements of EC-M-33/DEC.1 and EC-M-34/DEC.1**

5. Progress within the reporting period by the Syrian Arab Republic is as follows:
  - (a) As previously reported, the Secretariat has verified the destruction of 11 of the 12 chemical weapons production facilities (CWPFs) in the Syrian Arab Republic, namely five underground structures and seven aircraft hangars. The remaining hangar yet to be destroyed continued to be inaccessible during the reporting period due to the security situation.
  - (b) On 13 November 2015, the Syrian Arab Republic submitted to the Council its twenty-fourth monthly report (EC-81/P/NAT.2, dated 12 November 2015) regarding activities on its territory related to the destruction of its chemical weapons and CWPFs, as required by paragraph 19 of EC-M-34/DEC.1.
  - (c) The Syrian authorities have continued to extend the necessary cooperation in accordance with the implementation of subparagraph 1(e) of EC-M-33/DEC.1 and paragraph 7 of United Nations Security Council resolution 2118 (2013).

**Progress in the elimination of Syrian chemical weapons by States Parties hosting destruction activities**

6. Significant progress has been made in destroying all the chemicals declared by the Syrian Arab Republic, which were removed from its territory in 2014. A combined total of 99.2 per cent of all declared chemical weapons has been verified as destroyed, which includes the isopropanol previously destroyed in the Syrian Arab Republic, 100 per cent of the Category 1 chemicals, and 96.2 per cent of the Category 2 chemicals. The effluent produced by the neutralization process of sulfur mustard and DF has also been destroyed. As at the cut-off date of the report, a total of 68.6 per cent of the remaining Category 2 chemical, hydrogen fluoride (HF) has now been destroyed, as Veolia ES Technical Solutions, LLC in the United States of America continued its destruction activities, as previously reported. Additional improvements to the process were made to ensure that the HF in the remaining corroded cylinders is safely destroyed. The Secretariat will continue to brief States Parties in The Hague on this activity, which is now expected to be completed in January 2016.

**Activities carried out by the Secretariat with respect to the Syrian Arab Republic**

7. The Secretariat and the United Nations Office for Project Services have made arrangements to extend their cooperation in the context of the OPCW Mission in the Syrian Arab Republic until May 2016. One OPCW staff member was deployed as part of that mission as at the cut-off date of this report.

8. The Director-General has continued to communicate with senior representatives of the States Parties hosting a destruction facility or providing assistance with the destruction of Syrian chemical weapons, and with senior officials of the Government of the Syrian Arab Republic. As requested by the Council at its Seventy-Fifth Session (paragraph 7.12 of EC-75/2, dated 7 March 2014), the Secretariat, on behalf of the Director-General, has continued to brief States Parties in The Hague on its activities.

9. The Secretariat and the Syrian authorities have maintained their ongoing cooperation on outstanding issues regarding the Syrian initial declaration, as encouraged by the Council at its Seventy-Sixth Session (paragraph 6.17 of EC-76/6, dated 11 July 2014). The Declaration Assessment Team (DAT), during its twelfth visit to the Syrian Arab Republic (from 2 to 12 November 2015), continued to pursue outstanding issues through site visits, discussions with Syrian authorities, and technical consultations with experts from the Syrian chemical weapons programme. A large number of samples, including those taken during the DAT's eleventh visit, were brought back to the OPCW for dispatch to designated laboratories for analysis. The DAT's next visit is currently scheduled to take place from 7 to 18 December 2015.

**Supplementary resources**

10. The total contributions of EUR 50.3 million in the Syria Trust Fund for the Destruction of Chemical Weapons and the contributors thereto remain unchanged from the previous report.

**Activities carried out with respect to the OPCW Fact-Finding Mission in Syria**

11. On 23 November 2015, the Council, at its Fiftieth Meeting, adopted a decision entitled “Further Reports of the OPCW Fact-Finding Mission in Syria” (EC-M-50/DEC.1), in which it, inter alia, “expresses grave concern regarding the findings of the Fact-Finding Mission that chemical weapons have once again been used in the Syrian Arab Republic”. In this regard, the Council underscored that two FFM reports issued on 29 October 2015 had concluded that, with respect to several incidents in the Idlib Governorate, they “likely involved the use of one or more toxic chemicals — probably containing the element chlorine — as a weapon” with an “outcome of exposure [that] was fatal in six cases in Sarmin” (S/1319/2015), including those of three children in the same family; and, with regard to the incident in the town of Marea, confirmed “with the utmost confidence that at least two people were exposed to sulfur mustard”, and that it is “very likely that the effects of sulfur mustard resulted in the death of a baby” (S/1320/2015).

12. Furthermore, in the aforementioned decision, the Council noted that with respect to the Syrian government’s allegations that its soldiers were attacked with chemical weapons in Jober in 2014, the third FFM report issued by the Secretariat on 29 October 2015 (S/1318/2015) stated it “cannot confidently determine whether or not a chemical was used as a weapon”. The Council further noted that this is an interim report and that other incidents under investigation are pending final analysis and will be included in the final report.

13. Delegations at the Fiftieth Meeting expressed to the Council their positions on the FFM’s work and its three reports. The Council heard expressions of support for the work done thus far by the Mission. In the Council, diverse views were expressed with regard to the reports.

14. The OPCW, in a letter from the Head of the OPCW-UN Joint Investigative Mechanism (JIM), was notified that the Secretary-General had informed the President of the United Nations Security Council that the JIM began its full operations on 13 November 2015. The JIM leadership panel has recruited qualified staff and set up offices in New York and The Hague, and plans to establish a presence in Damascus. In accordance with the timelines set by United Nations Security Council resolution 2235 (2015), the JIM is expected to present its first report to the Security Council in February 2016, and will inform the OPCW Executive Council at that time. As the JIM is an independent body, the Technical Secretariat will offer its assistance and support, including through the work of the OPCW FFM. The Director-General has provided the JIM with all FFM reports produced hitherto on 14 November 2015.

**Conclusion**

15. The main focus of the future activities of the OPCW Mission in the Syrian Arab Republic will be on the DAT and FFM activities, as well as the destruction and verification of the remaining aircraft hangar.

## Enclosure II

### Decision

#### Further reports of the OPCW Fact-Finding Mission in Syria

##### The Executive Council,

**Underlining** that the use of any chemical weapons by anyone under any circumstances is reprehensible and completely contrary to the legal norms and standards of the international community;

**Recalling** the determination of the States Parties to the Chemical Weapons Convention (hereinafter “the Convention”) “for the sake of all mankind, to exclude completely the possibility of the use of chemical weapons, through the implementation of the provisions of this Convention”;

**Recalling also** the decision of the Executive Council (hereinafter “the Council”) regarding reports of the OPCW Fact-Finding Mission in Syria (EC-M-48/DEC.1, dated 4 February 2015), which expressed serious concern regarding the findings of the Fact-Finding Mission, made with a high degree of confidence, that chlorine had been used as a weapon in the Syrian Arab Republic in the villages of Talmenes, Al Tamanah, and Kafr Zita from April to August 2014;

**Cognizant** of the most recent reports of the OPCW Fact-Finding Mission in Syria (S/1318/2015, S/1319/2015, and S/1320/2015, all dated 29 October 2015), set up by the Director-General to establish the facts surrounding the allegations of the use of toxic chemicals for prohibited purposes in the Syrian Arab Republic, and of the fact that the Director-General intends to transmit the reports to the United Nations Secretary-General, as requested by United Nations Security Council resolution 2209 (2015), dated 6 March 2015; **while noting** that in the Executive Council diverse views were expressed with regard to these reports;

**Mindful** of the Director-General’s correspondence transmitting United Nations Security Council resolution 2118 (2013), dated 27 September 2013, and United Nations Security Council resolution 2209 (2015), dated 6 March 2015;

**Mindful also** that the task of the Fact-Finding Mission does not include the question of attributing responsibility for alleged use;

**Cognizant** of the Note by the Director-General dated 11 August 2015 (S/1302/2015) transmitting United Nations Security Council resolution 2235 (2015), dated 7 August 2015, establishing an OPCW-United Nations Joint Investigative Mechanism to identify to the greatest extent feasible individuals, entities, groups or governments that were perpetrators, organisers, sponsors or otherwise involved in the use of chemicals as weapons, including chlorine or any other toxic chemical, in the Syrian Arab Republic, where the OPCW Fact-Finding Mission determines or has determined that a specific incident in the Syrian Arab Republic involved or likely involved the use of chemicals as weapons, including chlorine or any other toxic chemical;

**Further cognizant** of the aforementioned Note by the Director-General dated 11 August 2015 (S/1302/2015) transmitting United Nations Security Council resolution 2235, dated 7 August 2015, which requests the Fact-Finding Mission to collaborate with the OPCW-United Nations Joint Investigative Mechanism to

provide full access to all of the information and evidence obtained or prepared by the Fact-Finding Mission, including but not limited to, medical records, interview tapes and transcripts, and documentary material;

**Expressing appreciation** to the Fact-Finding Mission personnel for their courage, dedication, and the professional manner in which they have carried out their assignment; and

**Expressing support** for the continuation of the work of the Fact-Finding Mission, in particular studying all available information relating to the allegations of use of chemical weapons in the Syrian Arab Republic, including that provided by the Syrian Arab Republic as well as by others;

**Hereby:**

1. **Expresses grave concern** regarding the findings of the Fact-Finding Mission that chemical weapons have once again been used in the Syrian Arab Republic, and in this regard:

(a) **underscores** that, with respect to the incident in Marea, Syrian Arab Republic, on 21 August 2015, the report of the Fact-Finding Mission confirmed “with the utmost confidence that at least two people were exposed to sulfur mustard” and that it is “very likely that the effects of sulfur mustard resulted in the death of a baby” (S/1320/2015); and

(b) **further underscores** that, with respect to several incidents in the Idlib Governorate of the Syrian Arab Republic between 16 March 2015 and 20 May 2015, the report of the Fact-Finding Mission concluded that they “likely involved the use of one or more toxic chemicals — probably containing the element chlorine — as a weapon” with an “outcome of exposure [that] was fatal in six cases in Sarmin”, including those of three children in the same family (S/1319/2015);

2. **Notes** that, with respect to allegations submitted by the Syrian Arab Republic that its soldiers were attacked with chemical weapons in Jober on 29 August 2014, the Fact-Finding Mission reported that it “cannot confidently determine whether or not a chemical was used as a weapon” (S/1318/2015), and **further notes** that its report is an interim report and that other incidents under investigation are pending final analysis and will be included in the final report;

3. **Reaffirms its condemnation**, in the strongest possible terms, of the use of chemical weapons by anyone under any circumstances;

4. **Emphasises again** that any use of chemical weapons anywhere, at any time, by anyone, under any circumstances is unacceptable and would violate international law;

5. **Expresses again its strong conviction** that those individuals responsible for the use of chemical weapons should be held accountable;

6. **Requests** the Director-General to provide the Council at its next regularly scheduled session with information on the progress of the Fact-Finding Mission as well as on specific plans, schedules, and implementation; and

7. **Calls upon** all relevant parties to extend their full cooperation to the Fact-Finding Mission to ensure that it completes its work safely and effectively.

## Enclosure III

### Note by the Technical Secretariat of the Organization for the Prohibition of Chemical Weapons

#### Interim report of the OPCW Fact-Finding Mission in Syria regarding the incidents described in communications from the Deputy Minister for Foreign Affairs and Expatriates and the Head of the National Authority of the Syrian Arab Republic from 15 December 2014 to 15 June 2015

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## 1. EXECUTIVE SUMMARY

1.1 At its Forty-Eighth Meeting, the OPCW Executive Council adopted a decision entitled “Reports of the OPCW Fact-Finding Mission in Syria” (EC-M-48/DEC.1, dated 4 February 2015) in which, inter alia, it requested the Director-General to provide information on the progress of the Fact-Finding Mission (“FFM”) and specific plans, schedules and their implementation to the Council at its next regular session. In response to this request, the Technical Secretariat (“Secretariat”) submitted a Note to address the future activities of the OPCW FFM (S/1255/2015, dated 10 March 2015).

1.2 The Secretariat received a note verbale from the Syrian Arab Republic (Note Verbale 150) providing information about incidents involving the alleged use of chemicals as a weapon, particularly chlorine. In addition, the Permanent Representation of the Syrian Arab Republic later submitted Notes Verbales 41, 43, and 47 detailing other incidents that allegedly involved the use of chemicals as a weapon. In total, the notes referred to 26 incidents and 432 casualties.

1.3 Due to the seriousness of the allegations, the Director-General dispatched a team to collect the facts pertinent to the alleged chemical incidents as reported in the referenced notes verbales. The FFM deployed on 1 June, 1 August, and 13 October 2015. The team was composed of OPCW inspectors, consulting medical doctors, and interpreters. During the deployment, the FFM conducted its investigation by collecting testimonies, reviewing documents and information provided by the Syrian authorities, and by visiting certain locations deemed of interest in the Damascus area. In total, the team conducted approximately 75 interviews in relation to 6 alleged incidents.

1.4 At the time at which this interim report was issued, the FFM had completed the analysis of the alleged incident in Jober on 29 August 2014. The other incidents under investigation are pending final analysis and will be included in the final report.

1.5 Regarding the aforementioned alleged incident in Jober, the FFM is of the opinion that it would have been able to be more precise in its findings if further objective evidence complementing what was provided by the Syrian National Authority had been made available. The team was not able to obtain hard evidence related to this incident, either because it was unavailable or because it was not generated in the first place. The lack of hard evidence precluded the FFM from gathering further facts in a definitive way. Therefore, based only on the interviews carried out and documents reviewed, the FFM is of the view that those affected in the alleged incident may have been exposed to some type of non-persistent, irritating airborne substance, following the surface impact of two launched objects.

1.6 However, based on the evidence presented by the Syrian National Authority, the medical records that were reviewed, and the prevailing narrative of all of the interviews, the FFM cannot confidently determine whether or not a chemical was used as a weapon. Furthermore, the FFM is of the view that while the general clinical presentation of those affected in the incident is consistent with brief exposure to any number of chemicals or environmental insults, the visual and olfactory description of the potential irritant does not clearly indicate any specific chemical.

## 2. THE FACT-FINDING MISSION: BACKGROUND INFORMATION

2.1 At its Forty-Eighth Meeting, the OPCW Executive Council adopted a decision entitled “Reports of the OPCW Fact-Finding Mission in Syria” (EC-M-48/DEC.1, dated 4 February 2015) in which, inter alia, it requested the Director-General to provide information on the progress of the FFM and specific plans, schedules and their implementation to the Council at its next regular session.

2.2 In response to this request, the Secretariat submitted a Note to address the future activities of the FFM (S/1255/2015, dated 10 March 2015). This Note stated that the Secretariat received a note verbale from the Syrian Arab Republic (reference number 150, dated 15 December 2014, hereinafter “Note Verbale 150”) providing information about incidents involving the alleged use of chemicals as a weapon, particularly chlorine.

2.3 Note Verbale 150 contained a report by the Military Medical Services of the General Command of the Army and the Armed Forces of the Syrian Arab Republic providing information on cases of injuries sustained by soldiers of the Syrian Arab Republic in a number of locations as a result of the use of chlorine by opposition groups. The report listed alleged chemical incidents, with the locations of alleged instances of exposure, casualty names, ranks, duty stations, reported symptoms, medical assistance received, and conditions after discharge. The table below summarises the data contained in the medical report.

**TABLE 1: SUMMARY OF THE ALLEGED INCIDENTS IN NOTE VERBALE 150:**

No.	Date	Location	Number of Casualties	Type of Casualty
1.	16/04/2014	Al-Maliha	5	Military personnel
2.	16/04/2014	Jober	10	Military personnel
3.	02/07/2014	Al-Maliha	5	Military personnel
4.	08/07/2014	Al-Maliha	7	Military personnel
5.	11/07/2014	Al-Maliha	6	Military personnel
6.	15/08/2014	Darayya	8	Military personnel
7.	29/08/2014	Jober	33	Military personnel
8.	04/09/2014	Jober	5	Military personnel
9.	10/09/2014	Al-Kabbas	6	Military personnel
10.	18/09/2014	Al-Kabbas	7	Military personnel
<b>Total</b>	<b>10 separate incidents</b>	<b>4 locations (neighbourhoods in the Damascus area)</b>	<b>92 casualties</b>	<b>Military personnel</b>

2.4 In addition, Note Verbale 150 made reference to an attack where it is alleged that toxic gases were employed against Syrian Arab Army soldiers on 22 December

2012. According to the note verbale, seven fatalities occurred as a result of exposure to a yellow gas. These fatalities happened within one hour of exposure.

2.5 Upon receipt of Note Verbale 150, and due to the severity of the allegations, the Director-General resolved to dispatch a team to the Syrian Arab Republic to collect the facts pertinent to alleged chemical incidents as reported in Note Verbale 150. Correspondence between the Director-General and the Syrian Arab Republic followed, addressing the launch of a FFM. Requests for clarification made by the Syrian Arab Republic in this regard were responded to.

2.6 The Terms of Reference for the OPCW FFM in Syria were agreed upon through correspondence (S/1255/2015, dated 10 March 2015). Further correspondence between the Director-General and the authorities of the Syrian Arab Republic took place between March and April 2015 in order to clarify points about the future work of the FFM and its terms of reference.

### **3. THE FACT-FINDING MISSION: PRE-DEPLOYMENT PHASE**

3.1 The Director-General appointed the mission leader for the FFM on 24 March 2015. Next, a team of inspectors was selected based not only on professional background, technical expertise, and skills, but also with due regard for the geographic distribution of nationalities of the team's membership. Once the team was assembled, preparations for deployment commenced. These preparations included logistics, administration, health, safety and security assessment and planning. Additionally, the team underwent a number of training sessions to refresh knowledge and practice on topics such as conducting interviews, forensic techniques, confidentiality procedures, and explosive remnants of war.

3.2 Correspondence between the Syrian Arab Republic and the Secretariat took place in April and May 2015. In these letters, the Secretariat detailed the team membership, made a request for the deployment of an Advance Team to liaise with the relevant authorities of the Syrian Arab Republic, and submitted a preliminary list of requests for information and services to be provided to the FFM in Damascus. Among other things, these requests addressed initial requirements deemed appropriate by the FFM for its investigation and were subject to possible changes during the FFM.

3.3 A list of requests for information and services to be provided by the authorities of the Syrian Arab Republic to the FFM was sent in correspondence (L/ODG/198036/15, dated 21 May 2015). The list made reference to the incidents involving the alleged use of chemical weapons described in Note Verbale 150. This list is detailed in Table 3 of this report.

3.4 The Syrian Arab Republic sent a reply to the Secretariat on 21 May 2015, in which it welcomed the deployment of the FFM to Syria, despite providing some suggested changes to the previously agreed terms of reference (Note Verbale 37). This was followed by a series of meetings in The Hague and Damascus. Once negotiations and requests for clarification were concluded, the FFM received authorisation to deploy.

3.5 It was agreed that an Advance Team would arrive in the Syrian Arab Republic on 25 May 2015, whilst the main body of the FFM would arrive on 1 June 2015. The purpose of the Advance Team was to meet with the relevant authorities from the Syrian Arab Republic in Damascus in order to discuss how to best proceed with the FFM's work. The main body of the team would then carry out the bulk of investigative activities upon arrival.

## **FIRST DEPLOYMENT**

### **Advance Team Activities**

3.6 The Advance Team was comprised of the mission team leader and three team members who carried out the described preparatory activities from 25 May 2015 to 29 May 2015. The Advance Team provided a copy of its mandate (in English and Arabic) to the authorities of the Syrian Arab Republic at their first meeting and continued to finalise operational details during follow-up meetings over subsequent days.

3.7 A series of meetings with the authorities of the Syrian Arab Republic took place on the following days. During these meetings, the Advance Team offered explanations to the authorities of the Syrian Arab Republic on the methodology intended to be used by the FFM. The methodology would include interviews, the review of records and evidence (as per the request sent in correspondence L/ODG/198036/15, dated 21 May 2015), and potential field visits. These field visits would only be performed if deemed necessary and safe. The FFM Advance Team offered clarification on the aforementioned list of records required for the investigation. The necessary arrangements for the interviews were also discussed, such as the number of interviews per day, locations, and potential interviewees.

3.8 The Advance Team indicated that the FFM should maintain full discretion over the selection of potential interviewees. The authorities of the Syrian Arab Republic replied that such unhindered access would not be possible due to operational conflict-related constraints affecting, among other things, transport and security. With regard to these constraints, an agreement was reached between the authorities of the Syrian Arab Republic and the FFM to focus initially on the incident alleged to have taken place on 29 August 2014 in Jobar. The fact that this particular event involved the highest number of casualties from among all of the alleged incidents described in Note Verbale 150 served as the basis for this agreement. Accordingly, the authorities of the Syrian Arab Republic proposed to make relevant witnesses available to the FFM. The witnesses included casualties, first responders, ambulance drivers, and medical personnel involved in said alleged incident.

3.9 The FFM requested a visit to Martyr Youssef Al-Adhma Hospital (hereinafter "Hospital 601"), which was described in Note Verbale 150 as the location where the casualties of the alleged incidents were treated. This facility, located in the western part of Damascus, provides treatment for military and civilian personnel.

3.10 Apart from possibly identifying suitable witnesses from amongst the staff and patient registers, the FFM aimed to learn about the hospital facilities and record-keeping systems. Additionally, the FFM aimed to obtain information on the medical treatment provided to the alleged victims and determine the availability of biomedical samples.

3.11 During the visit to Hospital 601 on 27 May 2015, the FFM received a tour of hospital facilities. This tour included the ambulance entrance area, an external decontamination area equipped with showers, the triage area, the entrance to the emergency department, resuscitation room, and a typical multi-bed ward room. The team was provided with a sample of patient logs kept by the hospital, including a log-book of clinical admissions making mention of patients listed in Note Verbale 150. Furthermore, the hospital liaison officer gave verbal confirmation to the FFM that all patients associated with Note Verbale 150 were treated there.

3.12 At the end of the visit, the Advance Team indicated which hospital records it would like to review and identified potential hospital staff to be interviewed as witnesses of the alleged incidents. The list of additional records requested from the authorities of the Syrian Arab Republic can be found in Table 4 of this report.

3.13 During the initial meetings with the FFM Advance Team, the authorities of the Syrian Arab Republic indicated that there had been other relevant incidents that were not included in Note Verbale 150. The team received a copy of correspondence sent by the Syrian Arab Republic to the Director-General and the Secretariat (Note Verbale 41, dated 29 May 2015), where details of alleged incidents involving chlorine were provided. The authorities of the Syrian Arab Republic requested that these alleged incidents be included in the scope of the FFM. However, the team indicated that a new mandate including these new allegations would have to be issued for this purpose. In addition to Note Verbale 41, the Syrian Arab Republic submitted Note Verbale 43 (dated 3 June 2015) and Note Verbale 47 (dated 15 June 2015) to the Secretariat detailing incidents that were not included in Note Verbale 150.

3.14 Due to the significance of these allegations, the Director-General again decided to dispatch the FFM to the Syrian Arab Republic to collect facts pertinent to the alleged chemical incidents as reported. The second deployment of the FFM eventually occurred between 1 August 2015 and 16 August 2015 and is described in this report under the heading 'Second Deployment Activities'.

### **The Main Body of the Fact-Finding Mission**

3.15 The main body of the first deployment of this FFM was composed of the deputy mission leader, three inspectors, two medical doctors, and three interpreters. The team deployed on 29 May 2015 and joined the Advance Team in Damascus. Upon arrival, the main body was briefed by the Advance Team on the status of activities to date and the general outline for mission activities going forward. The full FFM team was formally introduced to the Syrian Arab Republic contingent. Final preparations for the interview process were then completed.

### **Investigation Activities**

3.16 As described in paragraph 3.8, the FFM began investigative activities focusing on the alleged incident of 29 August 2014 in the Jobar neighbourhood of Damascus. The following sections describe the related activities carried out by the FFM.

#### Interviews: Methodology and Activities

3.17 The FFM planned the order of the interviews based on the availability of the witnesses, as well as on how witnesses were related to the alleged incident. Priority

was given to collecting testimonies from casualties involved in the alleged incident, followed by the testimonies of medical doctors, nurses, and ambulance drivers.

3.18 The interviews were conducted by two sub-teams, each composed of one or more inspectors, one medical doctor, and one interpreter. The interview process followed applicable procedures established in relevant OPCW working instructions and was consistent with the specialised training mentioned in paragraph 3.1. Evidence obtained in the interviews was also processed according to applicable OPCW working instructions and specialised training.

3.19 The interview teams planned interviews based on information about the interviewee's background, the type of witness, his or her role in the incident, and information provided by other witnesses, among other factors. A package containing interview packs and evidence management packs was prepared for each interview. Each interview pack contained protocol forms, consent forms, note pages, investigative lead forms, and a folder contents list. Each evidence management pack contained receipts for evidence, drawing space forms, SD cards for video, photo and audio recordings, chain-of-custody forms for e-storage devices, a list of evidence on e-storage devices, envelopes for evidence, and a folder contents list.

3.20 The testimonies were collected in hotel accommodations set up as interview rooms. At the hotel where the interviews were being conducted, each interviewee was brought forth by the Syrian Arab Republic contingent and escorted to the interview room. There, each interviewee was greeted upon arrival by the interview team and introduced to each team member. The team member leading each interview provided an explanation about the interview process, confidentiality procedures, consent forms, procedures for protected witnesses, and the methods employed for recording the interview. The interviewees were informed upon entering the room that video and audio devices in place were not yet recording, and that no statements would be recorded until the interviewee gave informed consent to record. If and when an interviewee did not consent to be recorded by an audio or video device, a written statement was produced via the team interpreter.

3.21 Video and audio recordings, written statements, and sketches produced by the interviewees were documented as evidence and secured in the evidence management packs described above.

3.22 On 31 May 2015, the authorities of the Syrian Arab Republic submitted a list of 16 casualties related to the alleged incident of 29 August 2014 in the Jober neighbourhood. According to the Syrian Arab Republic, the named individuals were affected in the described incident and received medical treatment. The authorities of the Syrian Arab Republic also submitted another list containing the names of six doctors and eleven nurses who provided treatment to the patients of said alleged incident.

3.23 The interviews started on 1 June 2015 with the collection of testimonies from casualties affected by the alleged incident. On 3 June 2015, after a number of interviews with casualties and a review of the translated medical records, the FFM selected four names from the list of doctors and nurses who provided treatment to the casualties. In addition, the FFM requested the authorities of the Syrian Arab Republic to make available field medical staff who had treated patients involved in the incident of 29 August 2014 before their transfer to Hospital 601. The authorities

of the Syrian Arab Republic responded verbally to the FFM that they would look into the matter and make the relevant staff available to be interviewed.

3.24 Table 2 provides the list of interviews conducted and the reasoning for selecting each individual for interview.

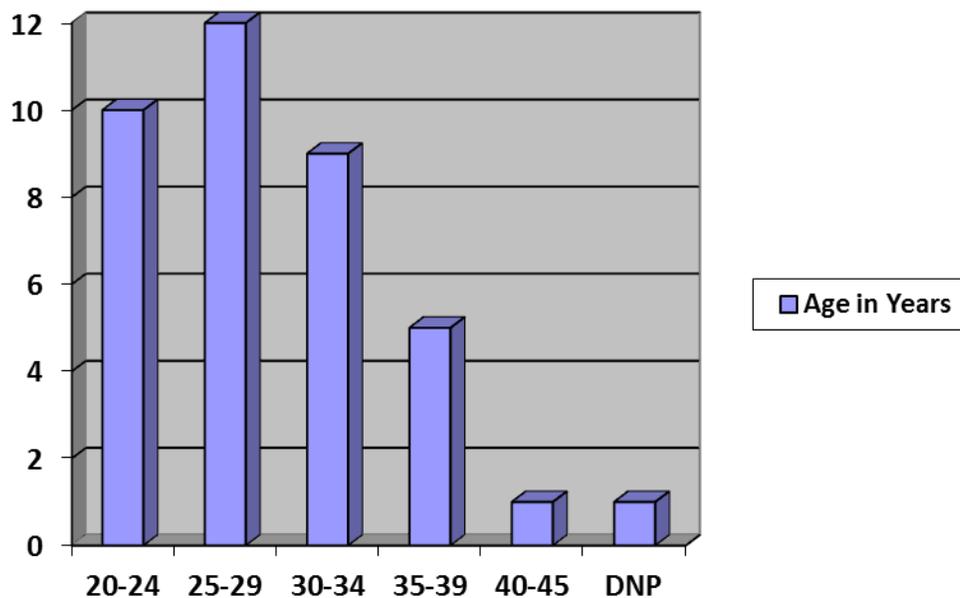
**TABLE 2: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN JOBER ON 29 AUGUST 2014**

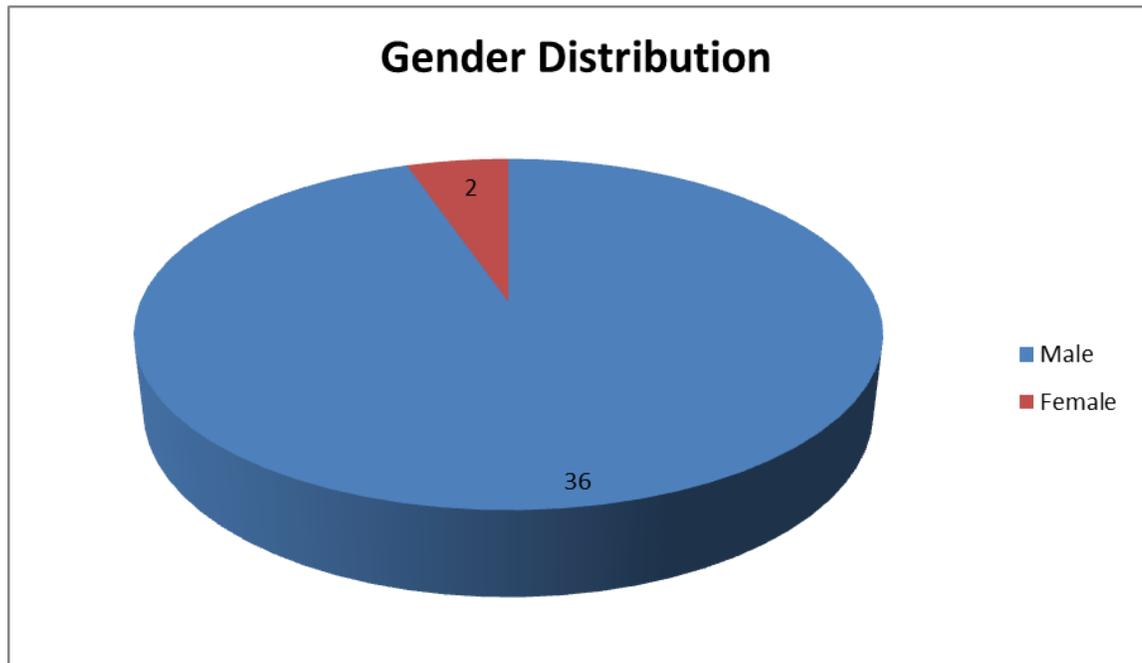
S/N	Rank or Occupation of interviewed individual	Proximity to Alleged incident in FFM Mandate	Date of interview
1.	Military Personnel	Casualty of the alleged incident	1 June 2015
2.	Military Personnel	Casualty of the alleged incident	1 June 2015
3.	Military Personnel	Casualty of the alleged incident	1 June 2015
4.	Military Personnel	Casualty of the alleged incident	1 June 2015
5.	Military Personnel	Casualty of the alleged incident	1 June 2015
6.	Military Personnel	Casualty of the alleged incident	1 June 2015
7.	Military Personnel	Casualty of the alleged incident	1 June 2015
8.	Military Personnel	Casualty of the alleged incident	1 June 2015
9.	Military Personnel	Casualty of the alleged incident	1 June 2015
10.	Military Personnel	Casualty of the alleged incident	2 June 2015
11.	Military Personnel	Casualty of the alleged incident	2 June 2015
12.	Military Personnel	Casualty of the alleged incident	2 June 2015
13.	Military Personnel	Casualty of the alleged incident	2 June 2015
14.	Military Personnel	Casualty of the alleged incident	2 June 2015
15.	Military Personnel	Casualty of the alleged incident	2 June 2015
16.	Military Personnel	Casualty of the alleged incident	2 June 2015
17.	Military Personnel	Casualty of the alleged incident	2 June 2015
18.	Military Personnel	Casualty of the alleged incident	2 June 2015
19.	Military Personnel	Casualty of the alleged incident	3 June 2015
20.	Military Personnel	Casualty of the alleged incident	3 June 2015
21.	Military Personnel	Casualty of the alleged incident	3 June 2015
22.	Military Personnel	Casualty of the alleged incident	3 June 2015
23.	Medical staff	General surgeon from Martyr Youssef Al-Adhma Hospital, ER department	6 June 2015
24.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
25.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	6 June 2015
26.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
27.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
28.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	6 June 2015
29.	Medical staff	Field nurse in the Syrian Arab army	7 June 2015
30.	Medical staff	Ambulance driver	7 June 2015
31.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	7 June 2015

S/N	Rank or Occupation of interviewed individual	Proximity to Alleged incident in FFM Mandate	Date of interview
32.	Medical staff	Medical doctor from Martyr Youssef Al-Adhma Hospital	7 June 2015
33.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	7 June 2015
34.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	7 June 2015
35.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	8 June 2015
36.	Medical staff	Resident medical doctor from Martyr Youssef Al-Adhma Hospital	8 June 2015
37.	Medical staff	Medical assistant from Martyr Youssef Al-Adhma Hospital	8 June 2015
38.	Medical staff	Nurse from Martyr Youssef Al-Adhma Hospital	8 June 2015

3.25 The gender and age distribution of the casualties and medical staff interviewed by the FFM are shown in Charts 1 and 2 below. One interviewee refused to provide his age (DNP).

**CHART 1: AGE DISTRIBUTION AMONG INTERVIEWEES**



**CHART 2: GENDER DISTRIBUTION AMONG INTERVIEWEES**

3.26 All of the females interviewed were medical staff.

3.27 The analysis of the information gathered during the interviews is described in this report under the heading 'Data Analysis Methodology Employed by the FFM'.

#### Requests for Information and Services: Methodology and Activities

3.28 The FFM reviewed the information available in Note Verbale 150 on the incidents involving the alleged use of toxic chemicals and produced a preliminary list of requests for information and services, with a view to clarify and identify facts related to the incidents.

3.29 This request for information and services to be provided to the FFM was submitted in correspondence to the authorities of the Syrian Arab Republic (L/ODG/198036/15, dated 21 May 2015). The correspondence suggested that the requests were provided to the FFM at the time of its deployment to Damascus. The table below presents the list of requests made by the FFM, the date on which they were provided, and comments detailing what was provided.

**TABLE 3: LIST OF REQUESTS MADE BY THE FACT-FINDING MISSION TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 21 MAY 2015**

No.	Description of Information / Service	Date provided	Comments
1.	Confirmed locations, including exact map coordinates and mapping of all of the reported incidents described in the letter.	See table 4	This was provided at a later date per a new request.
2.	Contemporaneous incident reports (and when appropriate copies thereof) from all parties involved, on all of the incidents described in point 1 above.	Not provided	—
3.	Access to and when appropriate copies of any medical records, patient history forms, treatment plans, x-ray images, prescription forms, discharge forms, or any other relevant information deemed necessary by the FFM for all of the casualties named in the letter.	31/05/2015, 02/06/2015, and 08/06/2015	Patient admission, examination and treatment records in the Emergency Department of Hospital 601 relating to the alleged incident in Jobber on 29/08/2014. The information was used to compile the medical report.
4.	If safe to do so, a visit to the Martyr Youssef Al-Adhma Hospital (Hospital 601), Damascus, to acquaint the team with the layout of the hospital, including visits to any areas where the casualties listed in the letter were treated, the hospital records repository, and the record-keeping system.	25/05/15	The FFM Advance Team used this visit to become familiar with hospital facilities, structure and staff, the first response system, and the patient information logging system.
5.	Access to and when appropriate copies of shift logs, organisational charts of the hospital, first responders, and units involved in the incidents described in the letter.	25/05/15	The FFM Advance Team was provided with a briefing on hospital organisation during the hospital visit. Copies of this briefing were not provided.
6.	Access to interview (and the opportunity to record interviews) any first responders, medical staff, explosive ordnance disposal personnel, witnesses or other persons involved in the incidents described in point 1 above as deemed appropriate by the FFM.	31/05/15	The authorities of the Syrian Arab Republic provided the FFM with a list of medical staff involved with the alleged incidents described in Note Verbale 150, and who would be available to be interviewed by the team. Explosive ordnance disposal personnel, other witnesses or persons involved were not identified by the Syrian Arab Republic.

No.	Description of Information / Service	Date provided	Comments
7.	Access to and copies of any photographic or video recordings related to the incidents described in the letter.	08/06/15	One CD with a video available on the Internet claimed to be related to the aftermath of the alleged incident in Jober on 29 August 2014.
8.	If safe to do so, access any locations where remnants of any ordnance or forensic evidence retrieved from the sites listed in the letter might be stored.	N/A	The authorities of the Syrian Arab Republic informed the FFM that no remnants of ordnance or other forensic evidence were retrieved from the sites listed in Note Verbale 150.
9.	Access to any other evidence, documentation, or persons connected to the incidents described in the letter.	Not provided	—
10.	Access to and copies of any additional relevant documents or other information to be reviewed during the FFM.	Not provided	—
11.	Any other matters that may become relevant during the FFM.	Various dates	See list of documents provided by Syrian Arab Republic NA in Annex 8. A number of these documents were already in the FFM's possession as they had appeared in Note Verbale 150. Other documents containing new information were reviewed, however no clear link could be established to any of the incidents investigated by the FFM in its mandate.

3.30 Next, based on its interviews with witnesses and casualties of the Jober alleged incident of 29 August 2014, the FFM submitted a request for additional information to the authorities of the Syrian Arab Republic. This request aimed to clarify the scenario as it had been described by the interviewees and allow for a more detailed understanding of the alleged incident. Table 4 lists the requests made by the FFM and the responses received from the authorities of the Syrian Arab Republic.

**TABLE 4: THE LIST OF REQUESTS MADE BY THE FACT-FINDING MISSION TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 5 JUNE 2015**

No.	Description of Information / Service	Provided on	Comments
1.	The exact locations, including the co-ordinates and marked maps of the soap factory, the decontamination station and the Al-Abbassiyin Polyclinic (مشفى العباسيين), all of which were mentioned in many of the interviews.	08/06/2015	Images from Google Earth detailing key locations related to the alleged incident in Jober on 29/08/2014
2.	Any written reports that may be available concerning the incident of 29 August 2014.	31/05/2015 and 08/06/2015	- A report containing a short summary of the alleged incident in Jober, not dated or signed. - An incident report by a Unit Commander dated 08/06/2015 related to the alleged incident in Jober on 29/08/2014
3.	A list of the first responders or ambulance personnel that transported casualties from the area of the soap factory to the Al-Abbassiyin Polyclinic and the Martyr Youssef Al-Adhma Hospital (Hospital 601). It is requested that some of these personnel should be available for interview on Sunday 7 June 2015.	Not provided	—
4.	Reports on the disposal of the clothing that was removed from the casualties at the Dressing Station or the hospitals.	Not provided	—
5.	Access to review and copy the chest x-rays of a particular casualty listed and subsequently interviewed by the FFM (this individual's name was provided to the Syrian Arab Republic).	Not provided	—
6.	Access to review and copy medical laboratory analysis, blood test results and any related log books.	Not provided	—
7.	Photographs of the patient admission log at the mentioned hospitals.	Not provided	—
8.	Video footage (or links) corresponding to the events described.	Not provided	No additional information was provided other than that listed on Table 3

No.	Description of Information / Service	Provided on	Comments
9.	Clarification—in the form of a short written statement—of the reasons why the other casualties on the list for the alleged incident of 29 August 2014 could not be interviewed.	08/06/15	A list with names of soldiers who did not attend the interviews along with the reasons why

3.31 An analysis of the information gathered from the documents and services provided is can be found under the heading ‘Data Analysis Methodology Employed by the FFM’.

## SECOND DEPLOYMENT ACTIVITIES

3.32 As detailed in paragraph 3.13, the authorities of the Syrian Arab Republic informed the FFM Advance Team during its deployment in May 2015 that other, more recent incidents involving the alleged use of toxic chemicals had occurred in Syria. The Permanent Representation of the Syrian Arab Republic submitted to the OPCW Secretariat Note Verbale 41 (29 May 2015), Note Verbale 43 (3 June 2015), and Note Verbale 47 (15 June 2015) detailing these incidents.

3.33 The tables below summarise the information in Notes Verbales 41, 43, and 47.

**TABLE 5: SUMMARY OF ALLEGED INCIDENTS IN NOTE VERBALE 41**

No.	Date	Location	Number of Casualties
1.	19/03/2013	Khan Asal	144 (fatalities and injured)
2.	27/05/2013	Jober	11
3.	22/08/2013	Al-Bahriya	16
4.	24/08/2013	Jober	4
5.	August 2013	Muadamiyat al-Sham	No information provided
6.	24/04/2014	Dar'a - Nawa	70
7.	11/07/2014	Jober	6
8.	23/08/2014	Jober	11
9.	01/09/2014	Aleppo – Jam'iyat al-Zahraa quarters	5 civilians injured
10.	08/01/2015	Nubel and al-Zahraa	17
11.	January 2015	Jober	21
12.	15/02/2015	Darayya	8
13.	06/04/2015	Jober	4
<b>Total</b>	<b>13 separate incidents</b>	<b>8 locations (areas around Damascus and Aleppo)</b>	<b>317 casualties</b>

**TABLE 6: SUMMARY OF ALLEGED INCIDENTS IN NOTE VERBALE 43**

No.	Date	Location	Number of Casualties
1.	29/05/2015	Harasta	7 fatalities and 10 injured personnel.
2.	29/05/2015	Al-Tadhamun	6 fatalities
3.	31/05/2015	Salqeen city	N/A – Report of possession of toxic chemicals
<b>Total</b>	<b>3 separate incidents</b>	<b>3 locations</b>	<b>23 casualties</b>

**TABLE 7: SUMMARY OF ALLEGED INCIDENTS IN NOTE VERBALE 47  
AND ELABORATION OF 6 INCIDENTS REPORTED IN NOTE VERBALE 41**

No.	Date	Location	Number of Casualties	Comments
1.	15/02/2015	Darayya	8	A brief description of the alleged incident, signs and symptoms, a more precise location, the hospital where casualties received treatment, and the names of casualties (military personnel).
2.	08/01/2015	Nubel and al-Zahraa	Not mentioned	A brief description of the alleged incident, including signs and symptoms.
3.	06/04/2015	Jober	4	A brief description of the alleged incident, including signs and symptoms.
4.	January 2015	Jober	approx. 20	A brief description of the alleged incident, including signs and symptoms and mention of three fatalities.
5.	01/09/2014	Aleppo – Jam’iyyat al-Zahraa quarters	5 civilians injured (including one fatality)	A brief description of the alleged incident, including signs and symptoms, and mention of one fatality.
6.	24/04/2014	Dar’a - Nawa	70 fatalities	A brief description of the alleged incident.
<b>Total</b>	<b>6 separate incidents</b>	<b>5 locations (areas around Damascus, Dar’a and Allepo)</b>	<b>approx. 107 casualties</b>	<b>N/A</b>

3.34 In light of the severity of the allegations made in Notes Verbales 41, 43, and 47, the Director-General dispatched the FFM to the Syrian Arab Republic for a second investigative deployment. For this deployment, the FFM’s mandate was to gather facts related to the alleged incidents described in Notes Verbales 41, 43 and 47, in addition to Note Verbale 150.

3.35 The Secretariat sent a note verbale to the authorities of the Syrian Arab Republic (NV/ODG/198787/15, dated 30 June 2015) proposing the scope of the investigation for the FFM's second deployment. The FFM proposed to establish the facts on two additional alleged incidents that had reportedly taken place in 2014, and one in 2015, as indicated in Notes Verbales 150, 41, 43, and 47. As the availability of witnesses for interview was fluid in light of the security situation in the Syrian Arab Republic, the FFM sought confirmation from the authorities of the Syrian Arab Republic as to which witnesses would be available for interview prior to deployment. The FFM planned to use this information to select the incidents it would investigate once in country. Additionally, in order to ensure that the FFM team was able to perform its work efficiently within the 14-day time-frame agreed upon in the Terms of Reference, the FFM team suggested a maximum of 12 individuals to be interviewed per incident. These interviewees should, to the greatest extent possible, represent a cross-section of interviewee types, such as casualties, first responders, medical personnel, and eye witnesses.

3.36 In its second deployment to the Syrian Arab Republic, the FFM was composed of the mission team leader, seven team members, two medical doctors, and three interpreters. This deployment took place from 1 August 2015 to 16 August 2015. The FFM leadership provided a copy of its mandate (in English and Arabic) to the authorities of the Syrian Arab Republic at their first meeting on 3 August 2015.

#### **Investigative Activities**

3.37 As previously mentioned, the FFM proposed that the scope of its second deployment would include two alleged incidents reported to have taken place in 2014 and one in 2015, as indicated in Notes Verbales 150, 41, 43, and 47 (NV/ODG/198787/15, dated 30 June 2015). In order to prepare in an efficient and effective manner, the FFM requested that the authorities of the Syrian Arab Republic specify which alleged incidents could be investigated ahead of time. Information about the alleged incidents that could be investigated was provided to the FFM upon arrival in Damascus.

3.38 In this context, the following alleged incidents were investigated by the FFM during its second deployment:

- (a) An alleged incident in Al-Maliha on 16 April 2014
- (b) An alleged incident in Al-Maliha on 11 July 2014
- (c) An alleged incident in Al-Kabbas on 10 September 2014
- (d) An alleged incident in Nubel and al-Zahraa on 08 January 2015
- (e) An alleged incident in Darayya on 15 February 2015

3.39 In addition, the FFM asked to re-interview one casualty from the alleged incident of 29 August 2014 in Jober.

3.40 The Syrian Arab Republic also provided documents related to the following alleged incidents:

- (a) An alleged incident in Jober on 16 April 2014
- (b) An alleged incident in Al-Maliha on 2 July 2014
- (c) An alleged incident in Al-Maliha on 8 July 2014

- (d) An alleged incident in Darayya on 15 August 2014
- (e) An alleged incident in Jober on 4 September 2014
- (f) An alleged incident in Al-Kabbas on 18 September 2014

3.41 Furthermore, on 9 and 11 August 2015, the FFM requested another visit to Hospital 601. The aim of the visit was to obtain more information about patients who were admitted and related treatment protocols. This visit took place on 13 August 2015.

3.42 The FFM was also permitted to visit to the Centre for Studies and Scientific Research Institute in Barzi, Damascus, on 12 and 14 August 2015. The team received a site tour and had a discussion with the head of the research institute the storage and research methods for blood collected for AChE analysis. On 14 August 2015, the FFM sealed selected blood samples from the alleged incident in Darayya on 15 February 2015.

#### **Interviews: Methodology and Activities**

3.43 The interview methodology was the same as in the first deployment and is described in this report under the heading 'First Deployment Activities, The Main Body of the Fact-Finding Mission, Interviews: Methodology and Activities'.

3.44 In its letter detailing the proposed scope of the investigation for its second deployment, the FFM suggested that a maximum of 12 individuals be interviewed per alleged incident, and that two incidents reported to have taken place in 2014 and one in 2015 be investigated (NV/ODG/198787/15, dated 30 June 2015). Collecting the testimonies of a total of 36 interviewees meant ensuring that the FFM conducted its investigative activities in an efficient manner during the proposed time frame of the visit to the Syrian Arab Republic. In addition, the FFM requested that the interviewees for each incident represented a cross-section of casualties, first responders, medical personnel, and eye witnesses to the greatest extent possible.

3.45 The FFM's letter also pointed out that the FFM leadership would like to discuss and confirm which witnesses would be available for interview prior to the team's arrival in Damascus. This request envisaged allowing the team to prepare for the interviews ahead of time. Nonetheless, the FFM was aware of the possibility that the security situation in the Syrian Arab Republic might create restrictions on obtaining an advance list of interviewee names.

3.46 The FFM sent another note verbale requesting an opportunity to re-interview one casualty from the alleged incident in Jober on 29 August 2014 (NV/VER/CDB/199375/15, dated 30 July 2015). This request was made with a view to clarify points of the narrative of this particular incident, which had been the subject of investigation during the FFM's first deployment (see 'First Deployment Activities, The Main Body of the Fact-Finding Mission, Interviews: Methodology and Activities' for more details).

3.47 Information about the availability of individuals to be interviewed and the alleged incidents to which they were connected was provided to the FFM during the initial meetings in Damascus. The Syrian Arab Republic proposed additional incidents and interviewees to the FFM. This proposal was agreed upon, on condition of the completion of all of the interviews within the time frame specified in the Terms of Reference.

3.48 The interviews commenced on 8 August 2015.

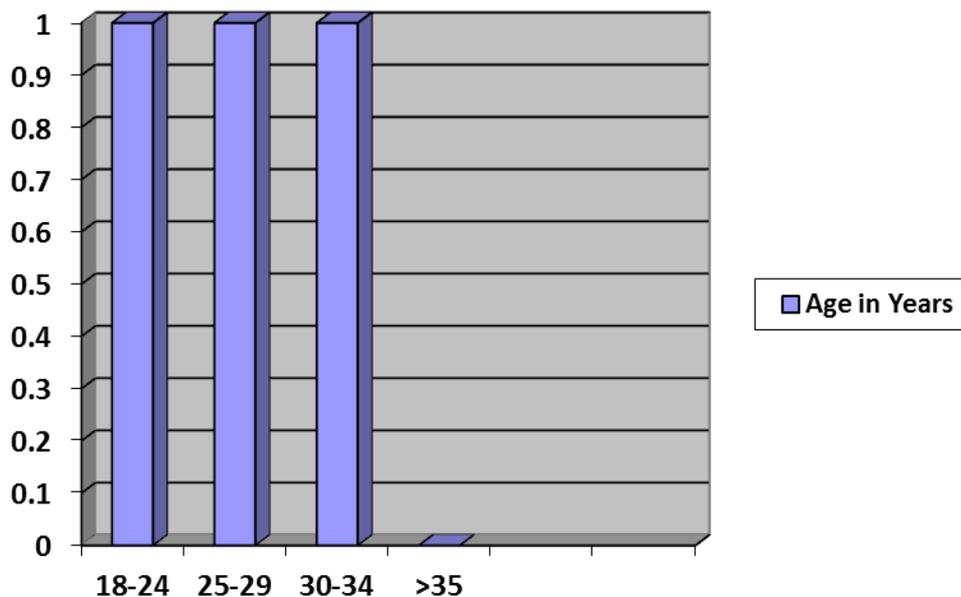
3.49 On 9 August 2015, after interviewing a number of casualties and medical staff, the FFM sent another request with a list of names of individuals to be interviewed. The requested individuals were medical staff relevant to the alleged incident in Darayya on 15 February 2015.

3.50 Tables 8 through 13 contain lists of interviews conducted for each alleged incident, as well as the reasons for selecting each individual for interview. In addition, Charts 3 through 9 detail the age and gender of each individual interviewed.

**TABLE 8: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 16 APRIL 2014**

S/N	Rank or Occupation of interviewed individual	Proximity to Incident in FFM Mandate	Date of interview
1.	Medic / Nurse	First aid point on ambulance	13/08/2015
2.	Captain	Casualty of the alleged incident	13/08/2015
3.	Lieutenant	Casualty of the alleged incident	13/08/2015

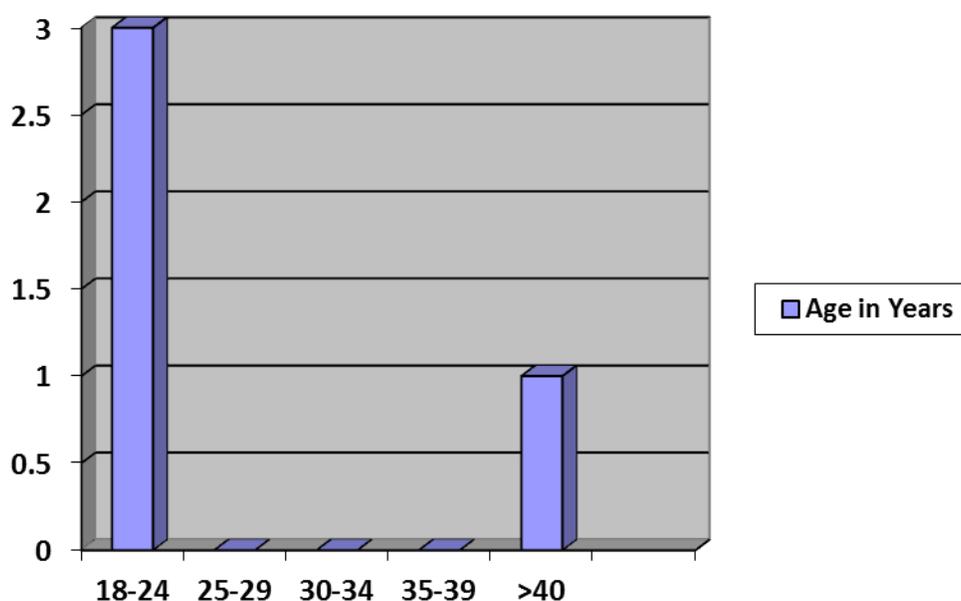
**CHART 3: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 16 APRIL 2014**



3.51 All of the witnesses interviewed in relation to the alleged incident in Al-Maliha on 16 April 2014 were male.

**TABLE 9: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 11 JULY 2014**

S/N	Rank or Occupation of interviewed individual	Proximity to Incident in FFM Mandate	Date of interview
1.	Military Personnel	Casualty of the alleged incident	13/08/2015
2.	Military Personnel	Casualty of the alleged incident	13/08/2015
3.	Military Personnel	Casualty of the alleged incident	13/08/2015
4.	Military Personnel	Casualty of the alleged incident	13/08/2015

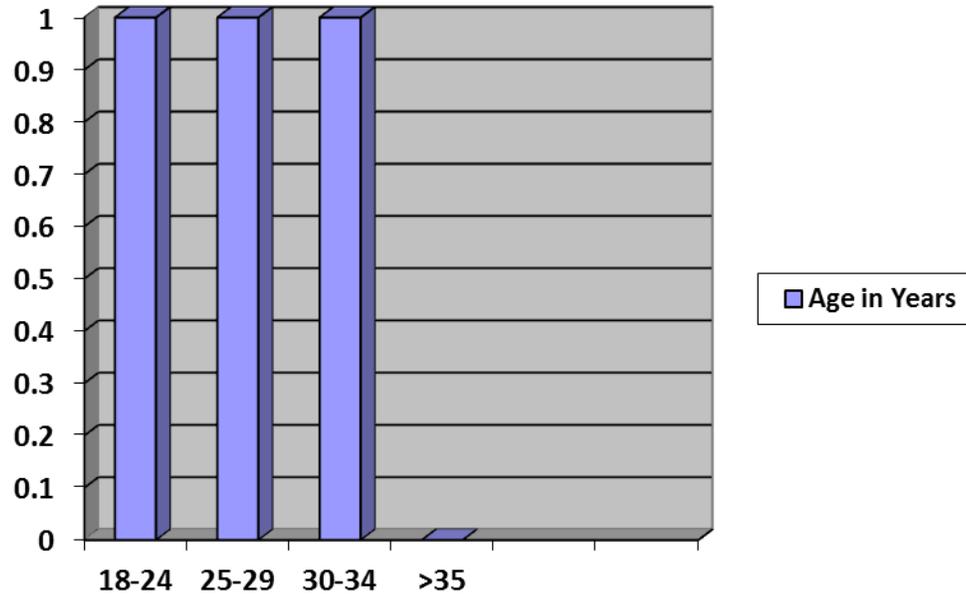
**CHART 4: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-MALIHA ON 11 JULY 2014**

3.52 All of the witnesses interviewed in relation to the alleged incident in Al-Maliha on 11 July 2014 were male.

**TABLE 10: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-KABBAS ON 10 SEPTEMBER 2014**

S/N	Rank or Occupation of interviewed individual	Proximity to Incident in FFM Mandate	Date of interview
1.	Military Personnel	Casualty of the alleged incident	13/08/2015
2.	Medic / Nurse	First aid point on ambulance	13/08/2015
3.	Military Personnel	Casualty of the alleged incident	13/08/2015

**CHART 5: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN AL-KABBAS ON 10 SEPTEMBER 2014**

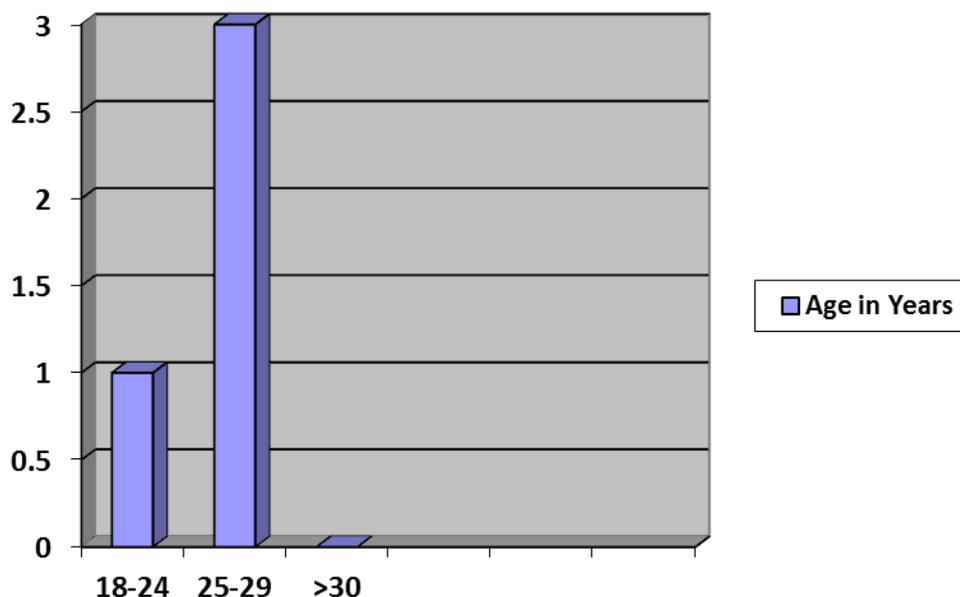


3.53 All of the witnesses interviewed in relation to the alleged incident in Al-Kabbas on 10 September 2014 were male.

**TABLE 11: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN NUBEL AND AL-ZAHRAA ON 8 JANUARY 2015**

S/N	Rank or Occupation of interviewed individual	Proximity to Incident in FFM Mandate	Date of interview
1.	Military medic	First Aid point - 150m	12/08/2015
2.	Civilian, local defence force	Casualty of the alleged incident	12/08/2015
3.	Civilian, local defence force	Casualty of the alleged incident	12/08/2015
4.	Civilian	Witness within visual range	12/08/2015

**CHART 6: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN NUBEL AND AL-ZAHRAA ON 8 JANUARY 2015**



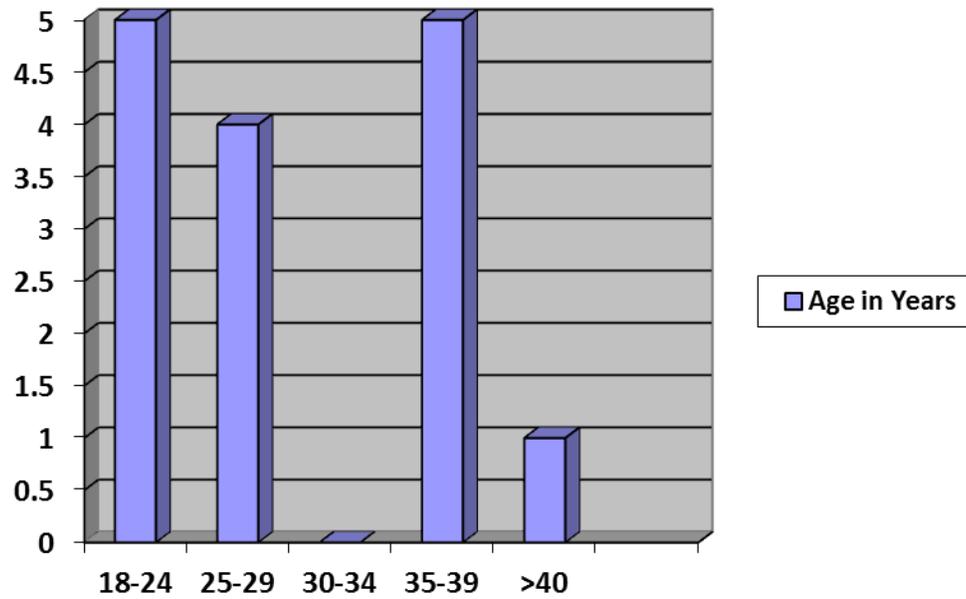
3.54 All of the witnesses interviewed in relation to the alleged incident in Nubel and al-Zahraa on 8 January 2015 were male.

**TABLE 12: INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN DARAYYA ON 15 FEBRUARY 2015**

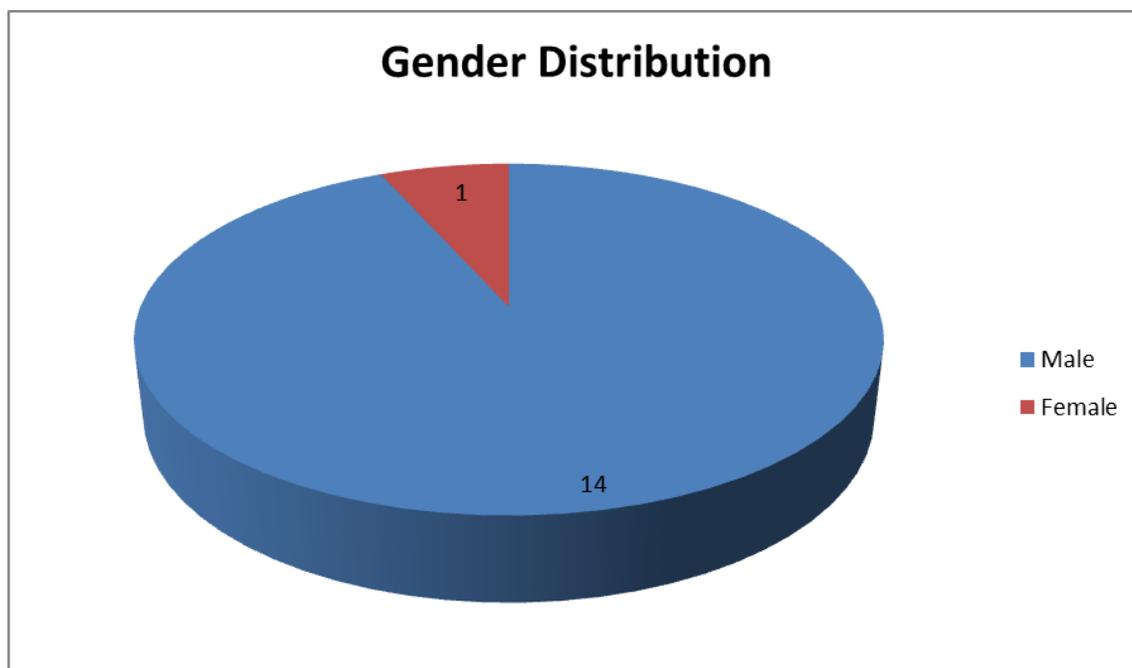
S/N	Rank or Occupation of interviewed individual	Proximity to Incident in FFM Mandate	Date of interview
1.	Military Personnel	Casualty of the alleged incident	08/08/2015
2.	Military Personnel	Casualty of the alleged incident	09/08/2015
3.	Military Personnel	Casualty of the alleged incident	08/08/2015
4.	Military Personnel	Casualty of the alleged incident	08/08/2015
5.	Military Personnel	Casualty of the alleged incident	09/08/2015
6.	Military Personnel	Casualty of the alleged incident	09/08/2015
7.	Military Personnel	Casualty of the alleged incident	08/08/2015
8.	Military Personnel / Physician	Field physician at medical point	09/08/2015
9.	Senior consultant / Physician	Physician at Hospital 601	11/08/2015
10.	Cardiologist / Physician	Physician at Hospital 601	10/08/2015
11.	Resident Physician	Physician at Hospital 601	10/08/2015
12.	Physician	Supervisor / Physician at Hospital 601	11/08/2015
13.	Nurse	Nurse at Hospital 601	11/08/2015
14.	Physician, Internal and Endocrine	Physician at Hospital 601	10/08/2015
15.	Nurse	Nurse at Hospital 601	10/08/2015

3.55 The gender and age distribution of the casualties and medical staff interviewed by the FFM related to this alleged incident are depicted in Chart 7.

**CHART 7: AGE DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN DARAYYA ON 15 FEBRUARY 2015**



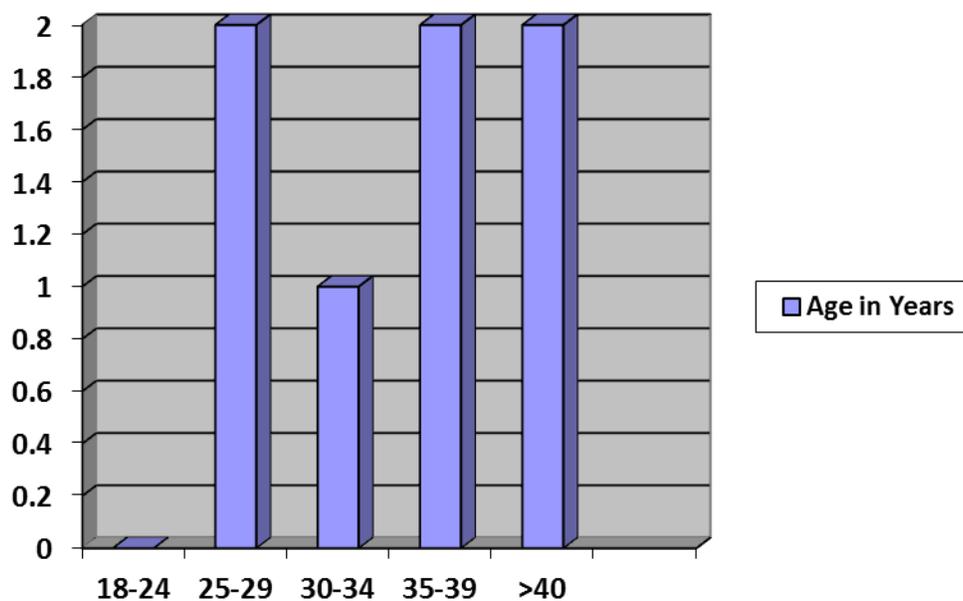
**CHART 8: GENDER DISTRIBUTION AMONG THE INDIVIDUALS INTERVIEWED IN RELATION TO THE ALLEGED INCIDENT IN DARAYYA ON 15 FEBRUARY 2015**



3.56 In addition, testimonies from medical staff connected to more than one alleged incident were collected by the FFM. The information about these interviews is summarised in Table 13.

**TABLE 13: OTHER INTERVIEWEES**

S/N	Rank or Occupation of interviewed individual	Proximity to Incident in FFM Mandate	Date of interview	Comments
1.	Chief Surgeon	Head of Maliha Area Civilian Hospital	11/08/2015	Reviewed patient cases from four incidents
2.	General Surgeon	Al-Radhi Civilian Hospital	11/08/2015	Received patients from four incidents
3.	General Surgeon	Jarramana Civilian Hospital	11/08/2015	Received patients from four incidents
4.	Nurse	Hospital 601	11/08/2015	No casualty contact
5.	Chief Nurse	Hospital 601	11/08/2015	No casualty contact
6.	Military Personnel / Physician	Field physician at medical point	09/08/2015	Witnessed two incidents
7.	Medic / Nurse	First aid point on ambulance	13/08/2015	Witnessed two incidents

**CHART 9: AGE DISTRIBUTION AMONG OTHER WITNESSES**

3.57 All of the witnesses in Table 13 were male.

#### **Request for Information and Services: Methodology and Activities**

3.58 The FFM reviewed the information available in Notes Verbales 150, 41, 43, and 47 related to the incidents involving the alleged use of toxic chemicals and produced a preliminary list of requests for information and services with a view to clarify and identify facts related to the alleged incidents.

3.59 This request for information and services to be provided to the FFM was submitted in a note verbale to the authorities of the Syrian Arab Republic (NV/ODG/198787/15, dated 30 June 2015). The correspondence specified that part of the information should be provided to the FFM prior to its deployment. Table 14 shows the list of requests made by the FFM, whether the request was to be provided prior to or during the FFM's deployment, the date when the request was met, and comments detailing what was provided. The contents of the documents provided by the Syrian Arab Republic were under review at the time at which this interim report was issued.

**TABLE 14: LIST OF REQUESTS MADE BY THE FACT-FINDING MISSION TO THE AUTHORITIES OF THE SYRIAN ARAB REPUBLIC, DATED 30 JUNE 2015**

No.	Description of Information / Service	Provided on	Comments
1.	Confirmed locations, including exact map coordinates, of all of the incidents reported in Notes Verbales 150, 41, 43, and 47. Requested to be provided to the FFM prior to its arrival in Damascus.	07/08/15	1xCD with images from Google Earth detailing key locations related to the alleged incident in Darayya (15/02/15).
		12/08/15	1xCD with images from Google Earth detailing key locations related to the alleged incident of Nubel and al-Zahraa (08/01/15).
		13/08/15	4xCDs with screenshots from Google Maps showing the locations of the following alleged incidents: <ul style="list-style-type: none"> <li>▪ Al-Maliha (16/04/14)</li> <li>▪ Al-Maliha (08/07/14)</li> <li>▪ Al-Maliha (11/07/14)</li> <li>▪ Al-Kabbas (10/09/14)</li> </ul>
2.	Arrange for access to contemporaneous incident reports and copies thereof from all parties involved and regarding all of the incidents reported in Notes Verbales 150, 41, 43, and 47.	07/08/15	A report from the commander of the unit deployed in Darayya on the date of the alleged incident on 15/02/15. Report not dated.
		12/08/15	A complaint about the incident registered with the Nubel police station and related to the alleged incident of Nubel and al-Zahraa on 08/01/15.
		13/08/15	A report of the Colonel in command of Administrative Unit 270, relating to the alleged incident in Mliha (16/04/14). Report not dated.
			A report from the Commander of Battalion 177, Mechanised Infantry, relating to the alleged incident in Al-Maliha (08/07/14). Report dated 11/08/2014.
			A report from the Colonel Commander of Battalion 177, Mechanised Infantry, relating to the alleged incident in Al-Maliha (11/07/14). Report dated 11/08/2014.
	A report from the Colonel in command of Battalion 408, Artillery, relating to the alleged incident of Al-Kabbas (10/09/14). Report dated 13/10/2014		

No.	Description of Information / Service	Provided on	Comments
3.	Arrange for access to and copies of any medical records, including patient history forms, treatment plans, x-ray images, prescription forms, discharge forms, or any other relevant information deemed necessary by the FFM, for all of the casualties named in Notes Verbales 150, 41, 43, and 47.	07/08/15	Medical records of 8 casualties listed in Note Verbale 47, relating to the alleged incident in Darayya (15/02/15)
07/08/15		AchE results for 6 casualties listed in Note Verbale 47, relating to the alleged incident in Darayya (15/02/15)	
10/08/15		Medical records of 7 casualties listed in Note Verbale 150.	
12/08/15		A report from the al-Zahraa hospital referring to the alleged incident in Nubel and al-Zahraa (08/01/15) (Notes Verbales 41 and 47).	
13/08/15		Medical records of 35 casualties listed in Note Verbale 150 AchE results (dated 21-23/04/14) for 14 casualties listed in Note Verbale 150	
4.	If safe to do so, arrange for visits to the hospitals or clinics in Damascus or any other locations where the casualties named in Notes Verbales 150, 41, 43, and 47 were treated.	13/08/15	Another visit to the hospital was arranged for the FFM.
5.	Arrange for access to and copies of shift logs and organisational charts of the hospitals, clinics, or other locations where casualties of the incidents reported in Notes Verbales 150, 41, 43, and 47 were treated.	N/A	—
6.	Identify and arrange for access to interview any persons involved in the incidents reported in Notes Verbales 150, 41, 43 and 47, as deemed appropriate by the FFM in accordance with previously agreed practice and protocol.	Various dates	Interviews were conducted as described in this report under the heading 'Deployment Activities, Investigation Activities, Interviews: Methodology and Activities'.
7.	Arrange access to any photographic materials or video recordings and copies thereof relating to the incidents reported in Notes Verbales 150, 41, 43, and 47. Requested to be provided to the FFM prior to its arrival in Damascus.	N/A	Not provided due to unavailability of the requested material.

No.	Description of Information / Service	Provided on	Comments
8.	If safe to do so, arrange access to any locations where remnants of any ordnance or forensic evidence retrieved from the sites related to incidents reported in Notes Verbales 150, 41, 43, and 47 may be located or stored.	N/A	Not provided due to the security situation.
9.	Arrange access to any other information or documentation relevant to the incidents reported in Notes Verbales 150, 41, 43, and 47. Requested to be provided to the FFM prior to its arrival in Damascus.	07/08/15	List of patients admitted to Hospital 601, relating to the alleged incident in Darayya (15/02/15)
		10/08/15	List of patients admitted to Hospital 601 relating to the alleged incident in Al-Kabbas (18/09/14)
		12/08/15	List of patients admitted to Hospital 601 for the following alleged incidents reported in Note Verbale 150: Jober (16/04/14), Al-Maliha (16/04/15), Al-Maliha (11/07/14), Darayya (15/08/14), Jober (04/09/14), Al-Kabbas (10/09/14), and Al-Kabbas (18/09/14).
		13/08/15	List of patients admitted to Al-Radhi hospital on the following dates: 16/04/14, the night between 16/04/14 and 17/04/14, 08/07/14, and 12/07/14
10.	Arrange access to and copies of any additional relevant documents or other information to be reviewed during the FFM. Requested to be provided to the FFM prior to its arrival in Damascus.	13/08/15	8xDVDs with video footage
		14/08/15	Pack of colour images of weapons
11.	Assist with any other matter that the FFM team deems relevant to its work during the course of the visit.	N/A	—

3.60 Next, based on the interviews with the witnesses and casualties of the various alleged incidents, the FFM submitted requests for additional information to the authorities of the Syrian Arab Republic. The requests aimed to clarify the various issues that were identified during the interviews and subsequent review of documents. A comprehensive list of requests made by the FFM during its deployment and the responses received from the authorities of the Syrian Arab Republic will be provided in a subsequent report.

## DATA ANALYSIS

### **Data Analysis Methodology Employed by the Fact-Finding Mission**

3.61 The FFM inspectors conducted an analysis of the alleged incidents, with a focus on identifying aspects related to the use of chemicals as a weapon. The analysis methodology used by the team to evaluate interviews and documents provided by the authorities of the Syrian Arab Republic is described in this report under the following headings: ‘Interview Analysis Methodology’ (paragraphs 3.64 – 3.67) and ‘Analysis of Information Provided to the Fact-Finding Mission in the Form of Documents and Services’.

3.62 The analysis of the medical information provided to the FFM in the form of records, services, or testimonies collected by the team was carried out by the medical doctors attached to the FFM and is described in Annex 1 to this report.

3.63 Both of the analyses specified in paragraphs 3.61 and 3.62 were taken into account to fulfil the FFM’s mandate.

### Interview Analysis Methodology

3.64 The interview analysis methodology employed by the FFM allowed individual accounts to be collated into a prevailing narrative where factual content could be extracted and reported according to the mandate. The various steps of this methodology are described in the next paragraphs.

3.65 First, the audio and video records of each interview conducted by the team were translated and transcribed into English by qualified interpreters in order to facilitate their thorough analysis.

3.66 Then, the verbal content of each interview (video, audio, and transcripts thereof) was carefully reviewed by at least two FFM inspectors. In order to organise the individual responses, a timeline-based analysis table was produced. This allowed each respondent’s description of locations, sights, sounds, smells, and actions to be categorised according to relevant variables. During the interview review process, the FFM inspectors matched the interviewees’ responses to their respective variables in the analysis table. The result for each interview was a unique description of the evolving, sequential event, from the perspective of that individual interviewee. Once all relevant narratives had been assembled individually, they were compared against one another to identify commonalities and discrepancies.

3.67 Commonalities formed the basis of the prevailing narrative and discrepancies were analysed to determine their significance. Given that some of the alleged incidents subject to investigation had occurred more than a year prior to the interviews, the FFM anticipated reasonable discrepancies in the recalled events from one respondent to the next. In cases where discrepancies were minor or of little consequence to establishing a prevailing narrative (i.e., the recollection of general timings and distances), they were disregarded. In cases where discrepancies were more significant, or where they starkly deviated from the prevailing narrative, they were noted and assessed further in the context of other evidence to see if they could be reconciled. If reconciliation with the prevailing narrative was not possible, the discrepant narrative could be considered limited in value and therefore difficult to objectively address the FFM’s mandate aims. However, cases where discrepant

narratives detailed other severe allegations in relation to the use of toxic chemicals as a weapon have also been noted by the FFM.

3.68 The following sections provide the analysis of the testimonies collected by the FFM and categorised by each alleged incident.

#### Analysis of Information Provided to the Fact-Finding Mission in the Form of Documents and Services

3.69 The information and services provided to the FFM by the authorities of the Syrian Arab Republic is listed in in this report under the headings 'First Deployment Activities, the Main Body of the Fact-Finding Mission, Interviews: Methodology and Activities', and 'Second Deployment Activities, Request for Information and Services: Methodology and Activities'. The FFM reviewed the information provided in order to gather facts regarding the incidents involving the alleged use of toxic chemicals. The analysis of the documents pertaining to each incident that was investigated is described in the sections below.

#### **Analysis of the Alleged Incident in Jober on 29 August 2014**

##### Interview Analysis

3.70 The prevailing narrative established by a review of all of the interviews relating to this alleged incident is as follows:

(a) It is apparent that some form of military engagement occurred on 29 August 2014 in the described area of Jober, Damascus. In this military engagement, a group of about 35 soldiers from the Syrian Arab Army were preparing to advance towards an area held by an opposition group.

(b) An alleged chemical incident occurred around 18:00. In this incident, a number of soldiers were proximate to two launched objects of an unknown type which landed in the street. Some of the soldiers were indoors, while others were outdoors.

(c) Upon the objects' impact, the soldiers noted some combination of dust, smoke, or mist, which produced a distinct odour described by most as being similar to rotting flesh.

(d) This unidentifiable malodorous substance triggered a host of varying symptoms, the overall presentation of which was consistent with acute, non-specific irritation of the mucosa and respiratory tract.

(e) The affected soldiers assisted one another in retreating from the impact area and received general supportive care at a forward medical point (Al-Abbassayyin) before being evacuated by ambulance to a military hospital some distance away (Hospital 601).

(f) In hospital, non-specific supportive care continued for the affected soldiers until discharge, which in most cases was within 24 hours of arrival. The general condition upon discharge varied considerably amongst the affected soldiers, although all reported improvement.

3.71 The FFM identified a notable discrepancy in the prevailing narrative referring to an additional alleged chemical incident. The main points of this discrepant narrative are approximately as follows:

(a) Two of the casualties interviewed by the FFM alleged that an incident involving a toxic chemical occurred around 16:00 on the same day.

(b) According to the testimonies of these two casualties, a group of around 15 soldiers of the Syrian Arab Army were confronting enemies in Jobar when a device allegedly filled with what was described by these two soldiers as a chlorine-like gas was thrown at the group.

(c) The alleged chemical incident incapacitated some of the group, apparently preventing them from escaping the scene and ultimately leading to their capture and execution.

(d) The two soldiers who were interviewed described symptoms upon contact with the alleged chemical that are consistent with acute, non-specific irritation of the mucosa and respiratory tract.

(e) There then followed a combat/fire fight with opposition groups that led to other fatalities and the capture of other members of the group.

(f) The two soldiers interviewed by the FFM were the only ones who managed to flee the scene.

3.72 The FFM was not able to identify a cohesive narrative based on the testimonies of these particular casualties. Additionally, the FFM could not corroborate this narrative with the prevailing narrative established by the analysis of the testimonies from the bulk of interviewees. The authorities of the Syrian Arab Republic did provide footage from an open source which purported to describe the aftermath of this incident (see Table 3, Number 7.). However, the FFM could not establish a firm link between this footage and the alleged incident.

3.73 The FFM sought further clarification regarding this alleged incident by requesting to re-interview a relevant witness during its second deployment. The FFM was not able to establish further facts regarding this alleged incident upon reviewing the testimony of the witness.

#### Analysis of Information Provided to the Fact-Finding Mission in the Form of Documents and Services

3.74 The information and services provided by the authorities of the Syrian Arab Republic assisted the FFM in clarifying the following:

(a) The document entitled “Report of Colonel Commander of Brigade 358 for Special Missions on the Exposure of a Group of Soldiers from the Brigade to the Inhalation of Toxic Gases” offered a brief description of the alleged incident that took place on 29 August 2014 in Jobar (referred to in Note Verbale 150). This document provided an overview of the incident. The information in the report included the mission assigned to the Brigade involved, the starting point, the location and number of explosions that occurred on this date, a description of the smell of the explosion (reported as chlorine-like, according to witnesses), a brief description of the device (a locally made device), the firing point of devices (according to the firing sound), the number of soldiers affected by two devices that exploded later on, the evacuation route taken by the soldiers, and brief mention of treatment, rest, and recuperation.

(b) The images from Google Earth® provided by the authorities of the Syrian Arab Republic detailing key locations related to the alleged incident in Jober on 29 August 2014 assisted the FFM in identifying the position of the casualties involved on the day of the event. The images point out locations where the soldiers were before, during and after the incident (see Annex 4).

(c) Medical records which are described in the Medical Report attached to this document.

3.75 The FFM is confident that it would have been able to establish facts related to this alleged incident in an independent and unambiguous manner if more information had been made available to the team complementing what was provided by the authorities of the Syrian Arab Republic. This information would also have been useful to corroborate the testimonies of the casualties and witnesses interviewed by the FFM. The FFM believes that a combination of the following items or information, which were not available for assessment by the FFM, would be crucial in establishing facts with a higher degree of confidence:

- (a) Photographic or video recordings of the alleged incident;
- (b) A visit to the site where the alleged incident took place;
- (c) Detailed medical records including, inter alia, x-rays, pulmonary function tests, and timely blood laboratory values. Further details are described in the Medical Report annexed to this report;
- (d) Timely biomedical samples from the patients;
- (e) Remnants of any ordnance, launching system, or other forensic evidence retrieved from the location of the alleged incident;
- (f) Unfired ordnance similar to what was used in the alleged incident;
- (g) Environmental samples from the surroundings of the location of the alleged incident, including background samples;
- (h) Comprehensive contemporaneous incident reports generated by the chain of military command and the medical system;
- (i) Comprehensive witness testimonies generated at the time of the incident; and
- (j) A greater sample of witness testimonies.

3.76 The authorities of the Syrian Arab Republic explained that these records or items were not available, either because they had never been generated, due to the long period of time that had passed since the alleged incident, or due to difficulties caused by the current security situation in the country.

3.77 Thus, it was not possible for the FFM to ascertain factual findings through the documentation and services provided prior to the interview process such as:

- (a) The nature of the alleged incident;
- (b) Whether any toxic chemical was used as a weapon in the incident;
- (c) The identification of a potential chemical, if any;
- (d) Actual timing of incidents;
- (e) A detailed visual and audible description of the explosions;

- (f) A detailed visual or olfactory description of any chemical clouds released by the explosions;
- (g) The type, format, or other technical details about the explosive devices;
- (h) Comprehensive descriptions of the signs and symptoms associated with potential exposure and the appropriate treatment;
- (i) A confirmed number of fatalities and associated autopsy reports; and
- (j) The fate of the explosive devices and any Explosive Ordnance Disposal (EOD) analysis.

#### **Analysis of the Alleged Incident in Al-Maliha on 16 April 2014**

3.78 The FFM was in the process of carrying out the analysis of this alleged incident at the time at which this interim report was issued.

#### **Analysis of the Alleged Incident in Al-Maliha on 11 July 2014**

3.79 The FFM was in the process of carrying out the analysis of this alleged incident at the time at which this interim report was issued.

#### **Analysis of the Alleged Incident in Al-Kabbas on 10 September 2014**

3.80 The FFM was in the process of carrying out the analysis of this alleged incident at the time at which this interim report was issued.

#### **Analysis of the Alleged Incident in Nubel and al-Zahraa on 8 January 2015**

3.81 The FFM was in the process of carrying out the analysis of this alleged incident at the time at which this interim report was issued.

#### **Analysis of the Alleged Incident in Darayya on 15 February 2015**

3.82 The FFM was in the process of carrying out the analysis of this alleged incident at the time at which this interim report was issued.

## **4. CONCLUSIONS**

### **FACT-FINDING MISSION: MANDATED AIMS**

*Gather facts regarding the incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon, as detailed in the correspondence No. 150, dated 15 December 2014, No. 41, dated 29 May 2015, No. 43, dated 3 June 2015, No. 47, dated 15 June 2015, received from the Syrian Arab Republic, mindful that the task of the FFM does not include the question of attributing responsibility for the alleged use.*

#### Alleged incident in Jober, Damascus, on 29 August 2014

4.1 The FFM is of the opinion that it would have been able to be more precise in its findings if further objective evidence, complementing what was provided by the authorities of the Syrian Arab Republic, had been made available to the team. The

FFM was not able to obtain hard evidence related to this incident, either because it was unavailable or because it was not generated in the first place. The lack of hard evidence precluded the FFM from gathering further facts in a definitive way. Evidence such as those listed below would have been crucial for the FFM in establishing facts with a higher degree of confidence:

- (a) Photographic or video recordings of the alleged incident;
- (b) A visit to the site where the alleged incident took place;
- (c) Detailed medical records including, inter alia, x-rays, pulmonary function tests, and timely blood laboratory values. Further details are described in the Medical Report annexed to this report;
- (d) Timely biomedical samples from the patients;
- (e) Remnants of any ordnance, launching system, or other forensic evidence retrieved from the location of the alleged incident;
- (f) Unfired ordnance similar to those used in the alleged incident;
- (g) Environmental samples from the surroundings of the location of the alleged incident, including background samples;
- (h) Comprehensive contemporaneous incident reports generated by the chain of military command and the medical system; and
- (i) Comprehensive witness testimonies generated at the time of the incident.

4.2 Such evidence would have also been valuable in corroborating the testimonies of the casualties and witnesses interviewed by the FFM.

4.3 Therefore, based only on the interviews that were carried out and the documents that were reviewed, the FFM is of the view that the soldiers who were interviewed may have been exposed to some type of non-persistent, airborne irritant secondary to the surface impact of two launched objects. However, based on the evidence presented by the Syrian Arab Republic, the medical records that have been reviewed and the prevailing narrative of all of the interviews, the FFM cannot confidently determine whether or not this potential irritant was produced by factors, including but not limited to:

- (a) A chemical payload contained in the launched objects;
- (b) A combustion product of a propellant;
- (c) The detonation of a conventional or improvised explosive device on a stored chemical already in-situ;
- (d) A mixture of detonation products with surface soil and dust; or
- (e) Some combination of all of the factors mentioned above.

4.4 Furthermore, the FFM is of the view that while the general clinical presentation of those affected in the incident is consistent with brief exposure to any number of chemicals or environmental insults, the visual and olfactory description of the potential irritant does not clearly implicate any specific chemical.

*Report to the Director-General upon conclusion of FFM Activities*

4.5 The FFM has concluded its activities as mandated by the Director-General for its first deployment and hereby submits this interim report for consideration.

**Fact-Finding Mission: Operational Instructions**

*The inspection team shall establish the facts pertaining to two incidents in 2014 and one incident in 2015, as detailed and reported in the correspondence No. 150, dated 15 December 2014, No. 41, dated 29 May 2015, No. 43, dated 3 June 2015 and No. 47, dated 15 June 2015, taking into consideration the availability of suitable interviewees, representing, to the fullest extent possible, a cross-section of casualties, which may include first responders, medical personnel, and eye witnesses.<sup>1</sup>*

*The inspection team is instructed to:*

*Review and analyse all available information pertaining to reported incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon;*

4.6 Information that was made available by the Syrian Arab Republic pertaining to the reported incidents involving the alleged use of toxic chemicals and that was reviewed and analysed by the FFM can be found in the following sections of this report:

(a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities; and

(b) Second Deployment Activities, Interviews: Methodology and Activities

*Collect testimonies from persons alleged to have been affected by the use of toxic chemicals, particularly chlorine, as a weapon, including those who underwent treatment, eye witnesses of the alleged use of toxic chemicals, particularly chlorine, medical personnel and other persons who have been treated or come into contact with persons who may have been affected by the alleged use of toxic chemicals, particularly chlorine;*

4.7 The methodology that the FFM employed and the activities it undertook in collecting testimonies from persons deemed relevant to the investigation into the alleged use of toxic chemicals, particularly chlorine, as a weapon, are found in the following sections of this report:

(a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities; and

(b) Deployment Activities, Investigation Activities, Interviews: Methodology and Activities.

4.8 In addition, details of the interview analysis methodology and the prevailing narrative of the testimonies obtained by the FFM are described in this report under the heading ‘Data Analysis Methodology Employed by the Fact-Finding Mission’.

*Where possible, and deemed necessary, carry out medical examinations, including autopsies, and collect biomedical samples of those alleged to have been affected;*

<sup>1</sup> The opening paragraph of the FFM’s Operational Instructions is applicable to the team’s second deployment.

4.9 The FFM did not carry out medical examinations, including autopsies, due to the passage of time since the alleged incidents.

4.10 Biomedical samples collected by the Syrian Arab Republic in relation to the alleged incident of 15 February 2015 in Darayya were retrieved by the FFM and sent for analysis at designated OPCW laboratories or certified laboratories. The analysis results were not available at the time at which this report was issued.

4.11 Biomedical samples for other incidents listed in the applicable notes verbales were not available to the FFM.

*If possible, visit the hospitals and other locations as deemed relevant to the conduct its investigations;*

4.12 The FFM visited the military hospital Martyr Youssef Al-Adhma on 27 May 2015 (see the section of this report under the heading ‘First Deployment Activities, Advance Team Activities’) and on 13 August 2015 (see the section of this report under the heading ‘Second Deployment Activities, Investigation Activities’). In addition, the FFM visited the Centre for Studies and Scientific Research Institute in Barzi, Damascus, on 12 and 14 August 2015 (see the section of this report under the heading ‘Second Deployment Activities, Investigation Activities’).

*Examine and, if possible, collect copies of, the hospital records including patient registers, treatment records, and any other relevant records, as deemed necessary;*

4.13 During its first deployment, the FFM received copies of medical record for victims They were reviewed, photographed, photocopied, documented as evidence, and analysed.

4.14 The FFM received various medical records and reports from Hospital 601 regarding the alleged incidents. Details about these records are provided in the Medical Report attached to this interim report.

*Examine and, if possible, collect copies of any other documentation and records deemed necessary;*

4.15 Documentation and records that the FFM deemed necessary for the investigation, the dates when said documentation was provided, and a brief description of contents can be found in the following sections of this report:

- (a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities; and
- (b) Second Deployment Activities, Interviews: Methodology and Activities.

4.16 In addition, the analysis of information relevant to each alleged incident investigated by the FFM is described in this report under the heading ‘Data Analysis’.

*Take photographs and examine, and if possible collect copies of video and telephone records*

4.17 The authorities of the Syrian Arab Republic provided copies of video and telephone records as described in the following sections of this report:

- (a) First Deployment Activities, the Main Body of the Fact-Finding Mission, Requests for Information and Services: Methodology and Activities;

(b) Second Deployment Activities, Interviews: Methodology and Activities; and

(c) Annex 7.

*If possible, and deemed necessary, physically examine and take samples from remnants of cylinders, containers, etc., alleged to have been used during the incidents under investigation*

4.18 As described in the sections of this report under the headings ‘First Deployment Activities, the Main Body of the Fact-Finding Mission’, ‘Requests for Information and Services: Methodology and Activities’, and ‘Second Deployment Activities, Interviews: Methodology and Activities’, cylinders, containers, etc., alleged to have been used during the incidents under investigation were not available during the mission. Therefore, the FFM did not examine or take samples from these items.

*If possible, and deemed necessary, collect environmental samples at the alleged points of incidents and surrounding areas*

4.19 Due to the prevailing security situation, the FFM did not make any visits to the sites of alleged incidents and therefore could not recover any environmental samples.

*Provide the Government of the Syrian Arab Republic with a duplicate or a portion of each environmental sample, if any, and, to the extent possible, a duplicate or portion of each of the bio-medical samples collected in the course of the Mission*

4.20 This item has yet to be determined and will be addressed in the next report.

*Cooperate fully with the relevant authorities of the Syrian Arab Republic with regard to all of the aspects of the Mission*

4.21 The FFM maintained constant communication with the relevant authorities of the Syrian Arab Republic throughout its mission and cooperated with them on all aspects.

*All activities of the FFM will be undertaken in accordance with the relevant Technical Secretariat procedures relating to the conduct of inspections during contingency operations, as applicable.*

4.22 The FFM performed its activities in observance of all applicable procedures related to contingency operations. A list of standard operating procedures and working instructions referred to by the FFM during its mission is referenced in Annex 8 of this report. In addition, the FFM maintained a list of deviations from standard procedures if certain procedures needed to be tailored to the FFM’s activities, and included the reasons for any modifications.

## 5. SIGNATURE

5.1 This Fact-Finding Mission report was submitted on 27 October 2015 in English.

[Signed]  
Steven Wallis  
Mission Leader

## **Annex 1**

### **MEDICAL REPORT ON THE ALLEGED USE OF CHEMICAL WEAPONS IN THE JOBER AREA OF DAMASCUS, SYRIAN ARAB REPUBLIC, ON THE 29TH OF AUGUST 2014**

#### **METHODOLOGICAL CONSIDERATIONS**

1. In its investigation of incidents of alleged use of chemical weapons against the Syrian Arab Republic military, the mission focused on a reported incident in the Jobber Area of Damascus on the 29th of August 2014. According to NV 150, this incident resulted in the treatment of 33 soldiers who collectively exhibited symptoms consistent with toxic or irritant inhalation. Interviews were conducted with 22 victims and 16 medical staff to elucidate further details and establish a clear narrative.
2. All information received, be it through witness statements, pictures, video, audio, patient records or other documentation, is recorded and registered for filing and archiving.
3. Methodology for interviews and documentation were consistent with well-established standard operating procedures (SOP's), developed and enforced by the OPCW and the WHO.

#### **ETHICAL ISSUES AND CONSIDERATIONS**

4. In conducting the interviews, full consideration was given to the privacy and protection of participants. All information gathered from interviews was kept confidential with the identity of each interviewee protected at all times. An identity number was assigned to each participant and this number was used for processing of data. The mission made all efforts to respect religious values and norms, national customs and the personal pressures and traumas associated with exposure to conflict.

#### **COMPOSITION OF INTERVIEWEES**

5. The 22 alleged victims presented by the Syrian National Authority to participate in the interviews had all been among the group of soldiers involved in an attack in the Jobber Area of Damascus at around 6 pm on the 29th of August 2014. The average age was 25, with a range of 19 to 33. All were male and all were Syrian nationals of Arabic descent.
6. 8 treating physicians, 6 nurses, 1 medical assistant and 1 first responder were also interviewed; the majority of whom had participated in the care of the soldiers at the Martyr Yusuf Al Azama Hospital, also referred to as Hospital 601. Some medical interviewees had been stationed at al Abbassiyin Hospital, a minimally equipped facility located in Jobber where a number of soldiers received first aid and basic decontamination before being transported to the Hospital 601.

## DETAILED INTERVIEWS WITH SOLDIERS

7. Interviews were conducted in two private rooms at the Sheraton Hotel in Damascus and were, in most cases, video and audio recorded. One interviewee did not accept video recording but accepted audio recording, one interviewee did not accept video or audio recording, but agreed to a written transcription facilitated by an interpreter.

8. The interviews followed a semi-structured format and aimed to extract a 'free recall' narrative of the events and their timeline, as well as details of actions taken by the individuals following impact, symptoms following exposure and the resulting actions and treatments performed by others. Recovery and possible long term effects were also discussed. Since some victims reported having fallen unconscious directly after the impact, the interview process was adapted to fit each perspective and extract the most pertinent information from each interviewee.

9. All soldiers reported a situation wherein they were attacked by two launched explosive devices whose impact produced a very bad smell. All 22 soldiers developed symptoms (see the chart below) with very short onset and varying degrees of severity. The victims who were exposed all recall that the gas had a particular odour which some compared to the smell of dead animals or corpses and others reported as similar to rotten eggs. Still others reported that they had never experienced anything similar before and couldn't compare the smell to anything.

10. About 1/3 of the victims lost consciousness on the site and can't recall how they were taken to the first-aid medical point or hospital. Others report that they were taken by military vehicles to al Abbasiyin Hospital where some received a quick decontamination with water before being transported to Hospital 601 in an ambulance.

11. In Hospital 601 most reported being more thoroughly decontaminated with water and being given new clothes before receiving symptomatic treatment with oxygen, intravenous fluids and in some cases inhalation of  $\beta_2$  agonists such as salbutamol.

12. All admitted soldiers stayed at least one night in hospital, with 50% reporting that they stayed more than one night before being discharged to their unit with orders to rest for a number of days. None reported any significant symptoms from the incident to the present day.

## INTERVIEWS WITH MEDICAL STAFF

13. The interviews with treating physicians, nurses and first responders also followed a semi-structured format that built upon a 'free recall' wherein each interviewee relayed their specific memory of the event. Points for clarification followed the free recall and were aimed primarily at collecting information on observed symptoms, treatment provided and subsequent clinical progress. Particular focus was also on the presence or absence of secondary contamination from soldier to caregiver at any point during the rendering of first-aid, transport or definitive treatment in hospital.

14. Each were asked to describe the symptoms exhibited by the patients, either in transit (in cases of transporting medical staff) or on arrival to the Hospital 601 ED

(see the chart below) as well as the development of these symptoms and the actions taken during evacuation and at the hospital. None of the medical staff interviewed reported noticing any particular smell from the victims and none reported any symptoms of secondary contamination.

15. Interviews with medical staff at the Hospital 601 revealed that the decontamination via removal of clothing and showering commenced before anyone was brought into the emergency department (ED). In the ED the patients received symptomatic treatment and then they were taken to different wards in the hospital where they all recovered quickly and were discharged on the following day or in some cases two days later.

## **REVIEW OF MEDICAL RECORDS**

16. Medical records were presented to the FFM for a majority of the patients who came to be interviewed (19 out of 22). In most cases, records were received some days in advance which allowed for translation, copying for review and documentation.

17. These records were reviewed for demographics, clinical presentation, treatment, and admission duration and discharge status. The medical records were all very short, consisting of a bi-folded sheet of cardstock with a stapled addendum.

18. The submitted records were also reviewed during interviews with specific medical personnel when clarification was needed. A log book from the emergency department at Hospital 601 covering the patients treated on the 29th of August 2014 was also presented and documented by the FFM team.

19. In support of the presented symptoms during interviews a particular interest to the mission doctors were objective diagnostic information such as:

- (a) Radiological reports (CT, MRI and X-ray)
- (b) Pulmonary function test (PFT) results
- (c) Laboratory analysis of blood, skin, sputum, urine, etc.

20. The records indicate that patients received symptomatic treatments such as:

- (a) Oxygen,
- (b) Nebulized salbutamol,
- (c) Intravenous fluids (NaCl 0,9%),
- (d) Intravenous hydrocortisone (corticosteroid),
- (e) Intravenous metoclopramide (antiemetic)

(f) An unidentified antihistamine which was referred to in the record, but whose specific name could not be translated.

21. In the medical records no information was found about laboratory tests, pulmonary function tests or x-ray results.

## SYMPTOMS

22. In general, the symptoms described by the soldiers and those observed by the medical personnel are largely consistent and can be described as the following:

- (a) Breathing difficulties 91%
- (b) Burning sensation in the eyes, blurred vision and lacrimation 77%
- (c) Nausea and vomiting 64%
- (d) Reduced consciousness 50%
- (e) Fatigue 35%
- (f) Excessive salivation / drooling 25%
- (g) Dry mouth 18%

23. For a full report on symptoms described by victims, medical personnel, first responders and medical records see table below.

24. According to the bulk of interviewee recollections, the described symptoms occurred within a minute of exposure to an unknown gas having what was widely described as a 'very unpleasant' smell. Severity of reported symptoms appeared to be higher among those closest to the point where the reported munitions impacted the ground and the observed odour was produced.

25. For all soldiers taken to the hospital the Recovery was very fast, most spending only one night in hospital for observation and supportive care. Some were granted several days leave upon discharge and all returned back to their units. None of the soldiers reported having been informed of a specific diagnosis upon discharge, none were prescribed any course of medication and none received any specific, post-exposure follow up instructions or tests.

26. Neither in interviews nor in medical records were any reports of foul smells emanating from the exposed, nor were there any reports of signs of secondary contamination among those who assisted or transported the victims.

## COMPARISON OF RECORDS AND INTERVIEWS

27. Medical records were all quite repetitious in their description of symptoms and treatment. There is a significant discrepancy between the signs documented in the medical records, the signs recalled by medical staff and the symptoms recalled by the victims. The table below highlights the differences between these sources.

**Symptoms as documented and described during the interview process by percent:**

<b>Symptoms</b>	<b>Symptoms Documented in Medical records</b>	<b>Symptoms Described by Victims During Interview</b>	<b>Symptoms Described by Medical staff During Interview</b>
<b>Tightness in chest</b>	53	50	19
<b>Dyspnoea, shortness of breath</b>	32	41	58
<b>Coughing</b>	5	14	6
<b>Excessive salivation</b>	32	23	56
<b>Running nose</b>	21	36	12
<b>Burning sensation in the eyes</b>	89	64	62
<b>Blurred vision</b>	58	45	25
<b>Lacrimation</b>	42	54	38
<b>Nausea</b>	63	41	12
<b>Vomiting</b>	10	27	12
<b>Fatigue</b>	42	23	25
<b>Headache</b>	10	0	0
<b>Dizziness</b>	5	9	0
<b>Disorientation</b>	0	9	56
<b>Loss of consciousness</b>	0	36	12
<b>Dry mouth</b>	0	18	0

Airway symptoms

28. Interviewees reported different severities of breathing problems. Despite this no patient was in need of intubation or any other advance airway support. No patient was taken to the intensive care unit. As for the very specific symptom “Excessive salivation” only 25% of the victims recall that they suffered from salivation and 18% claim that they were suffering from dry mouth, at the same time more than 50% of the medical staff recalls that the patients salivated excessively. This discrepancy is hard to explain.

Consciousness

29. While a considerable number of victims and medical personnel described symptoms like disorientation and loss of consciousness, these symptoms are not documented in the medical records. The medical personnel interviewed described many of the patients as disoriented and aggressive, while the medical records state that they were awake and responsive. The discrepancy between the victim’s description of their status, the medical personnel’s description of the patients’ status and the medical records may indicate that there is a significant degree of amnesia

among the alleged victims, or may challenge the reliability of the records themselves.

#### Recovery

30. For all alleged victims taken to the hospital the recovery was very fast. According to the written medical records, all patients were discharged back to their units after a 24 hour admission. This introduces a discrepancy between the story provided by the soldiers wherein 50% of them report a hospitalization of two nights or more. It is unclear why the two sources of information do not agree.

#### Tests

31. Many of the interviewed soldiers and medical personnel recalled that objective medical tests such as blood sampling and chest x-rays were performed on the patients admitted to Hospital 601 on August 29th 2014. Nevertheless, none of the medical records submitted by the Syrian National Authority contained the results of any such diagnostic procedures. This significantly limits our ability to link the clinical picture presented by the patients, to the treatments delivered by the medical personnel, and ultimately, to compare all such findings to those expected after an exposure to a toxic chemical.

32. It is understood that Hospital 601 is operating under crisis conditions, and a sudden influx of a great number of patients displaying these symptoms may have complicated the process of documenting accurately. It must also be taken into consideration that the interviews were performed several months after the incident. In either case, the discrepancy complicates the fact-finding process and prevents the formulation of a confident clinical picture.

33. While it is not our aim to critique possible errors on behalf of fellow medical professionals, such inconsistencies are difficult to overlook when trying to establish a confident, scientifically valid, medical conclusion regarding the possible use of a toxic industrial chemical as a weapon.

### **CONCLUSION**

34. The combined narratives relayed during the interviews suggest that there was an incident in Jobar, Damascus on the 29th of August 2014 at about 6 pm. At that time, a group of approximately 33 Syrian Arab Republic soldiers were in proximity to the impact point of two launched objects which landed within a few minutes of one another. It is possible that upon impact, some kind of airborne irritant was produced which affected those standing close to the points of impact. The irritant appears to have produced significant and varied symptoms. The noted symptoms developed without delay but the effects had a short duration and resolved without antidotes or specific treatments. The described irritant had a very bad smell that most victims either did not recognize sufficiently to describe or were described as the smell of rotten bodies, dead animals, corpses and rotten eggs.

35. Since the incident took place nine months before the mission started, no bio-medical samples were taken and it's therefore very hard to establish which agent could have produced this combined olfactory signature, but some suggestions can be made from the described symptoms. One point that becomes clear when considering

the total composition of interviews and medical records is that the substance affecting the soldiers on August 29th 2014 was not likely chlorine.

**List of chemicals and the probability analysis:**

<b>Substance</b>	Diborane	Hydrogen Fluoride	Boron Trifluoride	Hydrogen sulphide	Ammonia	Phosgene	Sulphur dioxide	Formaldehyde	Hydrogen bromide	Boron Trichloride	Organophosphate	Chlorine
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36. The table of substances has been created in consideration of:

- (a) Symptoms
- (b) Onset and the duration of symptoms
- (c) The need of specific antidotes or other specific treatments
- (d) The appearance and the smell of the gas as described
- (e) Secondary contamination
- (f) Long term effects

37. According to the description provided by the soldiers the devices which released the chemical substance were detonated outside which indicates that the substance must be highly toxic in order to obtain the concentration needed to cause these dramatic symptoms.

38. As for chlorine, it has a well-known smell recognizable at very low concentration (0,1 - 0,3 ppm) and should most likely have been identified by some of the victims. Neither are the symptoms those of chlorine exposure.

39. As for sarin (GB) or other organic phosphoric compounds (OPs), the smell would not be consistent with the unpleasant signature of rotting corpses or eggs, since the smell of sarin is most frequently described as a sweet smell of apple or pear. The symptoms would likewise be different and there would almost certainly be secondary contamination among first responders and medical staff. Finally, the victims would be affected far more severely and for a much longer duration if exposed to sarin or other OPs especially if no specific antidote was given.

40. Of particular interest is the possibility of the soldiers having been exposed to diBorane, which in addition to being traditionally used as a rocket propellant, in the electronic industries and is also used in the vulcanization of rubber, making it both relevant to the interests of a militarized non-state actor, and also readily available in the region. It is a substance which could be causative of most of the presented symptoms and is associated with a rapid recovery without any antidotes or specific

treatments when patients are removed to fresh air. While diBorane is highly toxic, it is non-persistent, volatile and would not likely cause secondary contamination.

41. As far as the olfactory signature is concerned, the smell of diBorane is described in research literature as having a repulsive, sickly sweet odour which could very well be compared to the smell of rotting dead bodies.

42. Our list of potential chemical agents is presented for reference and consideration but should not be considered a conclusion, as the objective evidence required to reach confidence is lacking in this case. With respect to the questions proposed in the mandate, it is the opinion of the mission that the substance most likely attributable to the clinical presentations described in the interviews and records is not chlorine or sarin.

43. This medical report is hereby submitted on 29 June 2015.

Annex 2

EXTRACT FROM INTERVIEW ANALYSIS (JOBBER INCIDENT — 29 AUGUST 2014)

Interview Compilation Table FFM-Bravo					
DCN:		Substantive Responses (Out of 20)	Prevailing Narrative	Narrative Departures	Corroboration of Other Sources
Interviewee Role					
Pre-Incident					
Description of:	Task objective	19 (95%)	Prior to the event, the unit was either advancing or preparing to advance on a building or group of buildings held by an opposition group.	While references to a 'soap factory' were common, there was some disagreement with respect to how this factory figured into the operation. Some respondents noted it as an inconsequential landmark, others describe it as the unit's point of origin (U8)(S8)(O10), others described it as an obstacle they had to navigate around while en route (P9)(R10), and still others describe it as the objective itself (F7)(I8).	N/A
	Starting point	20 (100%)	There is near consensus that the operation began in Jobar, in the vicinity of the 'soap factory' and some 'Arabic style houses' of varying size.	Described distance from the soap factory at the outset of the operation varied from 30m (T8) to 300m (E8), with multiple variants. Some ambiguity noted as to whether or not the Arabic style houses were the target, or whether they were just part of the landscape (Q9).	Multiple image files on CD1 supplied by SAR indicate the soap factory at or near 30°N 36 19'E, however open source maps label the same structure as a 'meat market'. Another structure adjacent to this meat market may be the actual soap factory but no open sources can confirm this.
	Direction of Travel	10 (50%)	The most common direction noted was 'east', though most respondents did not relay any specific direction. The most prevalent general term was 'toward the target', though whether this was house to house (Y9), across a street (U9)(N9) or on the other side of the soap factory (P9) is not clear.	While there were a variety of movement descriptions (i.e. 'across the street vs. house to house') such variations may or may not be inconsistencies. This is difficult to determine without a physical picture of the incident area.	N/A
	Method of Travel	13 (65%)	A clear majority of respondents report moving on foot at the time of the incident, though some mention having arrived at the point of origin by vehicle.	None of note	N/A
	Group Composition	20 (100%)	The unit consisted of 30-35 men.	No departures on the total number, though the outlier soldier interviews.	The number of medical records submitted and the "Report of Commander: Brigade 358 - Special Units" match the prevailing narrative.
	Position of His Sub-Group	20 (100%)	The general picture is that of the 30-35 troops arranged in sub-groups (teams) of approximately 5-7 men per team. Responses indicate that some of the teams were inside buildings at the time of the incident and others were located around buildings or in the street (S11). The OIC of the unit places himself in the second floor of a building with two attendants, maintaining visibility on the area of operations (E12).	The combined responses create a complex picture that is difficult to clarify without precisely located buildings and streets, but this is not necessarily an inconsistency. Likewise, the tendency of multiple respondents describing themselves as having been in the "first group" (F12)(U12)(O24) or on the "front line" (J12) or "most advanced" (R12)(S12) supposes that each of these men was actually in the same, forward sub-group. While that is a difficult point to corroborate, it is not necessarily implausible. More challenging is the reconciliation of the OIC's description of his location (E12) vs. the several other descriptions of his location according to other interviewees (M12)(N12)(P12)(I11)(I20). The aforementioned suggests that the OIC was in a second floor observation position, while the others place him among the 30+ or with a sub-group.	N/A

## Annex 3

## LIST OF MATERIALS GATHERED DURING THE INTERVIEW PROCESS

No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items
1	01/06/2015	FFM/003/15/6181/032	20150601200001	Audio recording of interview	01 SD card
2			20150601200002	Video recording of interview	01 SD card
3			20150601200003	Drawing of alleged incident area (by interviewee)	01 page
4			20150601200004	Digital copy of medical records	01 SD card
5		FFM/003/15/6181/032	20150601200101	Audio recording of interview	01 SD card
6			20150601200102	Video recording of interview	01 SD card
7			20150601200103	Digital copy of medical records	01 SD card
8		FFM/003/15/6181/032	20150601200201	Audio recording of interview	01 SD card
9			20150601200202	Video recording of interview	01 SD card
10			20150601200203	Drawing of explosive (by interviewee)	01 page
11			20150601200204	Digital copy and hardcopy of medical record	01 SD card / 03 pages
12		FFM/003/15/6181/032	20150601200301	Audio recording of interview	01 SD card
13			20150601200302	Video recording of interview	01 SD card
14			20150601200303	Digital copy and hardcopy of medical record	01 SD card / 03 pages
15		FFM/003/15/6181/032	20150601200401	Audio recording of interview	01 SD card
16			20150601200402	Video recording of interview	01 SD card
17			20150601200403	Audio recording of interview	01 SD card
18			20150601200404	Digital copy of medical records	01 SD card
19	02/06/2015	FFM/003/15/6181/032	20150602200501	Audio recording of interview	01 SD card
20			20150602200502	Digital copy and hardcopy of medical record	01 SD card / 3 pages
21			20150602200503	Video recording of interview	01 SD card
22		FFM/003/15/6181/032	20150602200601	Video recording of interview	01 SD card
23			20150602200602	Audio recording of interview	01 SD card
24			20150602200603	Digital copy of medical records	01 SD card
25		FFM/003/15/6181/032	20150602200701	Drawing of map and object (by interviewee)	02 pages
26			20150602200702	Video recording of interview	01 SD card
27			20150602200703	Audio recording of interview	01 SD card
28			20150602200704	Digital copy of medical records	01 SD card

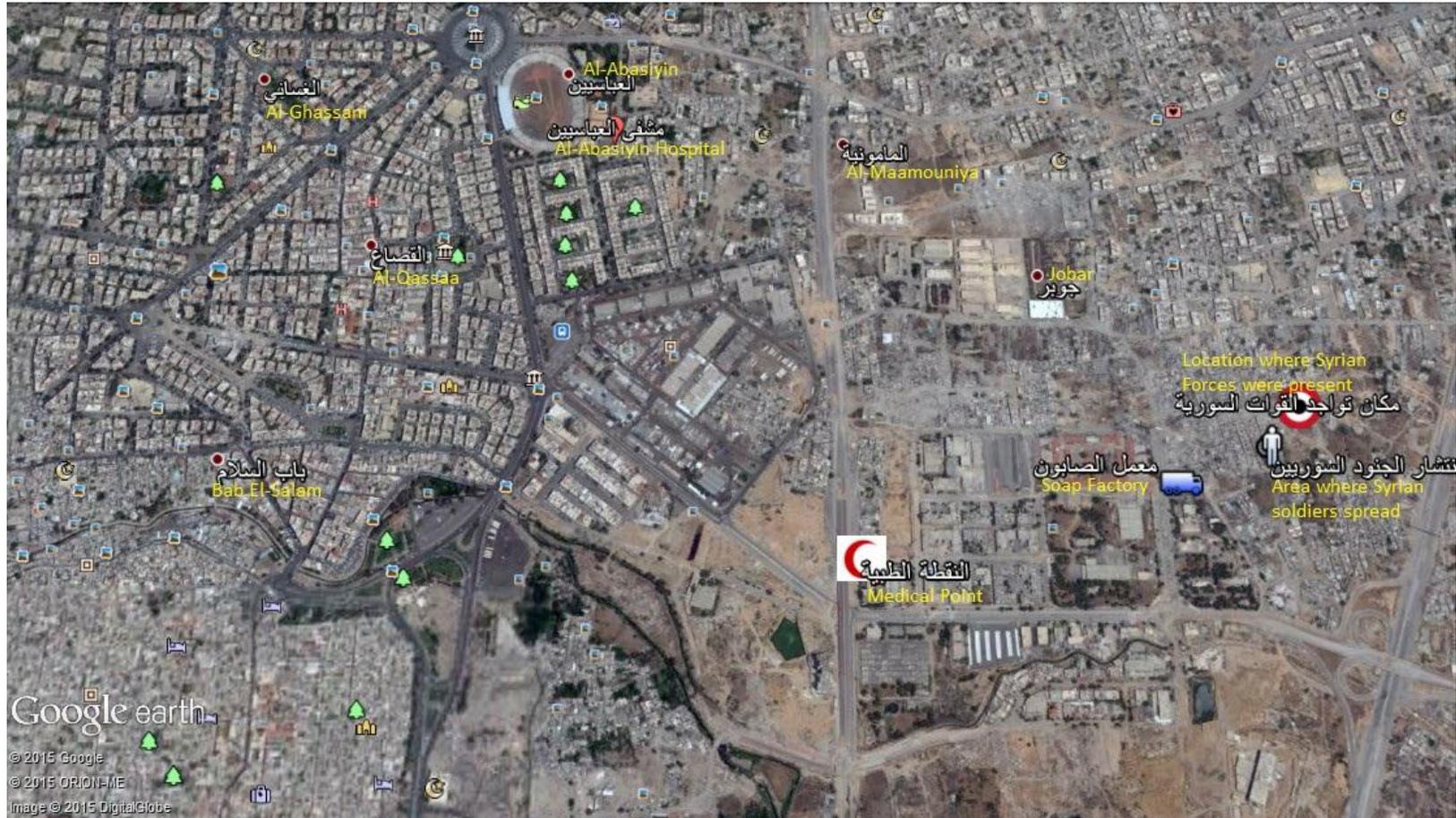
No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items
29		FFM/003/15/6181/032	20150602200801	Audio recording of interview	01 SD card
30			20150602200802	Video recording of interview	01 SD card
31			20150602200803	Digital copy and hardcopy of medical record	01 SD card / 3 pages
32	03/06/2015	FFM/003/15/6181/032	20150603200901	Audio recording of interview	01 SD card
33			20150603200902	Video recording of interview	01 SD card
34			20150603200903	Digital copy of medical records	01 SD card
35		FFM/003/15/6181/032	20150603201001	Audio recording of interview	01 SD card
36			20150603201002	Video recording of interview	01 SD card
37			06/06/2015	FFM/003/15/6181/032	20150606201101
38	20150606201102	Video recording of interview			01 SD card
39	20150606201103	Digital copy of medical records			01 SD card
40	FFM/003/15/6181/032	20150606201201		Audio recording of interview	01 SD card
41		20150606201202		Video recording of interview	01 SD card
42		20150606201203		Drawing/marketing of map (by interviewee)	04 pages
43	07/06/2015	FFM/003/15/6181/032	20150607201301	Video recording of interview	01 SD card
44			20150607201302	Audio recording of interview	01 SD card
45		FFM/003/15/6181/032	20150607201401	Audio recording of interview	01 SD card
46			20150607201402	Video recording of interview	01 SD card
47		FFM/003/15/6181/032	20150607201501	Video recording of interview	01 SD card
48			20150607201502	Audio recording of interview	01 SD card
49	08/06/2015	FFM/003/15/6181/032	20150608201601	Video recording of interview	01 SD card
50			20150608201602	Audio recording of interview	01 SD card
51		FFM/003/15/6181/032	20150608201701	Audio recording of interview	01 SD card
52			20150608201702	Video recording of interview	01 SD card
53	01/06/2015	FFM/003/15/6181/033	20150601400001	Drawing of map (by interviewee)	01 page
54			20150601400002	Audio recording of interview	01 SD card
55			20150601400003	Video recording of interview	01 SD card
56			20150601400004	Digital copy and hardcopy of medical record	1 SD / 03 pages
57		FFM/003/15/6181/033	20150601400101	Drawing of map (by interviewee)	02 pages
58			20150601400102	Audio recording of interview	01 SD card
59			20150601400103	Digital copy and hardcopy of medical record	01 SD card / 03 pages
60			20150601400104	Video recording of interview	01 SD card

No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items	
61	02/06/2015	FFM/003/15/6181/033	20150601400201	Drawing of map (by interviewee)	01 page	
62			20150601400202	Audio recording of interview	01 SD card	
63			20150601400203	Video recording of interview	01 SD card	
64			20150601400204	Digital copy and hardcopy of medical record	01 SD card / 03 pages	
65		FFM/003/15/6181/033	20150601400301	Drawing of map (by interviewee)	01 page	
66			20150601400302	Audio recording of interview	01 SD card	
67			20150601400303	Video recording of interview	01 SD card	
68	02/06/2015	FFM/003/15/6181/033	20150602400401	Audio recording of interview	01 SD card	
69			20150602400402	Video recording of interview	01 SD card	
70			20150602400403	Digital copy and hardcopy of medical record	03 pages / 1 SD card	
71		FFM/003/15/6181/033	20150602400501	Audio recording of interview	01 SD card	
72			20150602400502	Video recording of interview	01 SD card	
73			20150602400503	Digital copy of medical records	01 SD card	
74		FFM/003/15/6181/033	20150602400601	Video recording of interview (part 1)	01 SD card	
75			20150602400602	Audio recording of interview	01 SD card	
76			20150602400603	Digital copy of medical records	01 SD card / 3 pages	
77			20150602400604	Video recording of interview (part 2)	01 SD card	
78		FFM/003/15/6181/033	20150602400701	Written Statement of the witness	04 pages	
79			20150602400703	Digital copy of medical records	01 SD card	
80		FFM/003/15/6181/033	20150602400801	Audio recording of interview	01 SD card	
81			20150602400802	Video recording of interview (part 1)	01 SD card	
82			20150602400803	Digital copy of medical records	01 SD card	
83			20150602400804	Drawing of the alleged incident area (interviewee)	01 page	
84			20150602400805	Video recording of interview (part 2)	01 SD card	
85		03/06/2015	FFM/003/15/6181/033	20150603400901	Audio recording of interview	01 SD card
86				20150603400902	Video recording of interview	01 SD card
87				20150603400903	Digital copy of medical records	01 SD card
88	FFM/003/15/6181/033		20150603401001	Audio recording of interview	01 SD card	
89			20150603401002	Video recording of interview	01 SD card	
90	06/06/2015	FFM/003/15/6181/033	20150606401101	Video recording of interview	01 SD card	
91			20150606401102	Audio recording of interview	01 SD card	
92		FFM/003/15/6181/033	20150606401201	Video recording of interview	01 SD card	
93			20150606401202	Audio recording of interview	01 SD card	

No.	Date of origin	Document Control Number	Evidence Reference No.	Material Title	No. of pages/items
94		FFM/003/15/6181/033	20150606401301	Video recording of interview	01 SD card
95			20150606401302	Audio recording of interview	01 SD card
96		FFM/003/15/6181/033	20150606401401	Video recording of interview	01 SD card
97			20150606401402	Audio recording of interview	01 SD card
98	07/06/2015	FFM/003/15/6181/033	20150607401501	Video recording of interview	01 SD card
99			20150607401502	Audio recording of interview	01 SD card
100		FFM/003/15/6181/033	20150607401601	Video recording of interview	01 SD card
101			20150607401602	Audio recording of interview	01 SD card
102		FFM/003/15/6181/033	20150607401701	Video recording of interview	01 SD card
103			20150607401702	Audio recording of interview	01 SD card
104	08/06/2015	FFM/003/15/6181/033	20150608401801	Video recording of interview	01 SD card
105			20150608401802	Audio recording of interview	01 SD card
106		FFM/003/15/6181/033	20150608401901	Video recording of interview	01 SD card
107			20150608401902	Audio recording of interview	01 SD card

Annex 4

ONE IMAGE FROM THOSE PROVIDED BY SYRIAN ARAB REPUBLIC RELATED TO THE ALLEGED INCIDENT IN JOBAR ON 29 AUGUST 2014



**Annex 5****ADMINISTRATIVE DATA**

5.1 Name, precise location, address and geographical co-ordinates of the investigated area(s)

Damascus area, Syrian Arab Republic

5.2 Team Composition

First Deployment to Syrian Arab Republic — Advance Team

<b>No.</b>	<b>Function</b>	<b>Speciality</b>
1.	Steve Wallis, Team Leader	Advance Health and Safety Specialist Inspector
2.	Health and Safety Officer	Advance Health and Safety Specialist Inspector
3.	Chemical Demilitarisation Officer	Chemical Production Technologist
4.	Interview sub-team member, confidentiality Officer	Analytical Chemist Inspector

First Deployment to Syrian Arab Republic — the Main Body of the Fact-Finding Mission

<b>No.</b>	<b>Function</b>	<b>Speciality</b>
1.	Deputy Team Leader	Chemical Weapons Munition Specialist Inspector
2.	Interview sub-team member	Chemical Weapons Munition Specialist Inspector
3.	Interview sub-team member	Advance Health and Safety Specialist Inspector
4.	Interview sub-team member, evidence management officer	Analytical Chemist Inspector
5.	Interview sub-team member	Technical Expert, Medical Doctor
6.	Interview sub-team member	Technical Expert, Medical Doctor
7.	Interpreter	N/A
8.	Interpreter	N/A
9.	Interpreter	N/A

## Second Deployment to the Syrian Arab Republic

<b>No.</b>	<b>Function</b>	<b>Speciality</b>
1.	Steve Wallis, Team Leader	Inspector, Advance Health and Safety Specialist
2.	Deputy Team Leader	Inspector, Chemical Weapons Munitions Specialist
3.	Interview sub-team member, evidence management officer	Inspector, Analytical Chemist
4.	Interview sub-team member	Inspector, Advance Health and Safety Specialist
5.	Interview sub-team member	Inspector, Advance Health and Safety Specialist
6.	Interview sub-team member, confidentiality Officer	Inspector, Analytical Chemist
7.	Interview sub-team member	Inspector, Analytical Chemist
8.	Interview sub-team member, team Logistics Officer	Inspector, Chemical Weapons Munitions Specialist
9.	Interview sub-team member	Technical Expert, Medical Doctor
10.	Interview sub-team member	Technical Expert, Medical Doctor
11.	Interpreter	N/A
12.	Interpreter	N/A
13.	Interpreter	N/A

## Third Deployment to the Syrian Arab Republic

<b>No.</b>	<b>Function</b>	<b>Speciality</b>
1.	Team Leader	Inspector, Advance Health and Safety Specialist
2.	Deputy Team Leader	Inspector, Analytical Chemist
3.	Interpreter	N/A

**Annex 6****SEQUENCE OF EVENTS – DATES AND TIMES**

	<b>Event</b>	<b>Date</b>
a	Receipt of Note Verbale 150 by the OPCW Secretariat, providing information on incidents of the alleged use of chlorine as a weapon.	19/12/2014
b	Agreement on Terms of Reference for the OPCW Fact Finding Mission	10/03/2015
c	Appointment of FFM mission leader, deputy mission leader and mission team	24/03/2015
d	FFM received consent to deploy from Syrian Arab Republic	20/05/2015
e	Deployment of FFM Advance Team to Syrian Arab Republic	25/05/2015
f	Deployment of FFM Main Body to Syrian Arab Republic	29/05/2015
g	Receipt of Note Verbale 41 by the OPCW Secretariat, providing information on incidents of the alleged use of toxic chemicals as a weapon.	29/05/2015
h	Receipt of Note Verbale 43 by the OPCW Secretariat, providing information on incidents of the alleged use of toxic chemicals as a weapon.	03/06/2015
i	Return of FFM Main Body to OPCW head quarters	10/06/2015
j	Return of FFM Advance Team to OPCW head quarters	15/06/2015
k	Receipt of Note Verbale 47 by the OPCW Secretariat, providing information on incidents of the alleged use of toxic chemicals as a weapon.	15/06/2015
l	Second Deployment of FFM to Syrian Arab Republic	01/08/2015
m	Return of FFM to OPCW head quarters	16/08/2015
n	Third deployment of FFM to Syrian Arab Republic	13/10/2015
o	Return of FFM to OPCW head quarters	16/10/2015
p	Submission of FFM report	22/10/2015

## Annex 7

**LIST OF OTHER DOCUMENTS PROVIDED BY THE  
SYRIAN ARAB REPUBLIC**

<b>Description of Record</b>	<b>Provided On</b>	<b>Comments</b>
List of patients for interview	31/05/2015	Casualties from alleged incident in Jober 29/08/2014
Description of incident in Darayya on 22/12/2012	08/06/15	Description of an alleged incident which took place on 22/12/2012 in Darayya, which led to the death of seven soldiers after being exposed to a yellow gas.
Intercepted Telecommunication Message on the Attack Against Ghanto	08/06/15	Transcription of text messages related to arrival of chlorine barrels to the Ghanto village
Hamah Radio Conversation	08/06/15	Transcription of radio conversation dated 30/05/14 about attacking Al-Lataminah
Report from Ministry of Water Resources	08/06/15	Report on the theft of stolen equipment and chlorine drums from water pumping units.
Document about an individual belonging to the Al Nusra front	08/06/15	Biography and speech by an Al Nusra front individual
Articles and Media Reports on Chemicals in Syria	08/06/15	Various open source articles and news reports regarding chemical weapons in Syria and region
Video of various executions	12/08/2015	Unrelated to the FFM's investigation

## **Annex 8**

### **LIST OF REFERENCES**

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

QDOC/INS/SOP/IAU02 — Standard Operating Procedure Investigation of Alleged Use (IAU) Operations

QDOC/INS/WI/IAU01 — Work Instruction for Command Post Operations during an Investigation of Alleged use of Chemical Weapons

QDOC/INS/WI/IAU03 — Working Instruction for Reconnaissance and Search Operation during an Investigation of Alleged Use

QDOC/INS/WI/IAU04 — Work Instruction for the Collection of Biomedical Samples during an Investigation of Alleged Use

QDOC/INS/WI/IAU05 — Work Instruction for Conducting Interviews of Witnesses during an Investigation of Alleged Use

Manual of Confidentiality Procedure

**Enclosure IV****NOTE BY THE TECHNICAL SECRETARIAT OF THE  
ORGANIZATION FOR THE PROHIBITION OF  
CHEMICAL WEAPONS****REPORT OF THE OPCW FACT-FINDING MISSION IN SYRIA  
REGARDING ALLEGED INCIDENTS IN THE IDLIB  
GOVERNORATE OF THE SYRIAN ARAB REPUBLIC  
BETWEEN 16 MARCH AND 20 MAY 2015**

1. On 1 May 2015, the Director-General mandated the OPCW Fact-Finding Mission (FFM) in Syria to conduct an investigation into incidents of the alleged use of toxic chemicals, particularly chlorine, as a weapon in the Idlib Governorate of the Syrian Arab Republic from 16 March 2015 onwards, as reported in the media.
2. The report of the FFM is hereby circulated to the States Parties (Annex 2). It provides a detailed account of the work undertaken by the FFM and the process leading to the findings presented therein. The FFM has presented its conclusions that several incidents that occurred in the Idlib Governorate of the Syrian Arab Republic between 16 March 2015 and 20 May 2015 likely involved the use of one or more toxic chemicals — probably containing the element chlorine — as a weapon.
3. The work of the FFM has remained consistent with its mandate, which did not include the question of attributing responsibility for the alleged use.

## Annexes:

Annex 1: Cover Note by the Head of the OPCW Fact-Finding Mission in Syria

Annex 2: Report of the OPCW Fact-Finding Mission in Syria Regarding Alleged Incidents in the Idlib Governorate of the Syrian Arab Republic between 16 March and 20 May 2015

**Annex 1**

**COVER NOTE BY THE HEAD OF THE OPCW FACT-FINDING  
MISSION IN SYRIA**

20 October 2015

Director-General,

In accordance with the mandate of the Fact-Finding Mission (FFM) (mission code FFM/005/15, dated 1 May 2015), I submit herewith the report of the findings of the FFM.

Leonard Phillips  
Head of the FFM-Alpha

## Annex 2

**REPORT OF THE OPCW FACT-FINDING MISSION IN SYRIA  
REGARDING ALLEGED INCIDENTS IN THE IDLIB  
GOVERNORATE OF THE SYRIAN ARAB REPUBLIC  
BETWEEN 16 MARCH AND 20 MAY 2015**

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## 1. SUMMARY

1. Open-source media were examined and cross-referenced with other sources of information, including that obtained from non-governmental organisations (NGOs). This provided a credible basis for investigation, which resulted in a Fact-Finding Mission (FFM) being mandated (Appendix 1) to gather facts regarding incidents of alleged use of toxic chemicals as a weapon in the Idlib Governorate of the Syrian Arab Republic from 16 March 2015 onwards.

2. The FFM was led by and predominantly comprised inspectors, with support from various other divisions and branches within the Technical Secretariat (hereinafter “the Secretariat”). Interpreters were embedded in the team and were critical to the effective functioning of the mission. Furthermore, medical expertise was provided through the secondment of an external medical doctor to the team (Appendix 2).

3. The conclusions were derived from interviews and supplementary material submitted during the interview process. Additional input included media content and samples, which were used to corroborate each other as well as the information given in the interviews.

4. The inability of the team to, inter alia, visit the location shortly after the incident, review original records in situ, take its own samples, and totally control the selection of interviewees detracts from the strength of the conclusions that can be made by the FFM. However, sufficient facts were collected to conclude that incidents in the Syrian Arab Republic likely involved the use of one or more toxic chemicals — probably containing the element chlorine — as a weapon.

## 2. METHODOLOGY

### **Methodological considerations**

2.1 The three main driving principles in development of the team’s fact- and data-gathering methodology were to ensure that:

(a) a validated methodology is used for the acquisition and analysis of evidence to the maximum extent possible under the conditions of the mission;

(b) the personnel conducting the investigation have the appropriate skill sets and training; and

(c) the appropriate chain of custody procedures are applied to the collection of all evidence.

### **METHODOLOGY FOR THE ACQUISITION AND ANALYSIS OF EVIDENCE**

2.2 In conducting its work, the FFM complied with the current OPCW guidelines and procedures for the conduct of an investigation of alleged use (IAU) of chemical weapons (see Appendix 4).

2.3 The FFM also adhered to the most stringent protocols available, using both objective criteria and standard questionnaires for such an investigation, as set out in

the relevant quality measurement system documents (QDOCs). As these questionnaires were specifically designed for IAUs, occasionally slight modifications were required. Authority for such flexibility to make modifications is expressly provided for in the OPCW procedures. Additionally, any modifications were minor and were carried out in consultation with the Office of the Legal Adviser and the Office of the Director-General.

2.4 The major challenges of the investigation centred predominantly on the open nature of the allegations in technical, geographical and chronological terms, and on evidential sources in terms of relevance, validity, and authenticity.

2.5 The prioritisation of evidence was based on relevance in accordance with the guidance provided in the OPCW procedures, and re-evaluated according to the degree of separation in the chain of custody between the source and receipt by the team. Types of evidence were then defined as primary, secondary, or tertiary, in descending order of value.

2.6 The most relevant methods for collecting and evaluating the credibility of information included the following, inter alia: research into the incidents and existing reports; the assessment and corroboration of background information; the conduct of interviews with relevant witnesses, responders, medical treatment providers, and alleged victims; the review of documentation and records provided by interviewees; the assessment of the symptoms of victims as reported by interviewees; the receipt of environmental samples for subsequent analysis; and the documentation and analysis of the alleged subcomponents of munitions received by the team.

2.7 In accordance with the OPCW procedures, the FFM considered the following: first-hand testimony from interviews as primary evidence; documentation, photographs, and video and audio recordings presented by the interviewees as secondary evidence; and samples provided by the interviewees, in addition to open-source information, as supporting information. The ascribed values take into consideration the consistent corroboration between interviewee testimony, open-source research, documents and other records as provided by interviewees, and the characteristics of the samples provided. No metadata forensic analysis was carried out on the electronic records provided by the witnesses.

2.8 During the preparatory phase, the team engaged in extensive open-source research concerning the allegations (see Appendix 5). The majority of sources included news media, blogs, and websites of various NGOs, including civil defence units. While there were many different alleged incidents indicated by these sources, there was a concentration of events from mid- to late March 2015 in the area to the east of Idlib City, particularly in the villages of Sarmin, Qmenas, Binnish, and Al-Nerab, as well as in Idlib City itself. For this reason, the team focused on this area in both its ongoing open-source preparations and in identifying suitable organisations and bodies with which to work.

2.9 During consultations in March and May, and later again in July 2015 (letters L/ODG/1972239/15 dated 7 April 2015 and L/ODG/197860/15 dated 13 May 2015), the Secretariat also requested that the Syrian Arab Republic provide any information it might have that could be relevant to the investigation. Representatives of the Syrian Arab Republic indicated during the first two meetings that, at that time, they were not in a position to be able to provide significant evidence regarding the

allegations, but that they categorically refuted them. However, during the July consultations, the representatives of the Syrian Arab Republic indicated that a number of displaced individuals from the area were available to be interviewed and that the representatives would facilitate the interviews in Damascus. The Syrian Arab Republic forwarded Note Verbale 56 containing Letter No. 158 (classified OPCW Protected) to the Secretariat on 27 July 2015 with more information. It was decided within the Secretariat that the testimonies of these individuals would be taken by the FFM-Bravo team, a concurrent FFM team already deploying to Damascus to investigate separate incidents, and whose mandate would be amended to reflect this (NV/ODG/199375/15, dated 30 July 2015).

#### **Access to relevant geographic locations**

2.10 In the conduct of an investigation, complete, direct, and immediate access to the scene of alleged events provides the greatest opportunity to collect higher value evidence. Taking into account various constraints, such as the available time, geographical distribution, and security concerns, the FFM considered three main factors in deciding whether to conduct on-site visits, including interviews:

- (a) the scientific and probative value of an on-site visit;
- (b) the risk assessment of conducting such visits in the midst of the ongoing armed conflict in the Syrian Arab Republic; and
- (c) whether the victims and witnesses were able as an alternative to cross the confrontation lines or national borders and meet the FFM team.

2.11 In the best case during an investigation, potential interviewees would be identified by one of two means: 1) through the investigation team canvassing the area of the alleged incident to identify witnesses; and 2) through the identification of potential interviewees as possible leads by another source deemed reliable by virtue of proximity or involvement.

2.12 Due to security concerns in the region of interest and the time frame of events, and considering the very fluid circumstances of the ongoing conflict, including movements of people out of areas of interest, it was determined that, despite the potential gains in terms of primary evidence (although possibly somewhat reduced due to the passage of time), the risk for the team to visit these areas was prohibitive. Therefore, the team could not directly observe, assess, and record locations of alleged incidents, could not canvass directly for witnesses and affected persons, and could not directly collect samples, records, and other evidence from their sources.

2.13 It should also be noted that such canvassing in the desired location might enable the identification of:

- (a) a larger proportion of people willing to be interviewed, as travel would not be required, resulting in a greater selection pool for the team;
- (b) people from unaffected parts of the village who may not have been aware of incidents at the time, thus lending credibility or otherwise to interviewees, given their location; and
- (c) people, if any, with noticeably differing versions of events, validating or otherwise the input from interviewees.

2.14 In this context, the ability to verify the sequence of incidents through interviews, to access evidence, and to verify its chain of custody became primary considerations in the fact-finding process. To this end, the FFM conducted off-site interviews with relevant witnesses and affected persons, and performed the off-site receipt of samples, records and documentation, as collected by others. Therefore, within the limits of persons potentially available to the team, careful consideration was given to the process of identifying potential interviewees, arranging secure access to the interviewees, and maximising the value of output from the interviews, as well as for the treatment of evidence, once received.

### **Selection of interviewees**

2.15 Extensive discussions took place between elements of the Secretariat and various civilian entities from the Idlib Governorate, including NGOs and civil defence representatives, as well as with representatives of a neighbouring State Party (hereinafter referred to as “Country X”), which hosted and provided logistical support to the field activities of the team. The ultimate purpose was to establish an agreement on working practices, coordinate logistics and movements, and identify interviewees and arrange for their authorisation to visit Country X for interviews. These discussions were complemented by pre-deployment visits to Country X.

2.16 While there were several different NGOs with access to potential interviewees, only one, the Chemical Violations Documentation Center of Syria (CVDCS<sup>1</sup>), appeared to have access to the means of arranging their transport from the Idlib Governorate and their accommodation in Country X. Through this interaction, the team received a list from the CVDCS of approximately 150 individuals who may have had information about the alleged incidents to the east of Idlib City in mid- to late March. CVDCS identified 50 such individuals who would be willing to be interviewed in relation to the incidents. From these, the team selected 30 for interviews, after giving consideration to the factors of age, gender, relation to the incident (casualty, eyewitness, first responder, nurse, and treating physician), number of incidents, and geographical location, while giving emphasis to the priority indicated in QDOC/INS/WI/IAU05.

### **Interview process**

2.17 In order to optimise the output from the interviews, a suitable location for the safe, accessible, and comfortable conduct of interviews was chosen in conjunction with officials from Country X. This neutral location was surveyed and prepared for facilitation of the interviews, including facilities for rest and hospitality, with separate rooms for private interviews.

2.18 Interviewees were transported to the interview site in subgroups of approximately four on a daily basis. Upon arrival, the interviewees were greeted by the field team and given a thorough explanation of the team’s mandate, background and process, with interpretation into Arabic. The discussions included, among other things, confidentiality aspects and consent. Efforts were made by the team to make this process as relaxed and informal as possible.

2.19 The interview methods were based on the free recall technique, tailored with follow-on questions relevant to this investigation and adapted from the standard

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<sup>1</sup> An NGO supporting the FFM by providing access to documents, samples, and witnesses.

operating procedures (see Appendix 4), based both on the information obtained from preparatory research and on the interviews themselves.

2.20 The FFM was divided into two interview teams that conducted concurrent interviews in two separate rooms (except for the last group of interviewees, for which the team was divided into three interview teams in three separate rooms). Each interview sub-team was comprised of cross-functional skill sets (see paragraph 2.45) in order to maximise the extraction of information from multiple perspectives.

2.21 At the beginning of each individual interview, all interviewees were given a review of the procedure. Once the process was mutually agreed between the interview team and each interviewee, the recording devices were switched on. Both audio-visual and audio-only recording were used. A consent form for the respective interview was prepared using the personal details of the interviewees and their identification papers. This was followed by the signing of the consent forms. Many interviewees expressed concern that their personal details coupled with the information they were giving would be disseminated outside of the OPCW without their knowledge, with the potential impact this would have on their security. All interviewees were assured that they would remain anonymous.

2.22 The initial portion of the recorded interview followed a standard procedure of an introduction of all present in the room, an explanation of the aims of the interview, and confirmation of consent. Subsequently, the interviewees delivered their statements on the incident(s). With a view to obtaining a full account of what was witnessed and experienced by the interviewees, follow-up questions were posed by the interview team, including a review of regional maps for identification of key locations, when possible, and Internet searches. All review processes on the computer were video recorded. Furthermore, any additional evidence provided by the interviewees in the form of documents, photographs, and videos was reviewed. The testimonies and evidence were secured.

2.23 In conducting the interviews, full consideration was given to the privacy and protection of participants. All information was kept confidential and the identity of victims and witnesses protected at all times. An identity number was assigned to each interviewee and only this number was used for the processing of data. The master list with the names of the witnesses was kept secure with the FFM. Throughout its work, the FFM made all efforts to respect cultural and religious values and norms, national customs, and the personal pressures and traumas associated with exposure to conflict.

2.24 At the end of each day, the team held a debriefing session and shared its findings. This was followed by the securing of all data and documents collected that day.

2.25 The same procedures were used by the FFM-Bravo team in the conduct of interviews in Damascus, with two similarly structured interview teams working simultaneously.

### **Epidemiological methodology**

2.26 Epidemiological determination of cause and effect was established according to the following criteria:

- (a) there must be a biologically plausible link between the exposure and the outcome;
- (b) there must be a temporal relationship between the exposure and the outcome; and
- (c) there must not be any likely alternative explanations for the symptoms.

2.27 An epidemiological investigation should under best circumstances include a review of all documentation related to an alleged incident, an epidemiological description of the incident, interviews with presenting witnesses, health care workers and first responders, first-hand interviews with casualties, and on-site assessments of symptoms and signs, including assessments of the clinical severity of their syndromes. Further information regarding the treatment and outcomes of persons exposed should be retrieved from medical files relating to the time of incident and further interviews with treating clinicians. The epidemiological investigation should yield information about the scale of each event and provide contextual and geographical information that should subsequently be cross-checked and corroborated by the environmental sampling teams.

2.28 However, as mentioned previously, the FFM was not able to physically visit the locations of the alleged incidents, and therefore did not have the opportunity to:

- (a) assess the geography of the locations of the alleged incidents;
- (b) visit the field hospitals where the casualties were treated and make assessments of the available facilities;
- (c) access hospital records, including patient registers, medical files, treatment records, radiographs, laboratory reports, etc.; and
- (d) conduct the on-site collection of testimonies and clinical examinations and, as appropriate, the collection of biomedical samples.

2.29 The FFM could not rely on clinical examinations, as the medical symptoms caused in those exposed to the toxic substances had been resolved either through treatment or otherwise resolved over the intervening period.

2.30 The epidemiological investigation was therefore focused on collecting the testimonies of the interviewees (witnesses, persons exposed, and those providing medical care), together with collecting and examining relevant documentary evidence that they might offer.

#### **Sampling and analytical procedures**

2.31 Under optimal circumstances, samples from an incident would be collected by the investigating team immediately after the incident, using approved procedures and equipment, including full documentation of the chain of custody of the samples. As noted above, the team was constrained due to the inability to directly access the sites of the alleged incidents and the amount of time that had passed between the alleged incidents and receipt of samples by the team (approximately 3 to 10 weeks). As a result, the team was unable to:

- (a) assess the geography and conditions of the locations of the alleged incidents;
- (b) directly select sampling points and items;

- (c) conduct on-site collection of samples; and
- (d) implement a verifiable cradle-to-grave chain of custody of samples.

2.32 Given the elapsed time since the alleged events and the nature of chlorine, as well as the unknown nature of other possible innumerable toxic chemicals (such as volatility, vapour density, prevalence of naturally occurring markers, or degradation products and rates, etc.), any selection of samples from those offered to the team and the subsequent analyses of such samples required careful consideration. With such a broad range of unknowns, the team considered and accepted a broad array of sample types, to be subjected to an equally broad array of analyses.

2.33 The FFM used an OPCW designated laboratory for the analysis of the samples received. Designated laboratories are accredited by the OPCW for the analysis of authentic samples in accordance with the relevant decisions taken by the States Parties to the Chemical Weapons Convention (hereinafter “the Convention”).

2.34 The OPCW designated laboratories must meet the following criteria:

- (a) they have established an internationally recognised quality assurance system in accordance with relevant standards (ISO/IEC<sup>2</sup> 17025:2005 or equivalent);
- (b) they have obtained accreditation by an internationally recognised accreditation body for the analysis of chemical-warfare agents and related compounds in various types of samples; and
- (c) they regularly and successfully perform in the OPCW’s proficiency testing programme.

2.35 The OPCW proficiency tests are based on qualitative analysis of test samples with unknown sample composition to determine the presence of any number of possible chemicals relevant to the Convention.

2.36 The significant features of the test demonstrate it to be one of the most challenging proficiency tests, requiring highly competent analytical skills and stringent quality control. Among these features, the test:

- (a) covers a diverse nature of chemicals;
- (b) involves blind testing for an almost infinite number of chemicals in complex matrices;
- (c) does not prescribe a method;
- (d) requires detailed reporting of results;
- (e) allows for only a short timeline;
- (f) involves a zero tolerance for false positives; and
- (g) involves a performance rating.

2.37 The methods used by the designated laboratory for the analysis of the environmental samples handed over to the FFM are validated during OPCW proficiency testing, and in the accreditation of the laboratory as described above. The selected laboratory followed its standard operating procedures for sample

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<sup>2</sup> ISO/IEC = of the International Organization for Standardization and the International Electrotechnical Commission.

preparation (extraction, derivatisation, concentration, etc.), followed by analysis using gas chromatography-electron impact mass spectrometry/dual flame photometry detection (GC-EI-MS/dFPD), liquid chromatography-high-resolution mass spectrometry (LC-HRMS) and nuclear magnetic resonance (NMR) spectroscopy for the identification of organic compounds.

2.38 Inorganic species were analysed using inductively coupled plasma mass spectrometry (ICP-MS), inductively coupled plasma optical emission spectrometry (ICP-OES), ion chromatography (IC) and X-ray fluorescence (XRF, qualitative results). Fourier transform infrared spectroscopy (FTIR) and differential scanning calorimetry (DSC) were used for material testing.

### **Biomedical samples**

2.39 The methods used by laboratories for the analysis of the biomedical samples received by the FFM are currently being evaluated through biomedical testing exercises for the analysis of such samples.

2.40 For the analysis of biomedical samples, the FFM intended to use laboratories involved in the OPCW biomedical testing exercises. However, due to the low concentration of analytes, analysis would need to be targeted to the expected chemical and/or its metabolites. Targeted analysis is normally based on observed symptoms in patients, bearing in mind that symptoms can be unspecific.

2.41 In this case, chlorine would not have yielded any relevant metabolites, given the lack of specific biomarkers. Considering the large number of other potential chemicals, based on the signs and symptoms, additional information would be needed to analyse biomedical samples.

### **Analysis of delivery and dispersion mechanism(s) and impact events**

2.42 As with other evidence, visits to the scene of alleged incidents and collection of evidence at the scene (in this case remnants of munitions) would have provided the most valuable input, particularly if this collection could have been done very close to the time of the alleged incident. As this was not possible, the team based its assessment on open-source information, predominantly from the Internet; testimony given during interviews; videos, pictures, and documents submitted by interviewees; and samples of munition remnants, indicated by interviewees as relating to specific incidents.

2.43 Further means of validation would ideally be provided by comparing observations from interviewees to the expected behaviour of a known device or theoretical design. Given the uncertainty around the unknown potential chemical and how industrial chemicals in particular might behave under unknown energetic and mechanical dispersion conditions, it would not be possible to compare the theoretical dispersion of chemicals and fragments to that described by interviewees and shown in photographs and videos.

2.44 The team carried out some basic plume modelling of potential industrial chemicals. Given the same uncertainties described above and the inherent inaccuracies of plume modelling, this is of very limited value to the process.

## PERSONNEL SELECTION, SKILL SETS, AND TRAINING

2.45 Team members were selected based on their specific skill sets across a broad range of mission requirements. The skill sets included knowledge and expertise in the following fields:

- (a) chemical weapons;
- (b) munitions;
- (c) analytical chemistry;
- (d) medical/health, including epidemiology and first response;
- (e) industrial chemicals and technology;
- (f) interview and negotiation;
- (g) contingency operations experience, including previous experience with fact-finding missions and other missions to the Syrian Arab Republic;
- (h) operations control;
- (i) communications;
- (j) logistics; and
- (k) security.

2.46 Prior to deployment, staff received training (including refresher training), which was documented in the various subtopics essential for the performance of safe, effective, and efficient inspections, including:

- (a) interviewing and investigative techniques/considerations;
- (b) evidence collection and handling;
- (c) proficiency with equipment;
- (d) confidentiality procedures;
- (e) operational security; and
- (f) crisis management.

2.47 The training included lectures, field training, table-top exercises, activity rehearsals, and practice. Particular emphasis in training and preparation was placed on interviewing and evidence handling. Much training, particularly in the latter two areas and field security, was provided by experts from a number of States Parties. Regular security briefings were also given. Further information is included in Appendix 3.

2.48 Equipment needs were identified and equipment was sourced while movements and logistics were arranged. New equipment was procured and team proficiency established. Expert advice and consultation was also coordinated with resources from the Secretariat, particularly with regard to health and safety, security matters, and the legal aspects of the process.

2.49 The above preparations ensured that sample receipt, interviews, and all other evidence collection were performed by fully trained and qualified inspectors.

## CHAIN OF CUSTODY AND EVIDENCE COLLECTION AND HANDLING

2.50 This FFM collected the evidence in the form of witness interviews/statements (taken as audio and/or video recordings) and documents/photos/videos handed over by witnesses. The team additionally received environmental samples and fragments of alleged munitions collected by witnesses and/or representatives of the CVDCS.

2.51 The following procedures, aimed in particular at ensuring the chain of custody from moment of receipt, were applied during the mission:

(a) All witness statements/interviews were video and/or audio recorded and the recordings were documented as evidence.

(b) All electronic files or paper documents handed over by interviewees were registered in the evidence logbook.

(c) Electronic data storage devices were viewed only via a universal serial bus (USB) bridge, and secure digital (SD) ultra-small flash memory cards were locked prior to viewing in order to not alter the metadata of the files.

(d) Files on original electronic storage devices were copied to provide best evidence, and working copies were made so as to not compromise original information during data handling.

(e) The receipt, packaging, and sealing of the provided samples were supported by photographs and appropriate paper documentation.

(f) The received samples were in the possession of at least one team member and under OPCW seal from the time of receipt until arrival at the FFM on-site office.

(g) At the FFM on-site office, the samples were fully documented, packaged, sealed and packed appropriately for safe transport.

(h) The integrity of the samples was ensured through their physical possession by an FFM member and/or through tamper-proof seals.

(i) All seals and accompanying documentation were confirmed correct/intact prior to the issuance of handover/takeover receipts.

2.52 Some samples were accompanied by partial documentation of the chain of custody prior to delivery to the FFM. Although this documentation provided some degree of confidence, the entire chain of custody could not be verified, thus the possibility of cross-contamination could not be ruled out. Therefore, although such samples would be considered as primary evidence under optimal circumstances, given the constraints as described, the FFM regarded the samples as tertiary evidence. As such, the results from such analyses were treated more as supporting information than of significant evidential value. Therefore, it was decided that the splitting of samples for analysis at a second laboratory did not warrant the efforts, including cost, and the impact on the designated laboratory and on OPCW staff.

2.53 However, the FFM followed procedures to ensure a strict chain of custody from the time of receipt through delivery to the OPCW Laboratory in Rijswijk, the Netherlands, by the procedures described earlier. Additionally, similar stringent procedures were applied when transferring the samples to a selected designated

laboratory where activities were conducted using standardised procedures (including quality assurance and quality control checks) for receiving, storing, preparing and analysing samples. The results were then communicated to the FFM team for review. Each transfer of material was accompanied by documentation of the transfer.

## **DEPLOYMENT DETAILS AND CHRONOLOGY**

2.54 From 1 to 4 May 2015, a single interview team deployed and conducted one interview with a medical professional who had reported managing casualties of alleged chemical attacks in the Idlib Governorate on multiple occasions. The team was composed of a mission leader, interview leader, two other interviewers, and an interpreter. The composition of the team was designed to incorporate a broad range of expertise and specialist fields, including munitions, medical, chemical technology, and language.

2.55 A larger team deployed from 19 May to 6 June 2015 to conduct the remainder of the planned interviews, and to collect samples for analysis. The team consisted of interview teams, plus command post elements to support critical operational needs such as logistics, movements, communications, security, confidentiality, evidence collection and handling, and command. During this deployment, the team conducted interviews, collected documents, images and videos, as well as identified and collected samples for potential analysis.

2.56 Concurrent with the team's activities, the CVDCS provided accommodation for the interviewees as well as transport to and from the border and between their place of accommodation and the interview location. The schedule was planned such that the interviewees would arrive in three different batches. The pattern for each batch was as follows:

- (a) travel from current home location to border;
- (b) cross the border;
- (c) travel to accommodation;
- (d) rest period between the journey and the start of the interview process;
- (e) interviews over several days; and
- (f) return and arrival of next batch.

2.57 The original plan was that the three batches would include 11, 9 and 10 interviewees respectively. However, the first batch additionally included the doctor who was originally interviewed from 1 to 4 May. He passed on additional data, including photographs and video footage, but was not re-interviewed. Furthermore, the CVDCS encountered funding issues which resulted in the last batch being reduced from 10 to 3 interviewees. In consultation with the CVDCS, the team selected interviewees based on anticipated breadth of knowledge of incidents, coupled with their status in the communities and the potential influence for future continuation of FFM activities.

2.58 A final deployment took place from 21 to 24 July 2015, when a small team met on the border with Syrian nationals who provided additional samples for potential analysis.

2.59 In addition to the above, the FFM-Bravo team, while deployed to Damascus to conduct a separate mission, conducted 20 interviews with 18 persons presented by the Syrian Arab Republic as having testimony relevant to this report. These interviews were conducted from 4 to 7 August 2015 and are discussed in Section 4.

2.60 A breakdown of timelines is provided in Appendix 3.

### **3. INCIDENT SUMMARIES AND ANALYSIS**

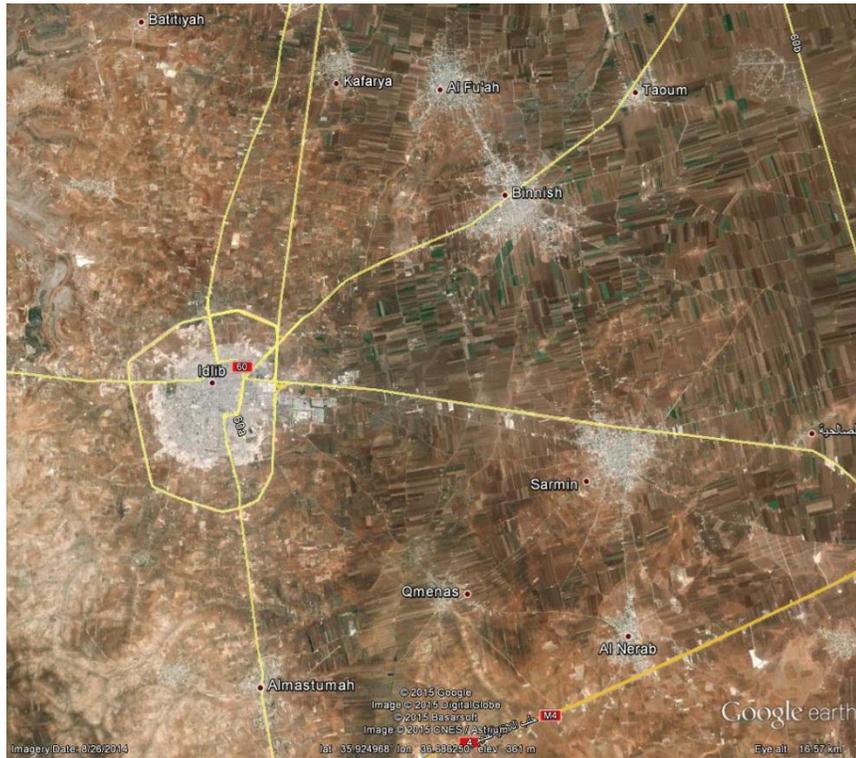
#### **INCIDENT SUMMARIES**

3.1 The following sections outline events that occurred in a particular area. The narratives in the following sections given for each incident are derived from interviews. Unless otherwise stated, all weather conditions indicated are taken from <http://www.wunderground.com>.

3.2 There are many references to the Syrian Civil Defense (SCD) in the narratives. The SCD's website (<http://syriacivildefense.org/>) states as follows: "We, the Syrian Civil Defense teams and team members, act neutrally, impartially and are humanitarians. We do not pledge allegiance to any political party or group. We serve all the people of Syria — we are from the people and we for the people ... Our mission is to save the greatest number of lives in the shortest possible time and to minimise further injury to people and damage to property." Many of the first responders claimed to be members of the SCD and tend to respond to incidents as a function of that membership. Some interviewees presented documentation to confirm their membership in the SCD.

3.3 Paragraphs 3.4 to 3.130 below refer to alleged incidents in Qmenas, Sarmin, Binnish, Idlib City, Al-Nerab, Saraqib, and Kurin. Figures 1 to 4 below show the relative geographic locations of Qmenas, located 6 km south-east of Idlib City; Sarmin, located 5 km north-east of Qmenas; Al-Nerab, located 3 km south of Sarmin; Binnish, located 6 km in a northerly direction from Sarmin; Saraqib, located 17 km east-south-east from Idlib City; and Kurin, 10 km south-west of Idlib City.

**FIGURE 1: IDLIB CITY AND THE AREA TO THE EAST**



**FIGURE 2: BINNISH AND THE AREA TO THE NORTH**

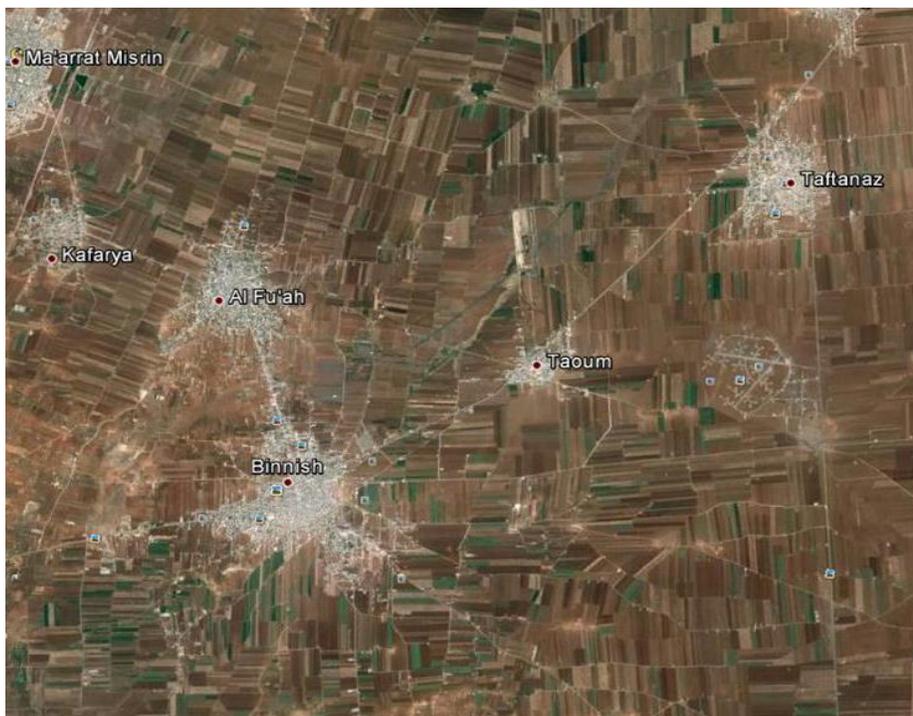


FIGURE 3: THE AREA TO THE SOUTH OF IDLIB CITY

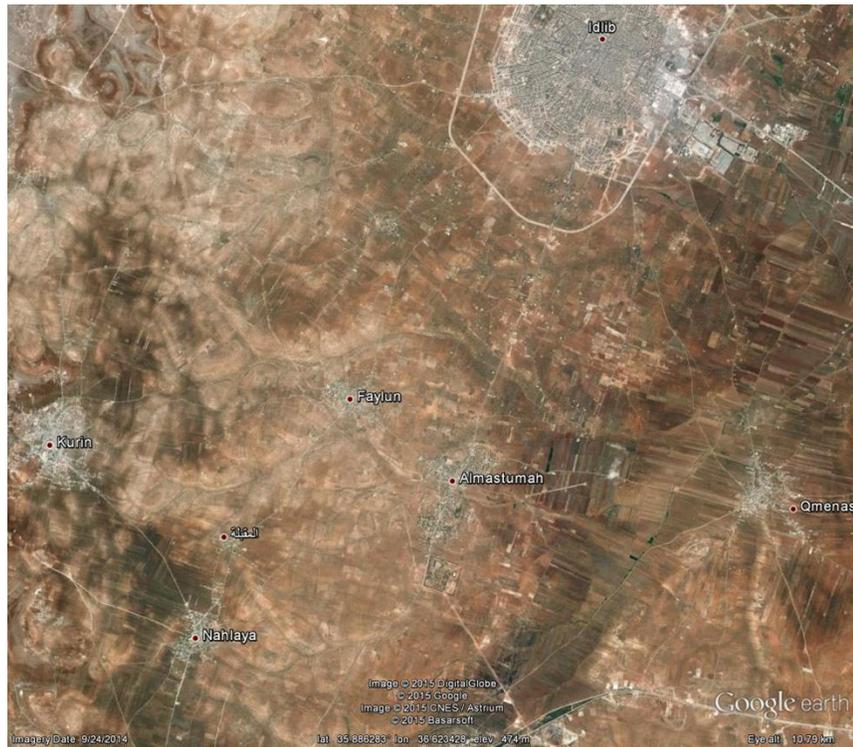
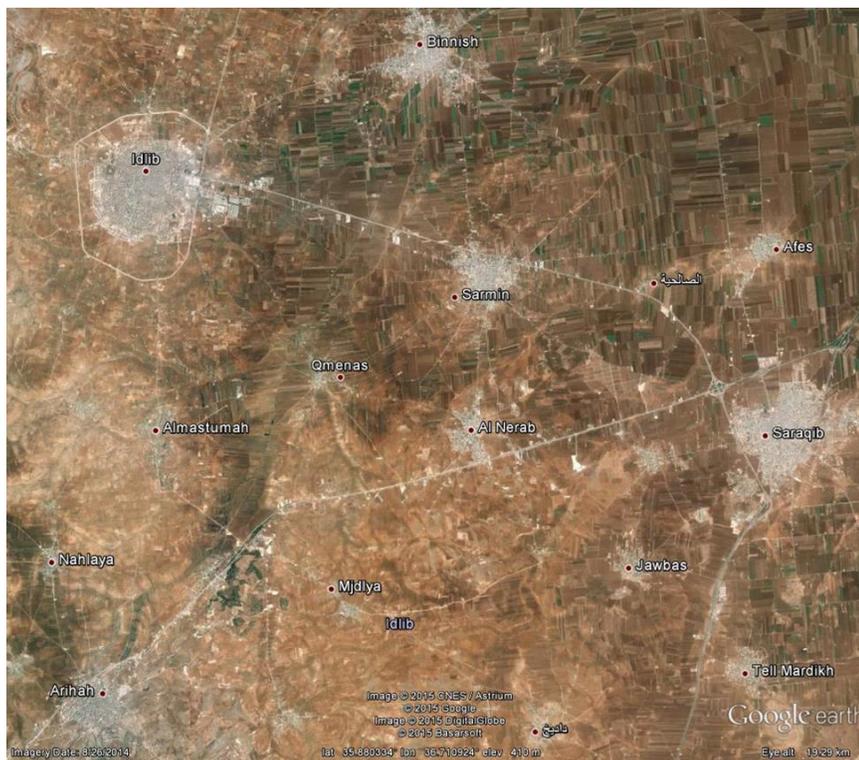


FIGURE 4: IDLIB CITY AND SARAQIB



## Qmenas

3.4 Qmenas is a village in the Idlib Governorate of the Syrian Arab Republic.

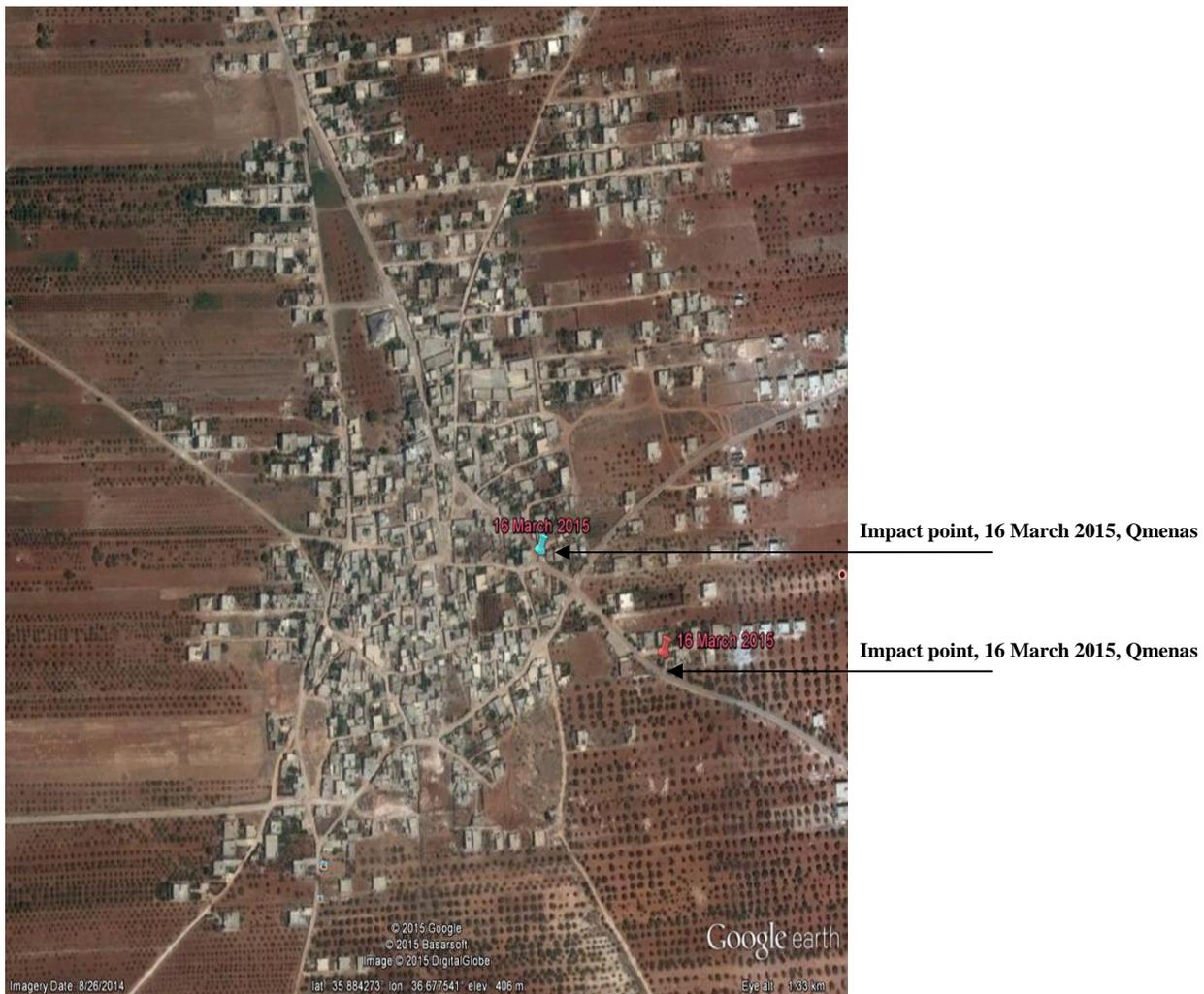
3.5 Between 3 May and 5 June 2015, the FFM interviewed 17 individuals including treating physicians, nurses, first responders, casualties, and witnesses who provided accounts and information regarding the alleged incident of 16 March 2015.

**TABLE 1: INFORMATION ON REPORTED INCIDENTS IN QMENAS**

Date	Approximate time	Weather conditions
16 March 2015	20:30 – 21:00	Temperatures around 14°C with 48% to 51% humidity. The wind direction was SW WSW at 3 to 4 metres per second (m/s).

3.6 Figure 5 below shows the approximate alleged impact points of the devices, as derived from interviewees.

**FIGURE 5: QMENAS AND THE SURROUNDING AREA**



**Narratives**

3.7 Qmenas was not under the control of the Government in March 2015 and the front line was at around 2 km from the village outskirts. Prior to conflict in this area, the population of the village was approximately 2,000 people.

3.8 Interviewees claimed that on the night of 16 March 2015 between 20:00 and 21:00, a helicopter had been passing above Qmenas. The helicopter was flying east out of Qmenas and dropped two items in and very close to the edge of a military zone.

3.9 According to one of the witnesses interviewed by the FFM team, both items (“barrel bombs”) hit the ground inside the military zone; one of the items was very close to a residential area. The witnesses from Qmenas described the sound of the explosion as muted compared to the sound of conventional weapons. It was assumed by witnesses that the bomb failed to explode. A few minutes later, the occupants of the houses situated in the eastern and north-eastern part of the village, relatively close to the impact point, smelled an odour similar to chlorine-based household cleaning agents, but much more intense. Some witnesses mentioned specific brand names of cleaning agents and some specifically mentioned chlorine, which may be the chemical chlorine or may be the trade name of a chlorine-based household cleaning agent. The residents of the area who were exposed to the alleged gas began tearing and coughing and had difficulty breathing. Shortly thereafter, as there was no mobile telephone coverage in this village at the time, the population was informed through other early-warning methods, including the use of hand-held radios and the loudspeakers on the mosques’ minarets. The announcements, for example, stated “careful a chemical attack on Qmenas”. The witnesses described a scene of panic in the village after the announcement of the message.

3.10 Approximately 60 exposed persons were transported by volunteers, who used their personal cars or vans, from Qmenas to the Sarmin field hospital. Two ambulances were sent from the Saraqib SCD unit to Qmenas, but they reached the village after the evacuation of exposed persons was complete.

3.11 All persons transferred from Qmenas to Sarmin field hospital as exposed cases were decontaminated by flushing with water near the entrance of the hospital. One of the treating physicians was in charge of prioritising the cases (triage) and sending them to the appropriate channel for treatment.

3.12 From the 60 or so individuals who arrived from Qmenas to the Sarmin field hospital on 16 March 2015, 40 cases had clinical signs of anxiety, six cases were considered as secondary exposure (one treating physician and five first responders), and 14 patients were considered as directly exposed.

3.13 The roughly 60 individuals who were transported to the Sarmin field hospital were all civilians. The FFM team asked if any military personnel had also been treated. One interviewee confirmed that some, without giving a number, had been exposed to the alleged chemical(s). He also indicated that those cases had been treated in their military unit.

3.14 Most of the witnesses from Qmenas who were interviewed by the FFM team and had visited the alleged incident location reported seeing one item only; two witnesses confirmed seeing a second item, from a distance due to the restriction of access (military area). Witnesses described seeing:

- (a) a metallic cylinder or barrel/drum;
- (b) a number of exploded refrigerant gas cylinders, the inner side of which were yellowish and the outer side of which were green;
- (c) soil that had changed colour to reddish pink; and
- (d) plastic bottles.

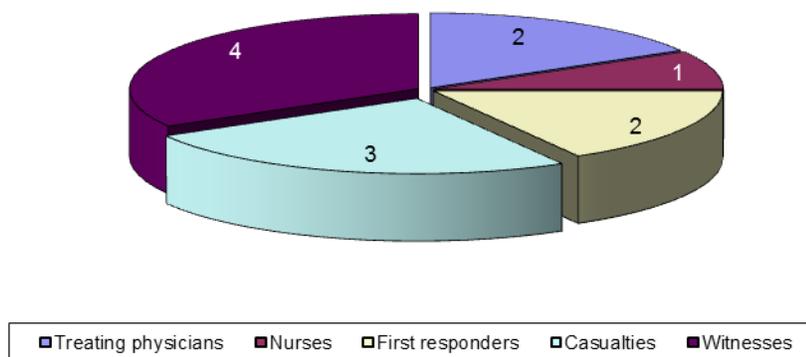
### Epidemiological analysis

3.15 Between 3 May and 5 June 2015, the FFM interviewed and collected the testimonies of 17 individuals including treating physicians, nurses, first responders, casualties, and witnesses, including 12 who provided epidemiological evidence. The details of those 12 interviewees are given in table below:

**TABLE 2: RELATION TO THE INCIDENT IN QMENAS AND GENDER DISTRIBUTION OF INTERVIEWEES**

	Interviewee	Male	Female
Treating physicians	2	2	
Nurses	1	1	
First responders	2	2	
Exposed persons	3	2	1
Witnesses	4	4	
<b>Total</b>	<b>12</b>	<b>11</b>	<b>1</b>

**FIGURE 6: DISTRIBUTION OF INTERVIEWEES IN RELATION TO THE INCIDENT IN QMENAS**



3.16 The village of Qmenas has no field hospital; for emergencies the population uses the nearest hospital, which is located in Sarmin. Qmenas was allegedly attacked with a suspected chemical or chemicals on 16 March 2015. The individuals who were interviewed described this attack as indicated above.

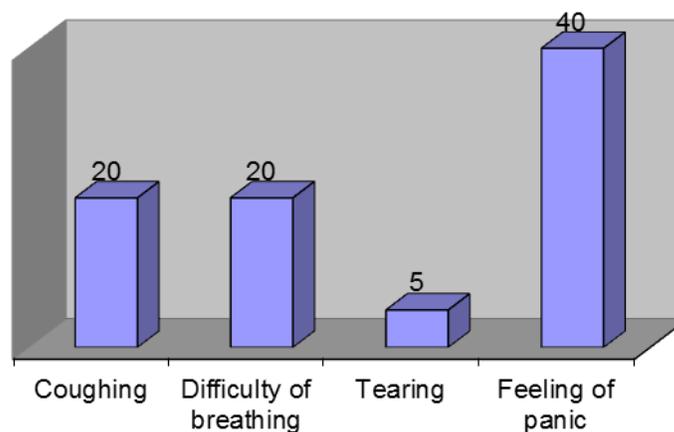
3.17 The Sarmin field hospital received approximately 60 patients on 16 March 2015. The decontamination of patients was performed in all cases, including washing of the exposed area of skin. This decontamination was performed outside

of the emergency room. The clinical examination, signs, and symptoms, as observed by the treating physician included coughing, difficulty of breathing, and tearing.

**TABLE 3: SIGNS AND SYMPTOMS IN QMENAS, 16 MARCH 2015**

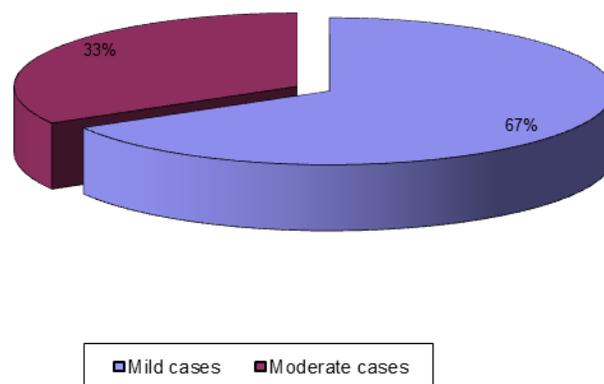
Symptom	Number of cases (approximately)
Coughing	20
Difficulty of breathing	20
Tearing	5
Feeling of panic	40
<b>Total cases</b>	<b>60</b>

**FIGURE 7: SIGNS AND SYMPTOMS IN QMENAS, 16 MARCH 2015**



3.18 Forty patients were considered as mild cases and 20 as moderate. None of the affected individuals in the described attack had any signs of physical trauma on their bodies, but only suffered from the effects of the suspected toxic chemical(s).

**FIGURE 8: SEVERITY OF CASES IN QMENAS, 16 MARCH 2015**



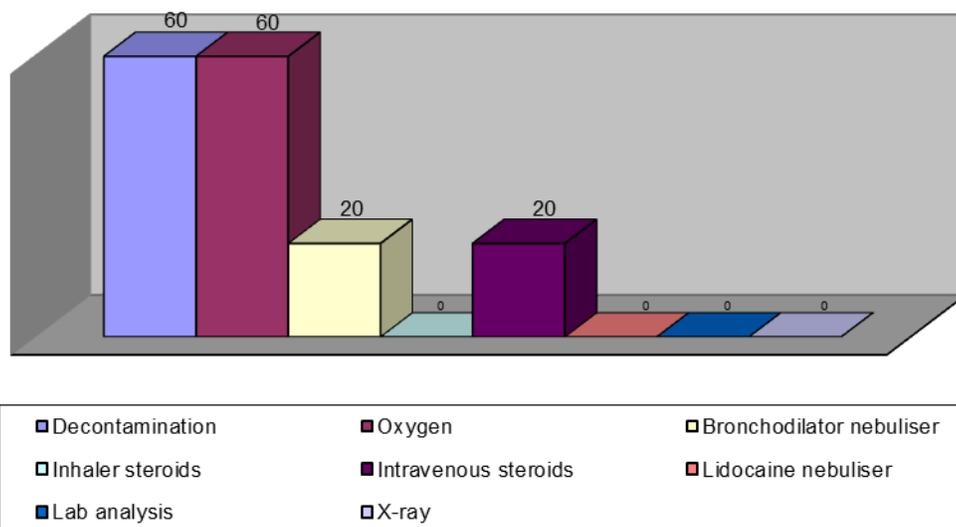
3.19 The mild cases responded well to the administration of oxygen. Those with moderate symptoms also benefitted from nebulisation with the bronchodilator salbutamol and the intravenous steroids hydrocortisone or dexamethasone. No severe cases were reported.

3.20 No laboratory examinations and no X-rays needed to be requested for these cases. All of these individuals were discharged from the hospital after a maximum of one hour.

**TABLE 4: TREATMENT OF CASES IN QMENAS, 16 MARCH 2015**

Decontamination	60
Oxygen	60
Bronchodilator nebuliser	20
Inhaler steroids	0
Intravenous steroids	20
Lidocaine nebuliser	0
Lab analysis	0
X-ray	0

**FIGURE 9: TREATMENT OF CASES IN QMENAS, 16 MARCH 2015**



3.21 The hospital staff registered the names of patients. The FFM requested copies of the patient registration book and medical files, but was not provided with these documents.

#### Biomedical samples

3.22 No biomedical samples were taken from the patients involved in the alleged incident in Qmenas on 16 March 2015, neither by the FFM team nor by the medical staff at the Sarmin field hospital.

Environmental samples

3.23 No environmental sample was collected or received by the FFM team related to the alleged incident in Qmenas on 16 March 2015.

**Sarmin**

3.24 The village of Sarmin is one of the villages of the Idlib Governorate of the Syrian Arab Republic.

3.25 Between 3 May and 5 June 2015 the FFM team interviewed 21 individuals who provided accounts and information regarding incidents of alleged use of toxic chemicals as a weapon in and close to this village on 16 March, 23 March, and 26 March 2015, and 16 May 2015. The interviewees were treating physicians, nurses, first responders, casualties, and witnesses.

3.26 The description of all of the allegations was similar and indicated that the incident happened during the night. Although the people said they were unable to see the helicopters, they heard the sound. The witnesses described the sound of impact as muted compared to the explosive sound previously encountered with the impact of explosive devices and weapons. In the first incidents, it was commonly assumed that the bomb had failed to explode. This was followed minutes later by warnings on hand-held radios about impact points and the release of chemicals. Some people who lived close to the impact points and who were exposed described smelling the typical odour of chlorine immediately after the impact and tried to escape. They described the smell as irritating, similar to chlorine used as a household cleaning agent but much more intense. The interviewees informed the FFM team that over a period of time since the beginning of the crisis they had been educated by local emergency response committees on what to do in case of an attack involving toxic chemicals. People were advised to escape upwind of the point of impact and to higher elevations.

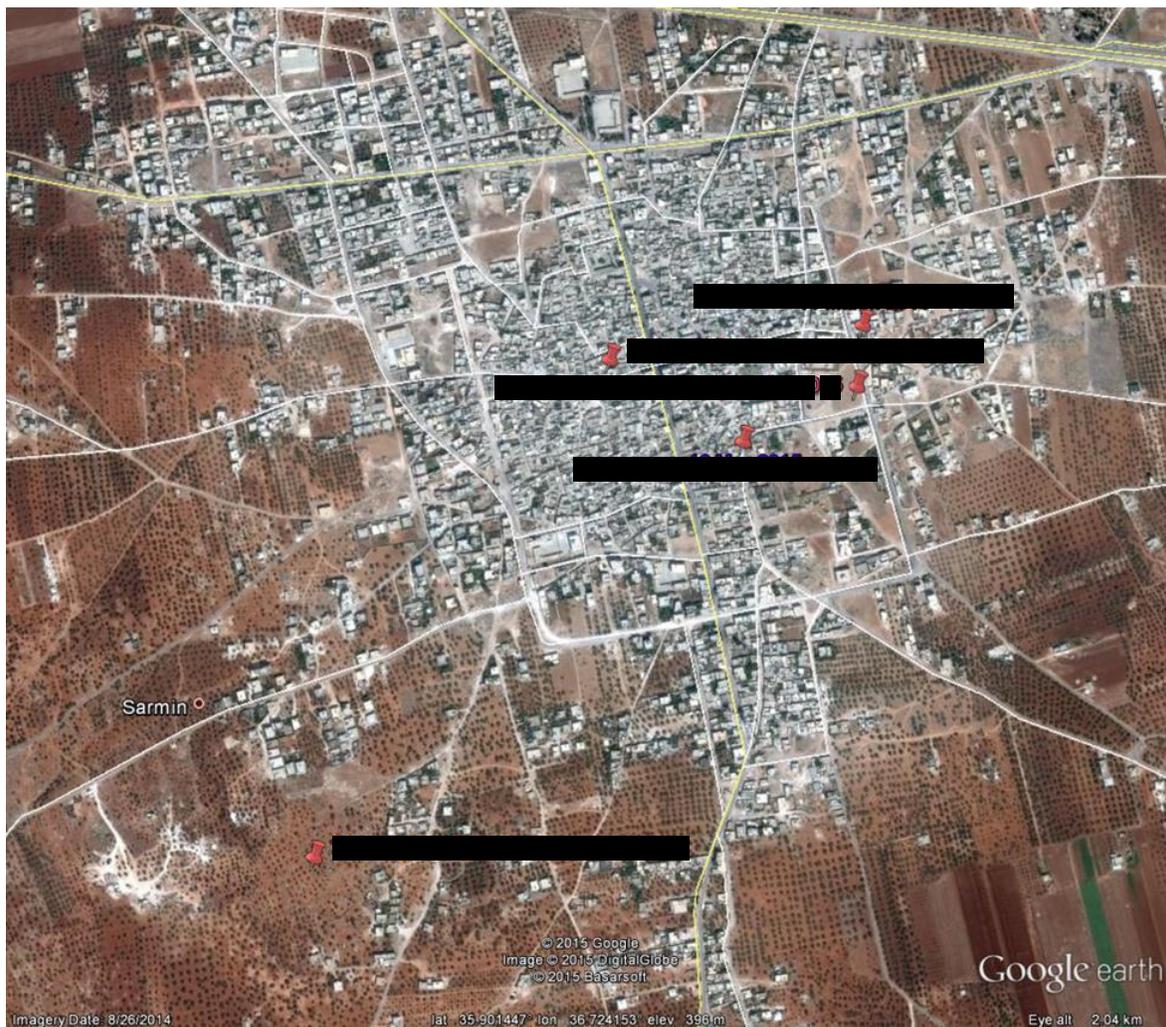
**TABLE 5: CHRONOLOGY AND ASSOCIATED WEATHER CONDITIONS IN RELATION TO INCIDENTS IN SARMIN**

<b>Incident</b>	<b>Date</b>	<b>Approximate time</b>	<b>Weather conditions</b>
First	16 March 2015	22:30-23:00	Stable temperatures at 14 to 15°C between 19:00 and midnight, with 48% to 51% humidity. The wind direction was SW WSW at 3 to 4 m/s
Second	16 March 2015	22:30-23:00	
Third	23 March 2015	01:00-03:00	Stable temperatures at 10°C between midnight and 7:00, with 62% to 67% humidity. The wind direction was variable, predominantly W to WNW at 6 to 7 m/s
Fourth	26 March 2015	22:00-23:00	Temperature was dropping down from 16 to 12°C between 19:00 and midnight with increasing humidity from 68% to 94% for the same period of time. The wind direction was variable, predominantly NE at 1 to 3 m/s

Incident	Date	Approximate time	Weather conditions
Fifth	16 May 2015	03:00-04:00	The temperature was stable at 18°C from midnight to 6:00. The wind direction was variable, with no fixed direction and the velocity was wavering between 2 and 6 m/s

3.27 Figure 10 below shows the approximate impact points of the devices, as derived from interviewees.

**FIGURE 10: ALLEGED APPROXIMATE IMPACT POINTS IN SARMIN**



### Narratives

3.28 In March 2015, the village was under the control of opposition groups. The normal population was estimated to be around 20,000 and less than 5,000 at the time of the incident.

16 March 2015

3.29 Interviewees claimed that on the night of 16 March 2015 between 22:30 and 23:00 a helicopter was heard passing above Sarmin, flying from west-south-west to east-north-east, and that helicopter dropped the first item. A few minutes later the same helicopter dropped a second item nearby in the same eastern neighbourhood of Sarmin.

3.30 The interviewees affirmed that they had heard the sound of the falling items from the helicopter “sound similar to a diving fighter jet” followed by a soft explosion, “not a strong explosion sound”. Initially, they had assumed that the item failed to explode. A few minutes later, a message was conveyed to the residents of Sarmin that they were chemical items. The message had been broadcast through the local walkie-talkie network and the loudspeakers on the minarets of the mosques.

3.31 Some interviewees who lived close to the impact points and who were exposed described smelling the typical odour of chlorine immediately after the explosion of the first item.

3.32 A number of SCD members responded to the request for help from the population on the basis of receiving information through the local communication system, and also responded to incidents on their own initiative as part of their voluntary role. The SCD members interviewed by the FFM team indicated that an odour similar to chlorine could be smelled a hundred metres away from the impact point.

3.33 Alleged casualties were evacuated to two hospitals, the Sarmin field hospital and the Saraqib field hospital. Testimonies of the treating physicians indicated that a total of 42 patients were received in both field hospitals as directly exposed individuals. These 42 cases were classified as moderate to severe. Sarmin field hospital treated 31 patients and 11 were received at the Saraqib field hospital. Among the 31 patients treated at the Sarmin field hospital on the night of 16 March 2015, 14 patients had been received from Qmenas. These 14 patients were those previously indicated as having been directly exposed in the alleged incident that occurred in Qmenas on the same evening (see paragraphs 3.8 and 3.9), approximately two hours before the incident in Sarmin. One of the treating physicians claimed that the hospital had also treated some 20 SCD members who had suffered secondary exposure and mild symptoms.

3.34 The total number of fatalities related to these incidents in Sarmin was six people, all of them members of one family (mother, father, their three children, and the children’s grandmother). Three of those six had reached the hospital alive: the mother, the father, and the oldest child. The remaining three family members (the grandmother and the two daughters) were dead when they arrived at the field hospital in Sarmin.

3.35 According to the interviewees’ statements, the six family members lived in the same house at the time of the incident. The house had two separate levels underground and had a rectangular vertical ventilation shaft with an approximate dimension of 3 m x 1.5 m. The ventilation shaft was open at ground level and descended through the two floors, allowing the ventilation of the two underground floors. The interviewees described that the chemical item fell through the ventilation shaft and exploded inside the house. It was not totally clear where it had exploded, whether towards the top of the shaft, the bottom, or in between. However, it was

estimated to have exploded in the second underground level (-2) where the family had been taking refuge. Furthermore, at some point during the incident, there was an impact with a water tank. The father, the mother, and the oldest (male) child managed to escape to the open air, and were transported by the SCD to the hospital where they were decontaminated with water and then received medical attention. The father informed the SCD rescuers that the two daughters and grandmother were trapped in the second underground level. The rescuers managed to extract the grandmother and the two daughters 30 minutes later and also transferred them to the hospital. Delays in the rescue were caused by the inability to access the basement due to the strong pungent chemical smell. The interviewees confirmed that the grandmother and the two daughters were dead on arrival at the hospital. The FFM team tried to clarify if those three casualties were alive during the transport phase, or whether they had died at the house. It was impossible to further clarify this issue.

3.36 Witnesses and first responders who were interviewed by the FFM team and had visited the family house after the alleged incident reported observing the following:

- (a) a strong smell of chlorine;
- (b) a metallic cylinder with an approximate diameter of 1 m to 1.5 m; they described it as “double the size of an oil barrel”;
- (c) a number of exploded green refrigerant gas cylinders; and
- (d) the presence of a red/purple liquid on the floor and part of the walls.

#### 23 March 2015

3.37 Interviewees claimed that on 23 March 2015, during the early morning hours between 1:00 and 3:00, a helicopter had been heard passing above Sarmin and that the helicopter dropped one item. The interviewees stated that they heard a whistling sound coming from the falling item, followed by a weak explosion sound.

3.38 A few minutes later, a man conveyed a message, through the local walkie-talkies, that “he has smelled toxic substances in the air” in the south-west of Sarmin. Based on that message, the local emergency system broadcasted an order of evacuation to the residents of that part of the village. Some witness affirmed that they smelled chlorine 3 to 4 km away in Al-Nerab (to the south) and in part of the Qmenas neighbourhood.

3.39 The medical specialist interviewed by the FFM team affirmed that the number of exposed persons was five, all suffering from mild symptoms.

3.40 Witnesses interviewed by the FFM team and who had visited the location of the alleged impact site reported observing the following:

- (a) a metallic cylinder;
- (b) a number of exploded green refrigerant gas cylinders;
- (c) plastic bottles;
- (d) soil that had changed colour to reddish pink; and
- (e) leaves on the trees that had turned yellow.

26 March 2015

3.41 Interviewees claimed that on 26 March 2015 in the early morning hours between 1:45 and 2:30, a helicopter was heard passing above Sarmin after broadcasts on radios warned of the helicopter passing over Qmenas eastward towards Sarmin. The helicopter dropped one item. A few minutes later, a man radioed a message of a “strong smell at 50 m from the market” in Sarmin.

3.42 The alleged item fell into an uninhabited house at approximately 100 m west of one of the main streets of Sarmin, “Market Street”.

3.43 The medical specialist interviewed by the FFM team affirmed that the number of exposed persons was six, all suffering from mild symptoms.

16 May 2015

3.44 Interviewees claimed that in the early morning hours of 16 May 2015 around 2:00, a helicopter was heard passing above Sarmin. The helicopter dropped one item which fell into the entrance of a residence set in an underground cave.

3.45 The medical specialist interviewed by the FFM team mentioned four exposed persons (one male, one female, and two children), three of whom had mild symptoms, and one (the male) whose case was considered as moderate.

3.46 Witnesses who were interviewed by the FFM team and had visited the alleged incident location reported observing the following:

- (a) the metallic outer casing of a cylinder; and
- (b) changed colour on the walls, described as the “walls looked burned”.

**Epidemiological analysis**

3.47 Sarmin has one field hospital, which is located in one of the buildings in the city and is intended specifically for the medical needs of this village, including the treatment of traumatic war injuries. There is also one private clinic and one primary health centre, the latter being dedicated exclusively for vaccinations. The field hospital is staffed by two doctors specialising in the fields of radiology and psychiatry, in addition to a resident specialising in pneumology. The medical doctor of the private clinic, who is an anaesthetist, supports the team if needed (as was the case for the several incidents), as well as 25 other staff from the field hospital, most of them field-trained nurses.

3.48 The hospital staff members do not have formal training in the management of injuries resulting from chemical incidents. The structure of the hospital has been augmented continuously since its establishment. The resources available at the hospital include a radiology department, one operation theatre, an emergency room with a total of eight inpatient beds, and some oxygen cylinders and nebulisers. All individuals who present to this field hospital for routine illnesses and war injuries are registered, and all medical records are maintained.

3.49 It was reported that Sarmin was attacked with suspected toxic chemicals on several occasions.

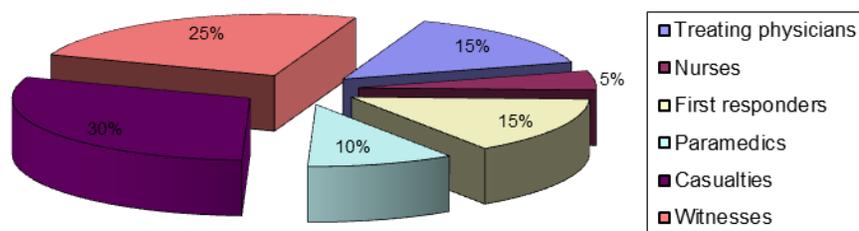
3.50 The FFM interviewed and collected the testimonies of 21 individuals including treating physicians, nurses, first responders, exposed persons, and witnesses who

provided accounts and information regarding incidents of alleged use of toxic chemicals as a weapon. Of these 21 individuals, 20 provided epidemiological evidence. The details of these interviewees are given in Table 6 below.

**TABLE 6: RELATION TO THE INCIDENT IN SARMIN AND GENDER DISTRIBUTION OF INTERVIEWEES**

	Interviewee	Male	Female
Treating physicians	3	3	
Nurses	1	1	
First responders	3	3	
Paramedics	2	2	
Casualty	6	5	1
Witnesses	5	5	
<b>Total</b>	<b>20</b>	<b>19</b>	<b>1</b>

**FIGURE 11: DISTRIBUTION OF INTERVIEWEES IN RELATION TO THE INCIDENT IN SARMIN, 16 MARCH 2015**



**TABLE 7: CHRONOLOGY OF INCIDENTS IN SARMIN**

Incident	Date	Approximate time	No. of patients	Deaths
First	16 March	22:30-23:00	26	0
Second	16 March	22:30-23:00	6	6
Third	23 March	Late at night	5	0
Fourth	26 March	22:00-23:00	6	0
Fifth	16 May	15:30-16:00	4	0

3.51 Witnesses who were close to the impact points and who were exposed described smelling the typical odour of chlorine immediately after the impact and tried to escape. They described the smell as irritating, similar to chlorine used as a household cleaning agent but much more intense.

3.52 This odour immediately induced coughing and a feeling of suffocation among all who were exposed. Some of the first responders who managed the exposed persons were also cross-contaminated from the casualties and suffered symptoms of exposure.

3.53 The FFM was informed that after the chemical incidents were reported, ambulances attached to Sarmin field hospital were dispatched to rescue those who had been exposed.

3.54 Simultaneously, volunteers from the neighbourhood used their private vehicles to evacuate people to the Sarmin field hospital. During the incidents of 16 March 2015, because of the load and the previous incident in Qmenas village, some of the patients were evacuated to both the Sarmin and Saraqib field hospitals.

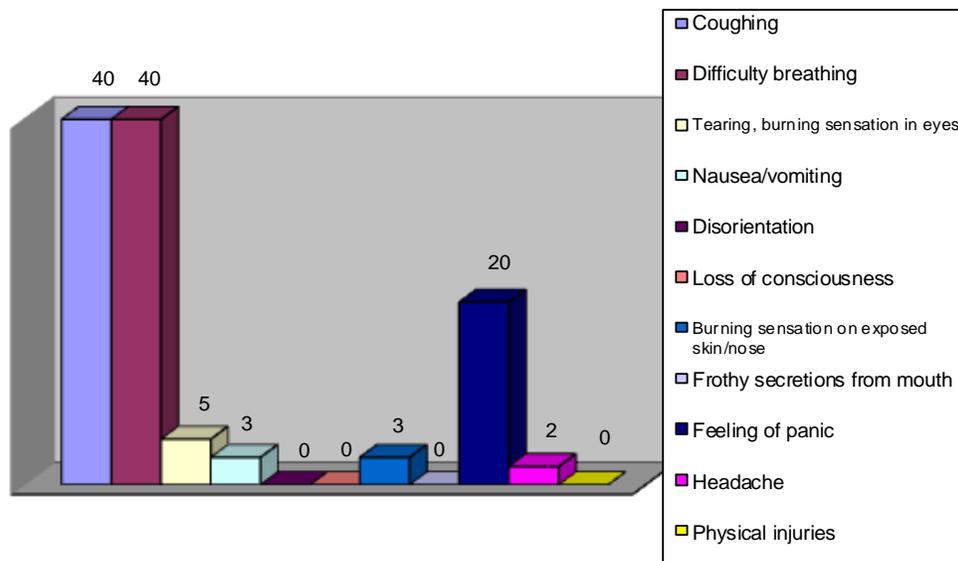
3.55 From the testimonies collected, the FFM found that the predominant symptoms among those who were exposed were coughing and shortness of breath. Only a few of the exposed persons reported a burning sensation on exposed skin and a mild burning sensation/tearing of the eyes.

3.56 The clinical examination, signs, and symptoms as observed included coughing, difficulty breathing, and tearing.

**TABLE 8: SUMMARY OF THE SIGNS AND SYMPTOMS REPORTED BY THE TREATING PHYSICIANS**

Symptom	16 March		16 March	23 March	26 March	16 May
	Sarmin	Saraqib				
Coughing	29	11	2	5	6	4
Difficulty breathing	29	11	2	5	6	4
Tearing, burning sensation in eyes	5	0	0	0	0	1
Nausea/vomiting	3	0	0	0	0	0
Disorientation	0	0	3	0	0	0
Loss of consciousness	0	0	3	0	0	0
Burning sensation on exposed skin/nose	3	0	0	0	0	0
Frothy secretions from mouth	0	0	1	0	0	0
Feeling of panic	20	0	0	0	0	0
Headache	2	0	0	0	0	0
Physical injuries	0	0	0	0	0	0
Death	0	0	6	0	0	0
<b>Total cases</b>	<b>29</b>	<b>11</b>	<b>6</b>	<b>5</b>	<b>6</b>	<b>4</b>

**FIGURE 12: SIGNS AND SYMPTOMS RELATING TO THE FIRST INCIDENT IN SARMIN, 16 MARCH 2015**



3.57 On arrival at both hospitals, most patients were decontaminated by washing the exposed area(s) of skin with water. Some interviewees reported a chlorine-like odour emanating from the casualties as well as a red/pink colouration of the rinse water.

3.58 One of the treating physicians informed the FFM that a large number of individuals who sought medical aid had no adverse clinical signs other than anxiety. Because they were in a state of panic, the first aid provided was mostly decontamination, moving to fresh air, oxygen therapy, and giving reassurance. The treatment provided to those who were exhibiting clinical signs included the administration of oxygen, nebulisation with the bronchodilator salbutamol, and the intravenous steroids hydrocortisone and dexamethasone, along with intravenous fluids. The treatment provided was effective and the patients' medical status improved quickly.

3.59 The FFM was informed that the ambulance drivers and first responders who had participated in the rescue and evacuation of people to the hospital were also affected, some of them requiring the administration of oxygen.

3.60 Twenty patients were considered as mild cases, four as moderate, three as severe, and three arrived to the hospital dead. None of the affected individuals in the described attack had any signs of physical trauma on their bodies, but only suffered from the effects of the suspected toxic chemical.

3.61 The mild cases responded well to the administration of oxygen. Those with moderate symptoms also benefitted from nebulisation with the bronchodilator salbutamol and the intravenous steroids hydrocortisone or dexamethasone. For the

severe cases, because the initial response to treatment was poor, treating physicians attempted intubation.

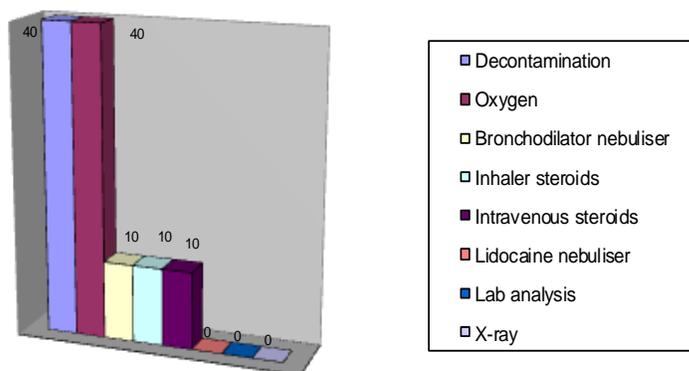
3.62 Neither a lab exam nor an X-ray was requested by the treating physicians for any of the cases.

3.63 In total, six severe cases did not survive the exposure. All of the other cases were discharged from the hospital after a maximum of three hours.

**TABLE 9: TABLE OF TREATMENT OF CASUALTIES IN SARMIN, 16 MARCH 2015**

Decontamination	29 + 11
Oxygen	29 + 11
Bronchodilator nebuliser	10
Inhaler steroids	10
Intravenous steroids	10
Lidocaine nebuliser	0
Lab analysis	0
X-ray	0

**FIGURE 13: MANAGEMENT OF CASES IN SARMIN, 16 MARCH 2015**



3.64 The hospital staff registered the names of the patients. The FFM requested copies of the patient registration book or medical files, but was not provided with them.

3.65 However, a number of videos of incidents recorded on different dates by the interviewees themselves were provided to the FFM. These videos show people suffering, and being decontaminated and treated. The interviewed treating physicians and other interviewees can be seen in these videos.

3.66 The FFM teams asked the interviewees who had been exposed about their current medical status. None of the interviewees had any remaining symptoms from

the time of exposure, and all were in good physical health at the time of the interviews.

*Biomedical samples*

3.67 For all of the alleged incidents that occurred in Sarmin as reported above, only two biomedical samples were taken on 16 March 2015.

3.68 One health worker, who was in Sarmin hospital on 16 March 2015, informed the FFM team that biomedical samples had been taken from the victims by a treating physician. The samples were blood and hair taken from one of the dead casualties, and were sent elsewhere for analysis. The FFM team was given access neither to the analysis results nor to the samples to conduct their own analysis.

*Environmental samples*

3.69 Samples, which included environmental samples and remnants of devices, were received by the FFM team on two different dates. The first group of samples was received by the team on 22 May 2015; the second group on 23 July 2015. According to the interviewees' statements, the samples were originally collected by the interviewees and were held in a different location within Sarmin.

3.70 Some samples were accompanied by partial documentation of the chain of custody prior to delivery to the FFM. Although this documentation provided some degree of confidence-building, the entire chain of custody could not be verified and, therefore, the possibility of cross-contamination could not be ruled out. Accordingly, as already explained in Section 2 above, the FFM regarded the samples as tertiary evidence.

3.71 A total of 17 samples were delivered to the FFM team. Six samples (05SDS, 07SDS, 08SDS, 09SDS, 11SDS, and 12SDS) were collected by the witnesses in relation to different alleged incidents. Eleven samples (13SDS, 14SDS, 15SDS, 16SDS, 17SDS, 18SDS, 19SDS, 20SLS, 21SDS, 22SDS, and 23SDS) were collected from the house of the deceased victims of the alleged incident of 16 March 2015.

3.72 Sample 24SLS was actually two subsamples of soil from Sarmin. The FFM team requested that these be taken one day prior the delivery date and that they should be collected at a distance of 100 m and 200 m, respectively, from the impact point of the first incident of 16 March 2015. Those two samples were a background reference for the team.

TABLE 10: ENVIRONMENTAL SAMPLES ANALYSIS RESULTS

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
22/05/2015 20150522102805 05SDS	Empty HCFC container 	Extraction of 1.4 g of debris from outside surface of container with 2 mL dichloromethane-d2	GC-EI-MS/dFPD	<ul style="list-style-type: none"> <li>- High conc. of Trinitrotoluene (TNT)</li> <li>- Oxidation products of butylated hydroxytoluene (BHT)</li> <li>- Polycyclic aromatic hydrocarbons (PAHs)</li> </ul>
		Extraction of inside surface of container with 10 mL n-hexane	GC-EI-MS/dFPD	<ul style="list-style-type: none"> <li>- Trinitrotoluene (TNT)</li> <li>- Oxidation products of butylated hydroxytoluene (BHT)</li> <li>- Polychlorinated aromatic hydrocarbons (PCAHS)</li> </ul>
		Extraction of inside surface of container with 10 mL deuterium oxide	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- Fe [mg/L extract]: 1260 (ICP-OES)</li> <li>- Zn [mg/L extract]: 380 (ICP-OES)</li> <li>- K [mg/L extract]: 60 (ICP-MS)</li> <li>- Mn [mg/L extract]: 50 (ICP-MS)</li> <li>- Bromide [mg/L extract]: 3 (IC)</li> <li>- Chloride [mg/L extract]: 3700 (IC)</li> </ul>
		Extraction of 160 mg of debris from outside surface of container with 20 mL water	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- K [mg/kg debris]: 14200 (ICP-MS)</li> <li>- Mn [mg/kg debris]: 2 (ICP-MS)</li> <li>- Bromide [mg/kg debris]: 40 (IC)</li> <li>- Chloride [mg/kg debris]: 25100 (IC)</li> </ul>
22/05/2015 20150522102807 07SDS	Black brown plastic container 	Cutting piece of plastic container and cleaning of surface	FTIR spectroscopy and Differential Scanning Calorimetry (DSC)	Polymer identified as PET (Polyethylene terephthalate)

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
22/05/2015 20150522102808 08SDS	Ruptured HCFC + plastic containers 	None	XRF spectroscopy on outside surface of CFC container	<ul style="list-style-type: none"> <li>- K [%]: 0.3</li> <li>- Mn [%]: 1.3</li> <li>- Cl [%]: 1.0</li> </ul>
		None	XRF spectroscopy on inside surface of HCFC container	<ul style="list-style-type: none"> <li>- K [%]: 0.2</li> <li>- Mn [%]: 0.9</li> <li>- Cl [%]: 1.0</li> </ul>
		Sanding off debris on the metal surface of HCFC container	XRF spectroscopy on cleaned metal surface	<ul style="list-style-type: none"> <li>- Fe [%]: &gt; 99</li> </ul>
		Extraction of 100 mg debris from outside surface of HCFC container with 2 mL dichloromethane-d2	GC-EI-MS/dFPD	<ul style="list-style-type: none"> <li>- High conc. of Trinitrotoluene (TNT)</li> <li>- Oxidation products of butylated hydroxytoluene (BHT)</li> <li>- PAHs</li> <li>- PCAHs</li> </ul>
		Extraction of 100 mg debris from inside surface of HCFC container with 2 mL dichloromethane-d2	GC-EI-MS/dFPD	<ul style="list-style-type: none"> <li>- Trinitrotoluene (TNT)</li> <li>- Oxidation products of butylated hydroxytoluene (BHT)</li> <li>- PAHs</li> <li>- PCAHs</li> </ul>
		Extraction of 100 mg debris from rust-coloured area on outside surface of HCFC container with 20 mL water	ICP-MS IC	<ul style="list-style-type: none"> <li>- K [mg/kg debris]: 2600 (ICP-MS)</li> <li>- Mn [mg/kg debris]: &lt;10 (ICP-MS)</li> <li>- Bromide [mg/kg debris]: 500 (IC)</li> <li>- Chloride [mg/kg debris]: 55000 (IC)</li> </ul>
		Extraction of 100 mg debris from inside surface (area 1) of HCFC container with 20 mL water	ICP-MS IC	<ul style="list-style-type: none"> <li>- K [mg/kg debris]: 4200 (ICP-MS)</li> <li>- Mn [mg/kg debris]: 140 (ICP-MS)</li> <li>- Bromide [mg/kg debris]: 20 (IC)</li> <li>- Chloride [mg/kg debris]: 8800 (IC)</li> </ul>

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
		Extraction of 100mg debris from inside surface (area 2) of HCFC container with 20 mL water	ICP-MS IC	<ul style="list-style-type: none"> <li>- K [mg/kg debris]: 3200 (ICP-MS)</li> <li>- Mn [mg/kg debris]: 170 (ICP-MS)</li> <li>- Bromide [mg/kg debris]: 20 (IC)</li> <li>- Chloride [mg/kg debris]: 9700 (IC)</li> </ul>
		Extraction of 70 mg debris from area around hole on top of outside surface of HCFC container with 20mL water	ICP-MS IC	<ul style="list-style-type: none"> <li>- K [mg/kg debris]: 1400 (ICP-MS)</li> <li>- Mn [mg/kg debris]: &lt;10 (ICP-MS)</li> <li>- Bromide [mg/kg debris]: &lt;10 (IC)</li> <li>- Chloride [mg/kg debris]: 3300 (IC)</li> </ul>
22/05/2015 20150522102809 09SDS	Clothes from a victim <sup>3</sup> 			
22/05/2015 20150522102811 11SDS	Ruptured HCFC container 	None	XRF spectroscopy on outside surface	<ul style="list-style-type: none"> <li>- K [%]: 0.3</li> <li>- Mn [%]: 2.9</li> <li>- Cl [%]: 7.8</li> <li>- Ti [%]: 3.0</li> </ul>
		None	XRF spectroscopy on inside surface	<ul style="list-style-type: none"> <li>- K [%]: 0.4</li> <li>- Mn [%]: 0.6</li> <li>- Cl [%]: 0.2</li> </ul>
		Sanding off debris on the metal surface	XRF spectroscopy on cleaned metal surface	<ul style="list-style-type: none"> <li>- Fe [%]: &gt; 99</li> </ul>

<sup>3</sup> The victim was not severely exposed to the chemical; therefore the laboratory was tasked with preserving this sample for a specific tracer if the environmental samples results did not offer any specific chemical or degradation product.

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
22/05/2015 20150522102812 12SDS	Ruptured HCFC + plastic containers 	None	XRF spectroscopy on outside surface of HCFC container	- K [%]: 1.4 - Mn [%]: 2.8 - Cl [%]: 4.6
		None	XRF spectroscopy on inside surface of HCFC container	- K [%]: 1.8 - Mn [%]: 1.4 - Cl [%]: 4.4
		Sanding off debris on the metal surface of HCFC container	XRF spectroscopy on cleaned metal surface	- Fe [%]: > 99
		Extraction of 200 mg of debris from plastic container with 2 mL dichloro- methane-d2	GC-EI-MS/dFPD	- High conc. of Trinitrotoluene (TNT) - Oxidation products of butylated hydroxytoluene (BHT) - PAHs
		Extraction of 200 mg of debris from HCFC container with 2 mL dichloro- methane-d2	GC-EI-MS/dFPD	- High conc. of Trinitrotoluene (TNT) - Oxidation products of butylated hydroxytoluene (BHT) - PAHs - PCAHs
23/07/2015 20150723100801 13SDS	Key 	None	XRF spectroscopy on surface	- K [mg/kg]: < LOD - Mn [mg/kg]: 3500
		Extraction of 17.2 mg of corrosion debris from key with 2mL dichloromethane- d2.	GC-EI-MS/dFPD GC-AED	- Oxidation products of BHT
		Extraction of 18.9 mg of corrosion debris from key with 3 mL deuterium oxide. Dilution of 1 mL of extract with 20 mL water.	ICP-MS ICP-OES IC	- Fe [mg/kg debris]: 2000 (OES) - K [mg/kg debris]: 350 (OES) - Mn [mg/kg debris]: 25 (MS) - Chloride [mg/kg debris]: 1700 (IC)
		Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1 mL of extract with 20 mL water.		- Fe [mg/kg debris]: 180000 (OES) - K [mg/kg debris]: 200 (OES) - Mn [mg/kg debris]: 1100 (MS)

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
	Teaspoon 	<p>XRF spectroscopy on surface</p> <p>Extraction of 8.7 mg of corrosion debris from teaspoon with 2 mL dichloromethane-d2.</p> <p>Extraction of 7.5 mg of corrosion debris from teaspoon with 3 mL deuterium oxide. Dilution of 1mL of extract with 20 mL water.</p> <p>Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.</p>	<p>XRF spectroscopy on surface</p> <p>GC-EI-MS/dFPD GC-AED</p> <p>ICP-MS ICP-OES IC</p>	<p>- K [mg/kg]: &lt; LOD - Mn [mg/kg]: 2'500</p> <p>- Oxidation products of BHT</p> <p>- Fe [mg/kg debris]: 1500 (OES) - K [mg/kg debris]: 2500 (OES) - Mn [mg/kg debris]: 300 (MS) - Chloride [mg/kg debris]: 6000 (IC)</p> <p>- Fe [mg/kg debris]: 9000 (OES) - K [mg/kg debris]: 1000 (OES) - Mn [mg/kg debris]: 400 (MS)</p>
23/07/2015 20150723100802 14SDS	Metal Rod from level float of water tank 	<p>None</p> <p>Extraction of 98.7 mg of corrosion debris from metal rod of level float with 2 mL dichloromethane-d2.</p> <p>Extraction of 99.7 mg of corrosion debris from metal rod of level float with 3 mL deuterium oxide. Dilution of 1 mL of extract with 20 mL water.</p> <p>Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1 mL of extract with 20 mL water.</p>	<p>XRF spectroscopy on surface</p> <p>GC-EI-MS/dFPD GC-AED</p> <p>ICP-MS ICP-OES IC</p>	<p>- K [mg/kg]: &lt; LOD - Mn [mg/kg]: 3000 - S [mg/kg]: 75000</p> <p>- Fe [mg/kg debris]: &lt; LOD (OES) - K [mg/kg debris]: &lt; LOD (OES) - Mn [mg/kg debris]: &lt; LOD (MS) - Chloride [mg/kg debris]: 800 (IC)</p> <p>- Fe [mg/kg debris]: 50000 (OES) - K [mg/kg debris]: &lt; LOD (OES) - Mn [mg/kg debris]: 400 (MS)</p>

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
	Floater from level float of water tank 	None  Rinsing of floater with 5 mL acetonitrile-d3.	XRF spectroscopy on surface  GC-EI-MS/dFPD GC-AED	- K [mg/kg]: < LOD - Mn [mg/kg]: 16'000  - Diazinon - Oxidation products of BHT - PAHs
23/07/2015 20150723100803 15SDS	Electrical light bulb 	None  Extraction of 11.3 mg of debris from light bulb (luminous element and thread) with 2 mL dichloromethane-d2.  Extraction of 8.7 mg of debris from light bulb with 3 mL deuterium oxide. Dilution of 1 mL of extract with 20 mL water.  Re-extraction of debris with 3mL 10% hydrochloric acid. Dilution of 1 mL of extract with 20 mL water.	XRF spectroscopy on surface  GC-EI-MS/dFPD GC-AED  ICP-MS ICP-OES IC	- K [mg/kg]: < LOD - Mn [mg/kg]: 20000  - TNT - Oxidation products of BHT  - Fe [mg/kg debris]: < LOD (OES) - K [mg/kg debris]: 33000 (OES) - Mn [mg/kg debris]: < LOD (MS) - Chloride [mg/kg debris]: 37000 (IC)  - Fe [mg/kg debris]: 7500 (OES) - K [mg/kg debris]: 13000 (OES) - Mn [mg/kg debris]: 32000 (MS)

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
23/07/2015 20150723100804 16SDS	Two pieces of construction material (piece #2 with dark coloured debris on surface used for analysis)  	None	XRF spectroscopy on surface (piece 1)	- K [mg/kg]: 1200 - Mn [mg/kg]: 11000
		Extraction of 45.7 mg of debris from dark coloured surface with 2 mL dichloromethane-d2.	XRF spectroscopy on surface (piece 2)	- K [mg/kg]: 6200 - Mn [mg/kg]: 36000
		Extraction of 51.2mg of debris from dark coloured surface with 3mL deuterium oxide. Dilution of 1mL of extract with 20mL water.  Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.	GC-EI-MS/dFPD GC-AED	- Fe [mg/kg debris]: < LOD (OES) - K [mg/kg debris]: 33000 (OES) - Mn [mg/kg debris]: < LOD (MS) - Chloride [mg/kg debris]: 37'000 (IC)  - Fe [mg/kg debris]: 7500 (OES) - K [mg/kg debris]: 13000 (OES) - Mn [mg/kg debris]: 32000 (MS)
		None	ICP-MS ICP-OES IC	
23/07/2015 20150723100805 17SDS	Part of an exploded HCFC gas cylinder  	None	XRF spectroscopy on inside surface of HCFC container (different spots)	- K [mg/kg]: < LOD - Mn [mg/kg]: 2000-6000
		Extraction of 55.7 mg of corrosion debris from inside surface of HCFC container with 2 mL dichloromethane-d2 (spot #1).	GC-EI-MS/dFPD GC-AED	

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
		Extraction of 46.1 mg of corrosion debris from inside surface of HCFC container with 2 mL dichloromethane-d2 (spot #2).	GC-EI-MS/dFPD GC-AED	
		Extraction of 99.0 mg of corrosion debris from inside surface of HCFC container with 2 mL dichloromethane-d2 (spot #3).	GC-EI-MS/dFPD GC-AED	
		Extraction of 50.2 mg of corrosion debris from inside surface of HCFC container with 3 mL deuterium oxide (spot #1). Dilution of 1 mL of extract with 20 mL water.  Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- Fe [mg/kg debris]: &lt; LOD (OES)</li> <li>- K [mg/kg debris]: 150 (OES)</li> <li>- Mn [mg/kg debris]: &lt; LOD (MS)</li> <li>- Chloride [mg/kg debris]: 1200 (IC)</li>   <li>- Fe [mg/kg debris]: 60000 (OES)</li> <li>- K [mg/kg debris]: 150 (OES)</li> <li>- Mn [mg/kg debris]: 300 (MS)</li> </ul>
		Extraction of 48.8 mg of corrosion debris from inside surface of HCFC container with 3 mL deuterium oxide (spot #2). Dilution of 1 mL of extract with 20 mL water.  Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- Fe [mg/kg debris]: &lt; LOD (OES)</li> <li>- K [mg/kg debris]: 200 (OES)</li> <li>- Mn [mg/kg debris]: &lt; LOD (MS)</li> <li>- Chloride [mg/kg debris]: 400 (IC)</li>   <li>- Fe [mg/kg debris]: 120000 (OES)</li> <li>- K [mg/kg debris]: 100 (OES)</li> <li>- Mn [mg/kg debris]: 300 (MS)</li> </ul>
		Extraction of 99.0 mg of corrosion debris from inside surface of HCFC container with 3mL deuterium oxide (spot #3). Dilution of 1 mL of extract with 20 mL water.	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- Fe [mg/kg debris]: &lt; LOD (OES)</li> <li>- K [mg/kg debris]: 700 (OES)</li> <li>- Mn [mg/kg debris]: &lt; LOD (MS)</li> <li>- Chloride [mg/kg debris]: 1400 (IC)</li> </ul>

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
		Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.		<ul style="list-style-type: none"> <li>- Fe [mg/kg debris]: 7000 (OES)</li> <li>- K [mg/kg debris]: 1000 (OES)</li> <li>- Mn [mg/kg debris]: 1'100 (MS)</li> </ul>
23/07/2015 20150723100806 18SDS	Part of an exploded HCFC gas cylinder	None	XRF spectroscopy on outside surface of HCFC container	<ul style="list-style-type: none"> <li>- K [mg/kg]: &lt; LOD</li> <li>- Mn [mg/kg]: 40'000</li> </ul>
		Extraction of 100.1 mg of corrosion debris from outside surface of HCFC container with 2 mL dichloro-methane-d2.	GC-EI-MS/dFPD GC-AED	
		Extraction of 100.6 mg of corrosion debris from outside surface of HCFC container with 3mL deuterium oxide. Dilution of 1mL of extract with 20 mL water.  Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- Fe [mg/kg debris]: &lt; LOD (OES)</li> <li>- K [mg/kg debris]: 400 (OES)</li> <li>- Mn [mg/kg debris]: &lt; LOD (MS)</li> <li>- Chloride [mg/kg debris]: 300 (IC)</li>   <li>- Fe [mg/kg debris]: 60000 (OES)</li> <li>- K [mg/kg debris]: 1400 (OES)</li> <li>- Mn [mg/kg debris]: 8500 (MS)</li> </ul>
		None	XRF spectroscopy on inside surface of HCFC container	<ul style="list-style-type: none"> <li>- K [mg/kg]: &lt; LOD</li> <li>- Mn [mg/kg]: 2500</li> </ul>
		Extraction of 96.5 mg of corrosion debris from inside surface of HCFC container with 2 mL dichloromethane-d2.	GC-EI-MS/dFPD GC-AED	<ul style="list-style-type: none"> <li>- Oxidation products of BHT</li> <li>- PAHs</li> </ul>
		Extraction of 81.9 mg of corrosion debris from inside surface of HCFC container with 3 mL deuterium oxide. Dilution of 1 mL of extract with 20 mL water.	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- Fe [mg/kg debris]: &lt; LOD (OES)</li> <li>- K [mg/kg debris]: 600 (OES)</li> <li>- Mn [mg/kg debris]: 40 (MS)</li> <li>- Chloride [mg/kg debris]: 1500 (IC)</li> </ul>

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
		Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.		<ul style="list-style-type: none"> <li>- Fe [mg/kg debris]: 90000 (OES)</li> <li>- K [mg/kg debris]: 500 (OES)</li> <li>- Mn [mg/kg debris]: 4000 (MS)</li> </ul>
23/07/2015 20150723100807 19SDS	One piece of wood (dark coloured debris on surface used for analysis) 	None	XRF spectroscopy on surface	<ul style="list-style-type: none"> <li>- K [mg/kg]: 32000</li> <li>- Mn [mg/kg]: 11000</li> </ul>
		Extraction of 21.2 mg of debris from wood piece with 2 mL dichloromethane-d2.	GC-EI-MS/dFPD GC-AED	<ul style="list-style-type: none"> <li>- Diazinon</li> <li>- Oxidation products of BHT</li> </ul>
		Extraction of 21.2 mg of debris from wood piece with 3 mL deuterium oxide. Dilution of 1mL of extract with 20mL water.  Re-extraction of debris with 3 mL 10% hydrochloric acid. Dilution of 1mL of extract with 20 mL water.	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- K [mg/kg debris]: 5000 (OES)</li> <li>- Mn [mg/kg debris]: 250 (MS)</li> <li>- Chloride [mg/kg debris]: 4600 (IC)</li> <li>- K [mg/kg debris]: 3000 (OES)</li> <li>- Mn [mg/kg debris]: 30000 (MS)</li> </ul>
23/07/2015 20150723100808 20SLS	Soil sample (sand and stones) 	Transfer of sample in XRF cup.	XRF spectroscopy on soil surface	<ul style="list-style-type: none"> <li>- K [mg/kg]: 50000</li> <li>- Mn [mg/kg]: 60000</li> </ul> (stoichiometric ratio K/Mn ~1:1)
		Extraction of 5 g soil with 5 mL dichloromethane-d2.	GC-EI-MS/dFPD GC-AED	<ul style="list-style-type: none"> <li>- TNT</li> <li>- Oxidation products of BHT</li> <li>- PAHs</li> <li>- PCAHs</li> </ul>
		Extraction of 5 g soil with 5 mL deuterium oxide. Dilution of 1mL of extract with 20 mL water.  Re-dilution of 0.1 mL of extract with 10 mL water for ICP-OES analysis.	ICP-MS ICP-OES IC	<ul style="list-style-type: none"> <li>- K [mg/kg]: 14000 (OES, 1:100)</li> <li>- Mn [mg/kg]: 25 (MS)</li> <li>- Chloride [mg/kg]: 21000 (IC)</li> </ul>

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
23/07/2015 20150723100809 21SDS	Pieces of wood (+plastic container)  	None	XRF spectroscopy on surface (container)	- K [mg/kg]: 18000 - Mn [mg/kg]: 24000 (stoichiometric ratio K/Mn ~1:1)
		Extraction of 2.0 g of splinters of wood with 5 mL dichloromethane-d <sub>2</sub> .	XRF spectroscopy on surface (wood pieces)	- K [mg/kg]: 28000 - Mn [mg/kg]: 18000
		Extraction of 2.0 g of splinters of wood with 5 mL deuterium oxide. Dilution of 1 mL of extract with 20 mL water.  Re-extraction of splinters of wood with 5 mL 10% hydrochloric acid. Dilution of 1 mL of extract with 20 mL water.	GC-EI-MS/dFPD GC-AED	- $\alpha$ -Pinene and bornyl chloride (bornyl chloride is a reaction product of $\alpha$ - pinene with chlorinating agents) - TNT - PCAHs
23/07/2015 20150723100810 22SDS	Plastic containers  	None	XRF spectroscopy on surface	- K [mg/kg]: 70000 - Mn [mg/kg]: 90000 (stoichiometric ratio K/Mn ~1:1)

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
		Cutting piece of plastic container and cleaning of surface.	FTIR spectroscopy	- Polymer identified as PET (polyethylene terephthalate)
		Cutting piece (280 mg) of plastic container and extraction with 2 mL dichloromethane-d2.	GC-EI-MS/dFPD GC-AED	- TNT - Oxidation products of BHT - PAHs - PCAHs
		Cutting piece (280 mg) of plastic container and extraction with 3 mL deuterium oxide. Dilution of 1 mL of extract with 20 mL water.  Re-extraction of container piece with 3 mL 10% hydrochloric acid. Dilution of 1 mL of extract with 20 mL water.	ICP-MS ICP-OES IC	- K [mg/kg]: 4500 (OES) - Mn [mg/kg]: < LOD (MS) - Chloride [mg/kg debris]: 3500 (IC)  - K [mg/kg]: 1600 (OES) - Mn [mg/kg]: 3700 (MS)
23/07/2015 20150723100811 23SDS	Jacket of a victim 	None	XRF spectroscopy on sleeve surface	- K [mg/kg]: 11000 - Mn [mg/kg]: 5000
		Cutting piece of jacket (950 mg) and extraction with 5 mL acetonitrile-d3.	GC-EI-MS/dFPD GC-AED	- PAHs
		Cutting piece of jacket (920 mg) and extraction with 3 mL deuterium oxide. Dilution of 1 mL of extract with 20 mL water.  Re-extraction of jacket piece with 3 mL 10% hydrochloric acid. Dilution of 1 mL of extract with 20 mL water.	ICP-MS ICP-OES IC	- K [mg/kg]: 4000 (OES) - Mn [mg/kg]: 1200 (MS) - Chloride [mg/kg]: 13000 (IC)  - K [mg/kg]: 2100 (OES) - Mn [mg/kg]: 2300 (MS)

Date of receipt; OPCW evidence reference number; and sample code	Sample description	Sample preparation	Technique	Result
23/07/2015 20150723100812 24SLS	2 Soil samples taken from Sarmin as background sample (blank sample) from two locations (Location 1 and location 2) 	Transfer of sample in XRF cup.	XRF spectroscopy on soil surface (location 1)	- K [mg/kg]: 15000 - Mn [mg/kg]: 350
			XRF spectroscopy on soil surface (location 2)	- K [mg/kg]: 9000 - Mn [mg/kg]: 350
		Extraction of 5 g soil with 5 mL dichloromethane-d2.	GC-EI-MS/dFPD GC-AED (location 1)	- PAHs
			GC-EI-MS/dFPD GC-AED (location 2)	- Oxidation products of BHT - PAHs
		Extraction of 5 g soil with 5mL to 7 ml deuterium oxide.	ICP-MS ICP-OES IC (location 1)	- K [mg/kg]: 500 (OES) - Mn [mg/kg]: < LOD (MS) - Chloride [mg/kg]: 300 (IC)
		Dilution of 1 mL of extract with 20 mL water.	ICP-MS ICP-OES IC (location 2)	- K [mg/kg]: < LOD (OES) - Mn [mg/kg]: < LOD (MS) - Chloride [mg/kg]: 30 (IC)

**BHT:** Butylated hydroxytoluene, **HCFC:** hydrochlorofluorocarbon, **Cl:** Chloride, **Fe:** Iron, **FTIR:** Fourier Transform Infrared Spectroscopy, **GC-EI-MS/dFPD:** Gas Chromatography — Mass Spectrometry/dual Flame Photometry Detection, **IC:** Ion Chromatography, **ICP-MS:** Inductively Coupled Plasma Mass Spectrometry, **ICP-OES:** Inductively Coupled Plasma Optical Emission Spectrometry, **K:** Potassium, **LOD:** Limit of Detection, **Mn:** Manganese, **NMR:** Nuclear Magnetic Resonance Spectroscopy, **PAHs:** Polycyclic aromatic hydrocarbons, **PCAHs:** Polychlorinated aromatic hydrocarbons, **PET:** Polyethylene terephthalate, **S:** Sulfur, **TNT:** Trinitrotoluene, **XRF:** X-ray Fluorescence.

\*\* All photographs from samples received on 23/07/2015, courtesy of Spiez Laboratories\*\*

### Binnish

3.73 Binnish is a small city in the Idlib Governorate of the Syrian Arab Republic. Other villages close to Binnish include Al-Fu'ah village at 2 km NWN and Taoum village at 4 km ENE.

3.74 The FFM interviewed and collected the testimony of a treating physician about the alleged incident of 23 March 2015.

**TABLE 11: INFORMATION ON THE ALLEGED INCIDENT IN BINNISH**

Date	Approximate time	Weather conditions
23 March 2015	19:00-20:00	Stable temperatures around 14°C between 19:00 and midnight, with 55% to 72% humidity. The wind direction was variable at 1 to 5 m/s.

3.75 Figure 14 below shows the approximate alleged impact point of the device, as derived from the interviewee.

**FIGURE 14: APPROXIMATE ALLEGED IMPACT POINT OF THE DEVICE**



**Narrative**

3.76 The FFM team interviewed only one person from Binnish, who was a treating physician at the time of the alleged incident.

3.77 At the time of the incident, the city was not under the control of the government. The interviewee reported frequent airborne, artillery, and mortar attacks. A large number of families were displaced from the village and were located elsewhere. The population of the city before the crisis was approximately 40,000. By March 2015, the population was reduced to around 5,000 due to its close proximity to the front line 7 km to the west of the city.

3.78 On 23 March 2015 at around 19:00, one item was dropped on the city in the south-eastern area of the village in agricultural land. The physician was in the field hospital; he did not hear any explosion and was informed of the incident through the local early-warning methods, including the use of hand-held radios. There was no mobile telephone coverage in this village at the time of the incident.

3.79 Binnish field hospital registered 21 patients related to the incident on 23 March. Out of these 21, 10 were mild cases, 10 were moderate cases, and one was identified as a severe case. No deaths were reported to the FFM team.

3.80 The decontamination of patients, including washing of the exposed area of skin, was done for all cases. This decontamination was conducted using water outside the hospital, five to 10 m from the emergency room. The physician did not smell chlorine odour emanating from the clothing but was informed of the smell by the patients.

3.81 Twenty-four hours later, the interviewee visited the place where the item allegedly hit the ground. He did not see any remnants of the item and reported: *“I saw that there was a wheat field and the wheat turned yellow on an area of about 50 metres, all yellow. The yellow colour was clearly visible”*.

**Epidemiological analysis**

3.82 Binnish has one field hospital, which is in one of the buildings in the village and is intended specifically for the medical needs of this village, including the treatment of traumatic war injuries. There are also four private clinics (none of them are known to have received cases from the alleged chemical incidents). The hospital has a staff of eight doctors specialised in the fields of general surgery, urology, orthopaedics, internal medicine, dermatology, and gynaecology, as well as 15 other staff including seven certified nurses and eight field-trained nurses. The hospital staff members do not have formal training in the management of injuries resulting from chemical incidents. Furthermore, the structure of the hospital has been augmented continuously since its establishment. The resources available at the hospital include a laboratory, radiology department, pharmacy, two operating theatres, a delivery room, emergency room with a total of eight in-patient beds, four oxygen cylinders, and eight nebulisers. All individuals who present to this field hospital for routine illness, diseases, and war injuries are registered, and all medical records are maintained.

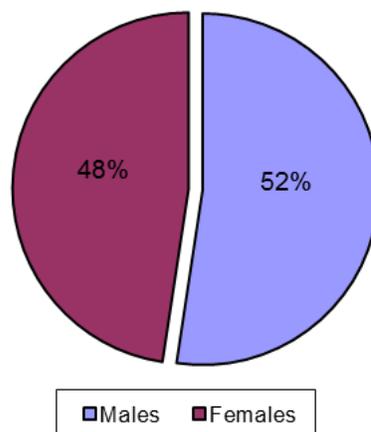
3.83 The field hospital received all of the approximately 21 patients from the alleged chemical incident. The physician informed the FFM that the hospital staff were able to register most, but not all, of the names. A copy of a list of patients with

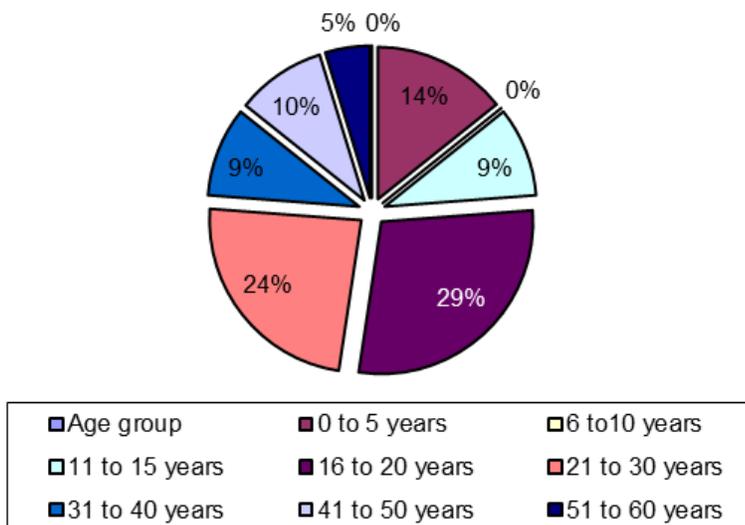
the stamp of the hospital (but not the patient registration book, and no medical files) was provided showing the name, age, and gender. The age distribution of the 21 patients recorded as having been treated at the field hospital is provided in the table below:

**TABLE 12: PATIENT DISTRIBUTION ACCORDING TO AGE GROUP**

Age group	Total	Males	Females
0 to 5 years	3	2	1
6 to 10 years	0	0	0
11 to 15 years	2	1	1
16 to 20 years	6	4	2
21 to 30 years	5	3	2
31 to 40 years	2		2
41 to 50 years	2	1	1
51 to 60 years	1		1
<b>Total</b>	<b>21</b>	<b>11</b>	<b>10</b>

**FIGURE 15: DISTRIBUTION OF CASES BY GENDER**



**FIGURE 16: DISTRIBUTION OF CASES BY AGE**

3.84 The clinical examination demonstrated that most of the cases presented with the following symptoms: coughing, difficulty breathing, and drowsiness. Some of the signs were due to anxiety and psychosomatic stress. The dyspnoea in the moderate cases was grade 1. The physician classified the dyspnoea in four grades:

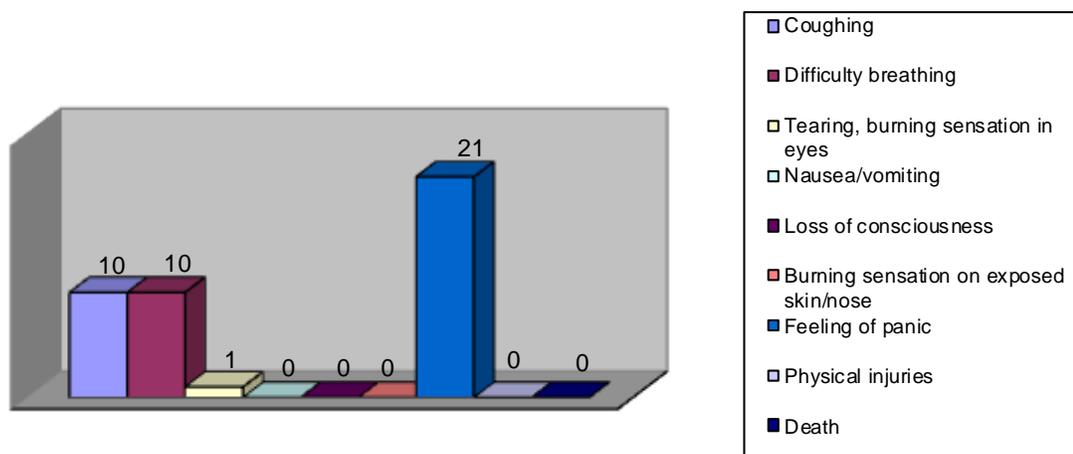
- Grade 1: provoked by severe exercise;
- Grade 2: provoked by moderate exercise;
- Grade 3: provoked by mild exercise; and
- Grade 4: at rest.

3.85 The one severe case presented with severe anxiety, severe coughing and resistance, difficulty breathing, shortness of breath, severe wheezing, mild eye irritation. The spread of symptoms is indicated in the table below.

**TABLE 13: SYMPTOMS RELATING TO THE INCIDENT IN BINNISH**

Symptom	Binnish
Coughing	10
Difficulty breathing	10
Tearing, burning sensation in eyes	1
Nausea/vomiting	0
Loss of consciousness	0
Burning sensation on exposed skin/nose	0
Feeling of panic	21
Physical injuries	0
Death	0
<b>Total</b>	<b>21</b>

**FIGURE 17: SIGNS AND SYMPTOMS RELATING TO THE INCIDENT IN BINNISH**



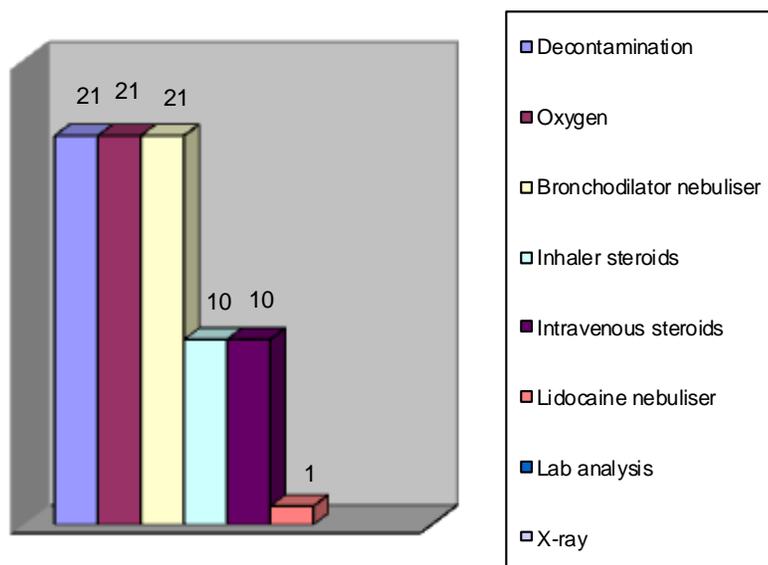
3.86 No cutaneous or severe ophthalmologic signs or hypoxemia were reported. All of these individuals responded well to the administration of oxygen (five litres per minute) and nebulisation with the bronchodilator salbutamol. Those with moderate symptoms also benefitted from inhaler steroids or intravenous steroids, hydrocortisone, or dexamethasone.

3.87 The severe case was managed with oxygen (seven litres per minute) nebulisation with the bronchodilator salbutamol, inhaler steroids, and lidocaine nebuliser for the cough.

3.88 Neither a laboratory exam nor an X-ray was requested by the treating physicians for any of the cases as all of these individuals were discharged from the hospital after three hours. None of the individuals affected in the incident had any signs of physical trauma on their bodies, but only suffered from the effects of a toxic chemical. The physician presented these cases as possibly to be due to chlorine but not confirmed as such.

**TABLE 14: TREATMENT OF CASUALTIES IN BINNISH**

Decontamination	21
Oxygen	21
Bronchodilator nebuliser	21
Inhaler steroids	10
Intravenous steroids	10
Lidocaine nebuliser	1
Laboratory analysis	0
X-ray	0

**FIGURE 18: MANAGEMENT OF CASES IN BIN***Biomedical samples*

3.89 No biomedical samples were taken from the patients, neither by the FFM team nor by the medical staff at the Binnish field hospital.

*Environmental samples*

3.90 No environmental samples were collected or received by the FFM team.

**Idlib City**

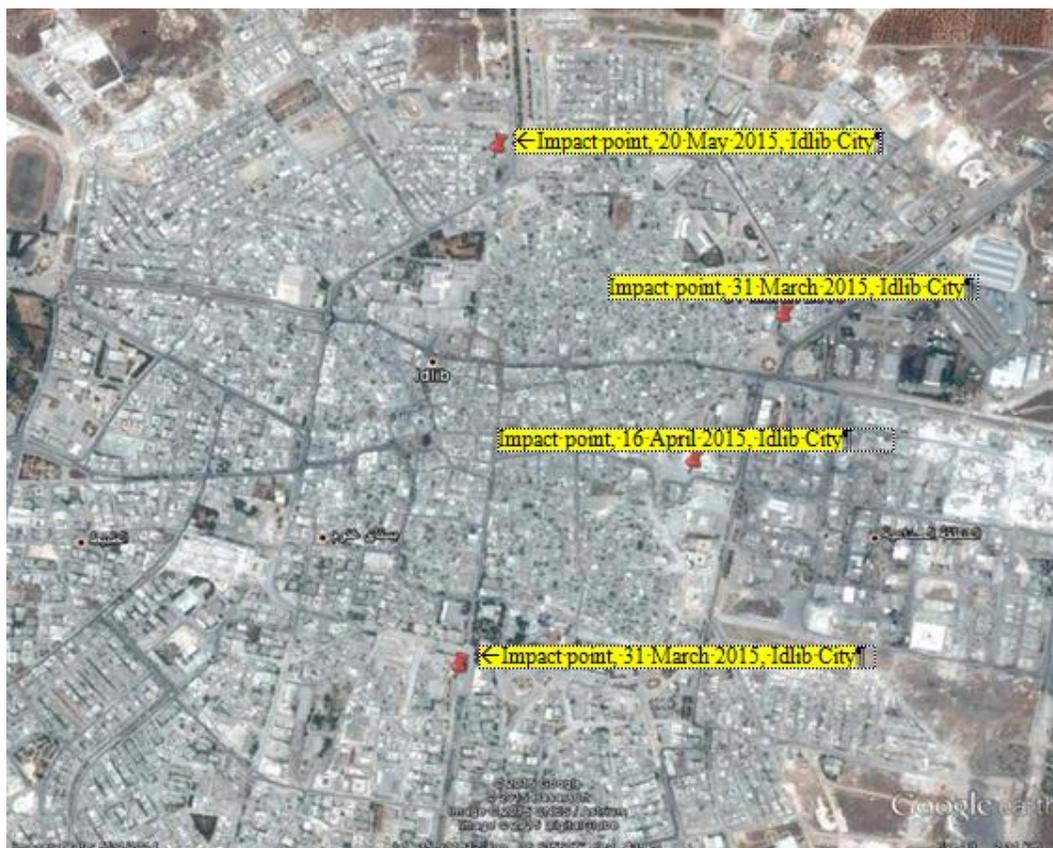
3.91 Idlib City is the principal city of the Idlib Governorate of the Syrian Arab Republic.

3.92 Between 3 May and 5 June, the FFM team interviewed six individuals in the context of incidents of alleged use of toxic chemicals as a weapon in Idlib City. The interviewees were treating physicians, nurses, and first responders. Three incidents had been reported by the interviewees to the FFM team. The first incident happened on 31 March, the second was on 16 April 2015, and the third was on 20 May 2015. Out of the three reported incidents, the interviewees recalled more information in relation to the first incident. The information about the second and the third incident was limited to the date of the event, the location, and number of cases.

**TABLE 15: CHRONOLOGY OF INCIDENTS IN IDLIB CITY**

Incident	Date	Approximate Time	Weather Conditions
First	31 March 2015	11:00-12:00 and 13:00-14:00	The temperature was 18°C to 20°C, humidity 60% and the wind velocity 10 to 12 m/s mainly SSW.
Second	16 April 2015	00:30-01:00	The temperature was around 16°C; wind direction was variable at 1 to 2 m/s and humidity of 50%.
Third	20 May 2015	03:00-04:00	In the early morning of 20 May 2015, the temperature was stable around 20°C and the humidity was 50%. The wind direction was variable, mainly NW with a velocity of 2 m/s.

3.93 The figure below shows the approximate alleged impact points of the devices, as derived from the interviewees.

**FIGURE 19: APPROXIMATE ALLEGED IMPACT POINTS IN IDLIB CITY**

**Narrative**

3.94 On the days of the incidents the city was not under the control of the government.

31 March 2015

3.95 On 31 March 2015 at around noon, a helicopter was heard passing above Idlib and was seen to have dropped one item. One eyewitness started to video record after detonation of the munition and provided the recording to the FFM team. The video showed a drifting yellow-green cloud. A few minutes later, a message was broadcast that the helicopter had dropped a chlorine item close by the governorate administrative building (HQ). One hour later, a second alleged item was dropped on “Al-Mahreb roundabout” close by the museum.

3.96 Interviewees, in particular the first responders, described smelling the typical odour of chlorine as they approached the impact point.

3.97 On the same day two to three hours before the first incident, the national hospital in Idlib had been attacked. Therefore, people who had indications of exposure were transported to either Sarmin field hospital or Binnish field hospital for treatment and care. Sarmin field hospital registered six patients and Binnish field hospital registered 32 patients. All patients were considered by the medical specialists to be mild cases.

16 April 2015

3.98 Interviewees claimed that, on 16 April 2015 at around midnight, one item was dropped in Idlib City. The first responders interviewed reported smelling the typical odour of chlorine as they approached the impact point. Approximately 20 people had signs of exposure and were transported to either Sarmin field hospital or Binnish field hospital for treatment and care.

20 May 2015

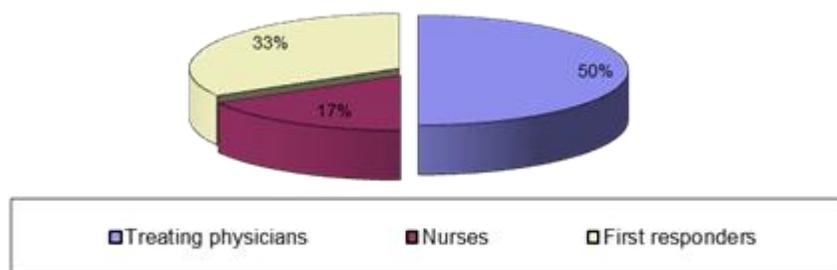
3.99 The FFM team was not able to obtain any significant information, other than the approximate time and location for this incident.

**Epidemiological analysis**

3.100 The FFM team interviewed and collected the testimonies of six individuals in the context of the investigation of incidents of alleged use of toxic chemicals as a weapon. The interviewees were treating physicians, nurses, and first responders. The results presented below are mainly related to the incident of 31 March 2015.

**TABLE 16: RELATION TO THE INCIDENTS IN IDLIB CITY AND GENDER DISTRIBUTION OF INTERVIEWEES**

	<b>Interviewee</b>	<b>Male</b>	<b>Female</b>
Treating physicians	3	3	0
Nurses	1	1	0
First responders	2	2	0
Casualties	0	0	0
Witnesses	0	0	0
<b>Total</b>	<b>6</b>	<b>6</b>	<b>0</b>

**FIGURE 20: DISTRIBUTION OF INTERVIEWEES IN RELATION TO THE INCIDENTS IN IDLIB CITY**

3.101 Idlib City had no functional hospitals at that time. Therefore, for emergencies the population used the nearest hospitals such as those in Sarmin and Binnish. The patients were transported by volunteers in their personal cars or vans. Sarmin field hospital received approximately six patients and Binnish field hospital received 32 patients. All patients were decontaminated, which included washing the exposed area of skin with water. This decontamination was conducted outside the emergency room. Upon clinical examination, the signs and symptoms observed included coughing, difficulty breathing, and tearing.

**TABLE 17: SYMPTOMS OF CASES IN IDLIB CITY**

<b>Symptom</b>	
Coughing	38
Difficulty breathing	38
<b>Total cases</b>	<b>38</b>

3.102 All patients were considered to be mild cases. None of the affected individuals in the attack had any signs of physical trauma on their bodies, but only suffered from the effects of the suspected toxic chemical. All cases responded well to the administration of oxygen. No moderate or severe cases were reported. Neither a laboratory exam nor an X-ray was requested by the treating physicians for the cases. The patients were discharged after a maximum of one hour.

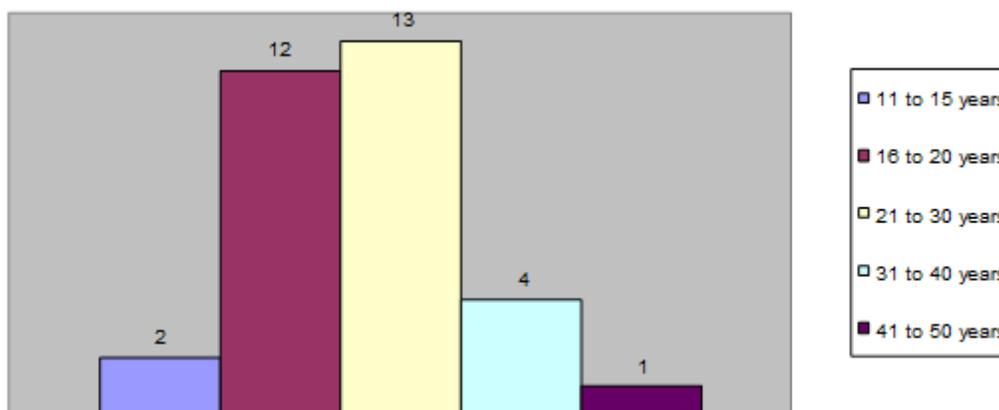
**TABLE 18: TREATMENT OF CASES IN IDLIB CITY**

Decontamination	38
Oxygen	38
Bronchodilator nebuliser	0
Inhaler steroids	0
Intravenous steroids	0
Lidocaine nebuliser	0
Laboratory analysis	0
X-ray	0

3.103 Even though the hospital staff were able to register the names of the patients in both hospitals, no copy of the patient registration book or medical files was provided to the FFM, although these were requested. The FFM received a copy of a list of patients with the stamp of Binnish hospital showing the name, age and gender. The age distribution of the 32 patients treated at the Binnish field hospital is provided in table below.

**TABLE 19: PATIENT DISTRIBUTION ACCORDING TO AGE GROUP, IDLIB CITY**

Age group	Total	Males	Females
0 to 5 years	0	0	0
6 to 10 years	0	0	0
11 to 15 years	2	2	0
16 to 20 years	12	12	0
21 to 30 years	13	13	0
31 to 40 years	4	4	0
41 to 50 years	1	1	0
51 to 60 years	0	0	0
<b>Total</b>	<b>32</b>	<b>32</b>	<b>0</b>

**FIGURE 21: DISTRIBUTION OF CASES IN IDLIB CITY BY AGE****Al-Nerab**

3.104 Al-Nerab is a village in the Idlib Governorate of the Syrian Arab Republic.

3.105 The FFM interviewed eight individuals in relation to alleged incidents in Al-Nerab; six of the interviewees were first responders, one of whom claimed that he had been exposed and two of whom visited the impact point few days after the incidents. The six interviewees who participated in the rescue operation were first responders from Sarmin, located in Sarmin at the time of the incidents. As the information provided to the FFM team was not from direct witnesses, the team was not able to build the sequence of events from the moment of the incidents until the beginning of the rescue operation.

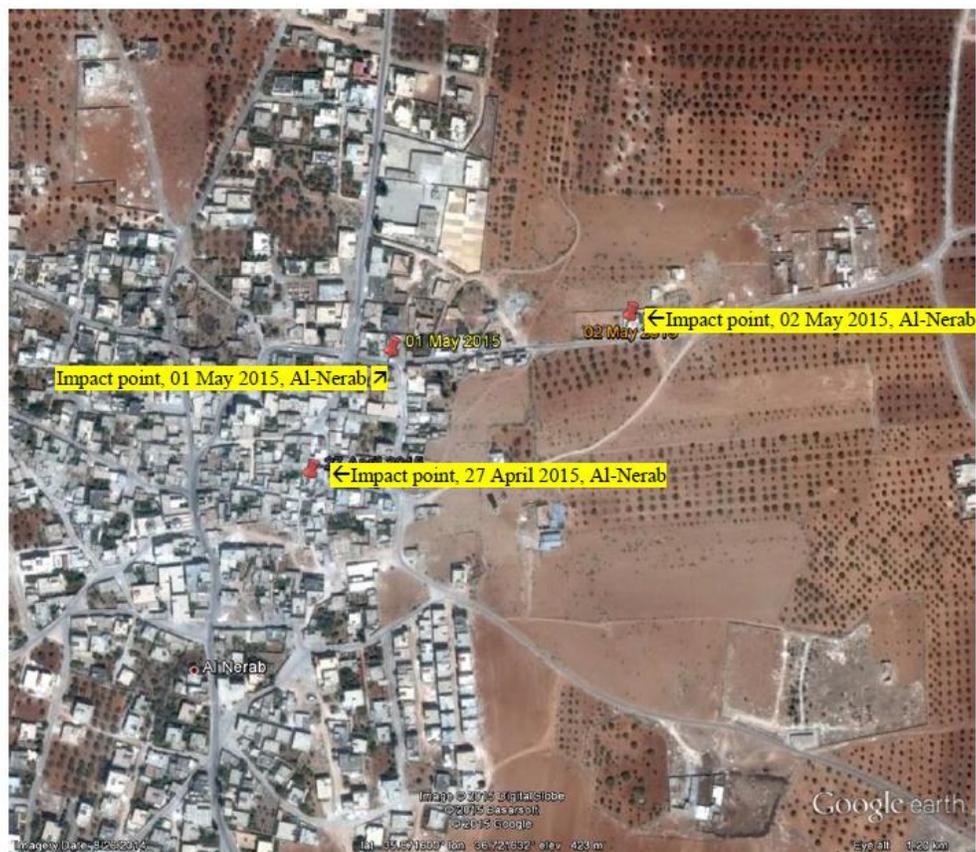
3.106 Three dates of three incidents had been mentioned to the FFM, namely, 27 April 2015, 1 May 2015, and 2 May 2015.

**TABLE 20: CHRONOLOGY AND ASSOCIATED WEATHER CONDITIONS IN RELATION TO THE INCIDENTS IN AL-NERAB**

<b>Date</b>	<b>Approximate time</b>	<b>Weather conditions</b>
27 April 2015	Morning (no accurate indication of time)	Temperatures were rising from 12°C to 21°C; humidity was dropping from 98% to 48%. The wind direction was variable at 2 to 7 m/s.
1 May 2015	Evening before midnight (no accurate indication of time)	Temperature was around 18°C with 64% to 77% humidity. The wind direction was changing between WSW and SSW at 8 to 3 m/s.
2 May 2015	Around 04:30	The temperature was around 15°C; humidity was 80%. In the early morning, the wind direction was SW with a velocity of 4 m/s.

3.107 The figure below shows the approximate alleged impact points of the devices, as derived from the interviewees.

FIGURE 22: ALLEGED IMPACT POINTS IN AL-NERAB



### Narrative

3.108 Al-Nerab was not under the control of the government in April and May 2015.

3.109 Although there were no direct witnesses to the actual events among the interviewees, the FFM team was able to collect information from the first responders regarding some of the casualties, including two fatalities from the alleged incident of 2 May. One responder who visited the 2 May site after transporting victims to the Sarmin field hospital, and two witnesses who visited the impact point a few days later, had given information about the munition, which reportedly impacted in front of the residence of the two casualties who died. These interviewees described barrel fragments, light-green-coloured refrigerant cylinders, and plastic bottles among the remnants, as well as a strong smell of chlorine, discolouration of nearby vegetation, and burn marks on the outside wall of the house.

3.110 The alleged incidents of 27 April and 1 May were also reported to have occurred in residential neighbourhoods. Responders similarly reported smelling a strong odour of chlorine and seeing remnants similar to those described above. One witness reported that he poured water over one of the plastic bottle remnants and that the water turned red.

### Epidemiological analysis

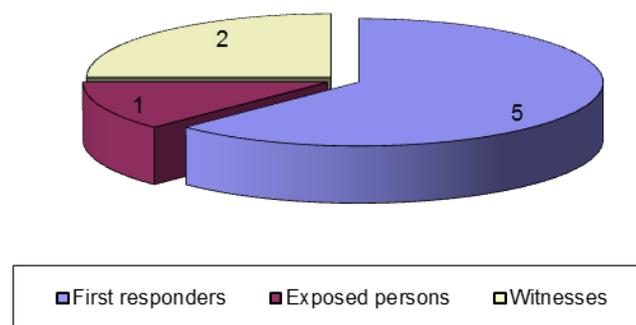
3.111 Between 23 May and 5 June 2015, the FFM interviewed eight individuals; six of the interviewees were first responders, one of whom claimed that he was exposed, and two interviewees had visited the impact point a few days after the incidents. As the individuals who were interviewed were in fact in Sarmin during the attack, the information received about the incident was not first hand.

3.112 The details of these interviewees are given in the table below.

**TABLE 21: RELATION TO THE INCIDENT IN AL-NERAB AND GENDER DISTRIBUTION OF INTERVIEWEES**

	Interviewee	Male	Female
First responders	5	5	0
Exposed person	1	1	0
Witnesses	2	2	
<b>Total</b>	<b>8</b>	<b>8</b>	<b>0</b>

**FIGURE 23: DISTRIBUTION OF INTERVIEWEES IN RELATION TO THE INCIDENT IN AL-NERAB**



3.113 The information reported 12 casualties resulting from all three alleged incidents, including two cases of death: a father and his baby from the incident on 2 May 2015. It was reported that the baby was found dead at the scene, and the father died a few days later in a hospital near the border. The signs observed by the first responder included coughing, difficulty breathing, and tearing.

### Biomedical samples

3.114 For all alleged incidents in Al-Nerab reported above, only two biomedical samples had been taken. The samples were blood and hair taken from the dead baby.

3.115 The FFM team received the sample (blood and hair) from the CVDCS on 22 May 2015. The quantity of blood and hair was not enough to perform a screening analysis; therefore, the laboratory was tasked with screening the environmental samples first and preserving the biomedical sample for a specific tracer in the light of the results. The environmental sample analysis result did not offer any lead with respect to an organic or/and inorganic tracer or their metabolites that could be specific and not naturally occurring in the human body. Therefore, no analysis was conducted on these two samples.

Environmental samples

3.116 No environmental samples were collected or received by the FFM team related to the alleged incidents in Al-Nerab.

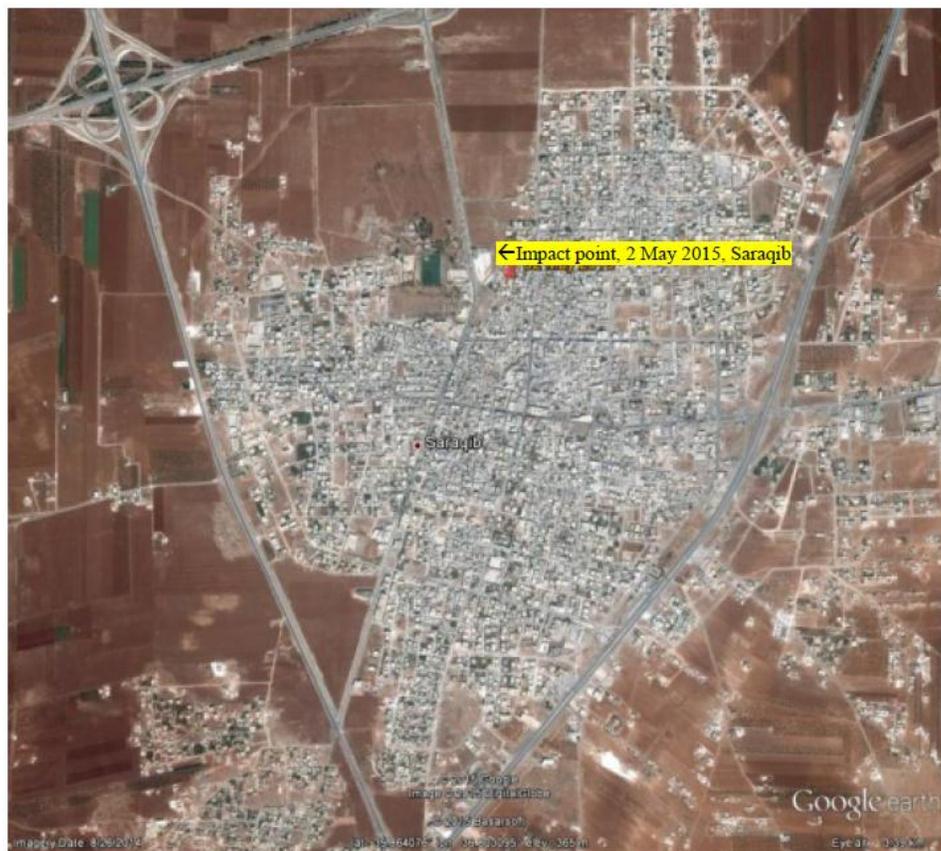
**Saraqib**

3.117 Saraqib is a city in the Idlib Governorate of the Syrian Arab Republic.

3.118 Between 23 May and 5 June 2015, the FFM interviewed six individuals who provided information in relation to the alleged incidents in Saraqib, five of whom were first responders and one an eyewitness (local media) with respect to the alleged munition remnants; all were male.

3.119 Figure 24 below indicates the approximate alleged impact points of the devices, as derived from the interviewees.

**FIGURE 24: IMPACT POINT OF ALLEGED INCIDENT IN SARAQIB**



**TABLE 22: DETAILS OF THE INCIDENT IN SARAQIB**

<b>Date</b>	<b>Approximate time</b>	<b>Weather conditions</b>
2 May 2015	Around 4:30	In the early morning of 2 May 2015, the temperature in Saraqib was around 15°C, humidity was 80%, and the wind direction was south-west with a velocity of 4 m/s.

**Narrative**

3.120 Saraqib was not under the control of the government in May 2015.

3.121 The alleged incident in Saraqib with suspected toxic chemicals was on 2 May 2015. The individuals who were interviewed by the FFM team were in fact in Sarmin during the incident. The interviewees reported to the FFM team an approximate number of 70 chemical casualties. The signs observed by the first responder during the rescue operation were coughing, difficulty breathing, and tearing.

3.122 The information received about the incident was not first hand and the FFM team could not cross-check this information from different sources such as medical professionals, victims, casualties and direct witnesses.

3.123 One interviewee visited the scene approximately 20 minutes after the incident. He reported a strong chemical smell, barrel remnants, refrigerant cylinders, plastic bottles, and some chemical burning and discolouration of vegetation.

**Biomedical samples**

3.124 No biomedical samples were taken from the patients in relation to the alleged incident in Saraqib on 2 May 2015.

**Environmental samples**

3.125 No environmental samples were collected or received in relation to the alleged incident in Saraqib on 2 May 2015.

**Kurin**

3.126 Kurin is a village in the Idlib Governorate of the Syrian Arab Republic.

3.127 Only one interviewee made reference to an incident in Kurin; the interviewee could not recall the date of the incident, but was able to give information about the incident location.

3.128 Figure 25 below indicates the alleged approximate impact points of the devices, as derived from the interviewees.

**FIGURE 25: APPROXIMATE ALLEGED IMPACT POINT OF DEVICE IN KURIN**



### **Narrative**

3.129 The interviewee claimed that in mid-April 2015 in the evening between 18:30 and 20:00, shortly after sunset, he was with five friends riding in a pick-up truck close to Kurin. He heard a helicopter in the air, so the six of them took cover. A moment later they heard the sound of something falling through the air, followed by a light explosion. A few minutes later they continued moving in the pick-up. As soon as they arrived in an area in Kurin, they smelled “[c]hlorine. It was clear from its taste it was chlorine. It stuck to our mouths.” They left the village quickly and washed their faces and mouths with water.

3.130 The FFM team could not cross check this information from other sources.

### **MUNITIONS**

3.131 The FFM team collected information regarding the alleged chemical item or munition during the interviews. The interviewees referred to the alleged items/munitions as “barrel bombs”. Several of the interviewees described the remnant of the munition and some of them also provided pictures. The FFM team also received parts of the munitions as samples. Additionally, the team also found

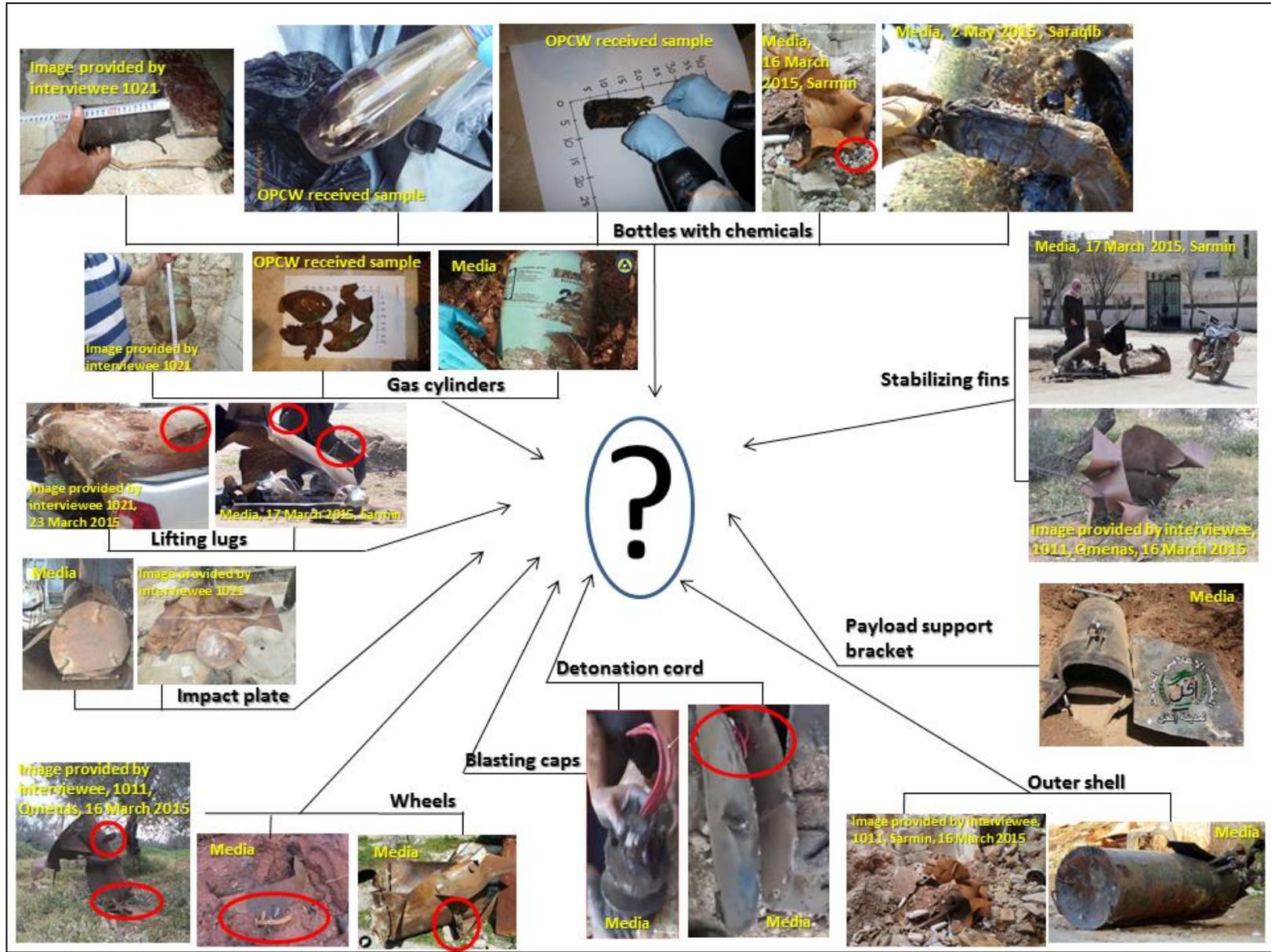
many pictures of alleged items/munitions in open sources, which bore resemblance to descriptions provided by interviewees.

3.132 Initially, the team studied the media footprints where the improvised chemical munitions were reportedly used. As interviews progressed, more information was obtained from a number of persons who were interviewed in their different capacities as victims, witnesses, first responders, and medical personnel. Their testimonies were correlated with the various types of evidences provided to the team by the interviewees, with the social media videos and pictures, with the samples handed over to the team and with the information collected from various other open sources.

3.133 Based on the information collected by the FFM team, samples, pictures, and descriptions of the items by the witnesses, the following are key common features:

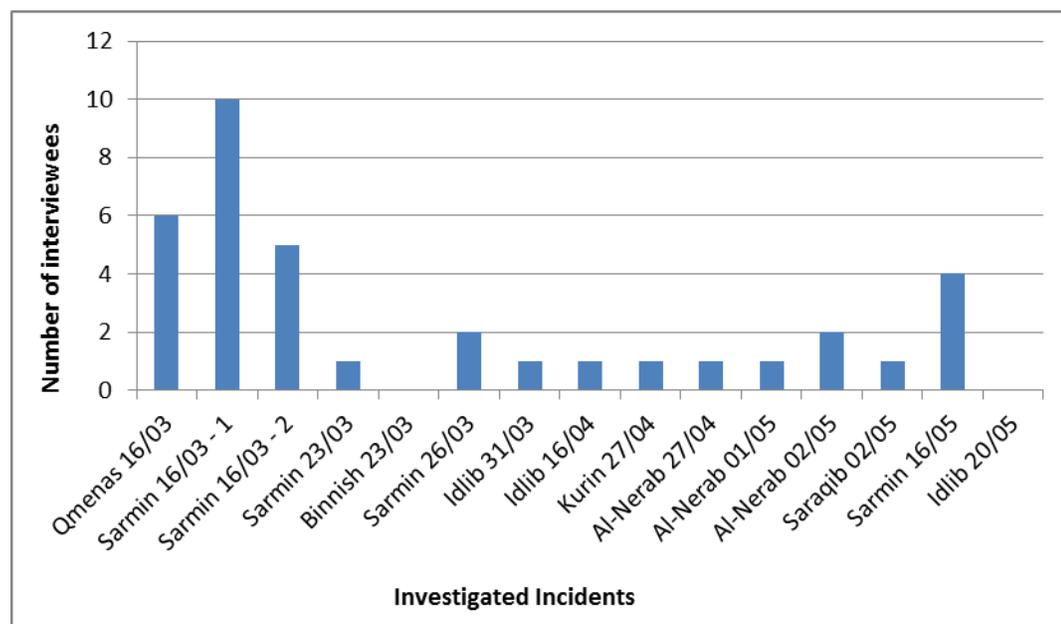
- (a) an outer shell (barrel) designed to contain a number of metallic and plastic cylinders;
- (b) a number of metallic cylinders of various shapes and sizes that could be filled with chemical compounds;
- (c) multiple plastic bottles;
- (d) detonation cord or an explosive mixture;
- (e) ordinary time fuse; and
- (f) multiple and various connectors that hold the components together.

FIGURE 26: ALLEGED REMNANTS OF CHEMICAL MUNITIONS, DERIVED FROM DIFFERENT SOURCES



3.134 From the 24 interviewees, 16 interviewees offered relevant data regarding the remnants of improvised chemical bombs allegedly used during the investigated incidents. Figure 27 below shows the distribution of interviewees with respect to the different incidents.

**FIGURE 27: DISTRIBUTION OF INTERVIEWEES WITH RESPECT TO THE ALLEGED INCIDENTS**



## OVERALL ANALYSIS OF THE INFORMATION COLLECTED

### Epidemiological analysis of the incidents

3.135 For logistical and security considerations, the interviewees were transported to the interview location in Country X in three groups:

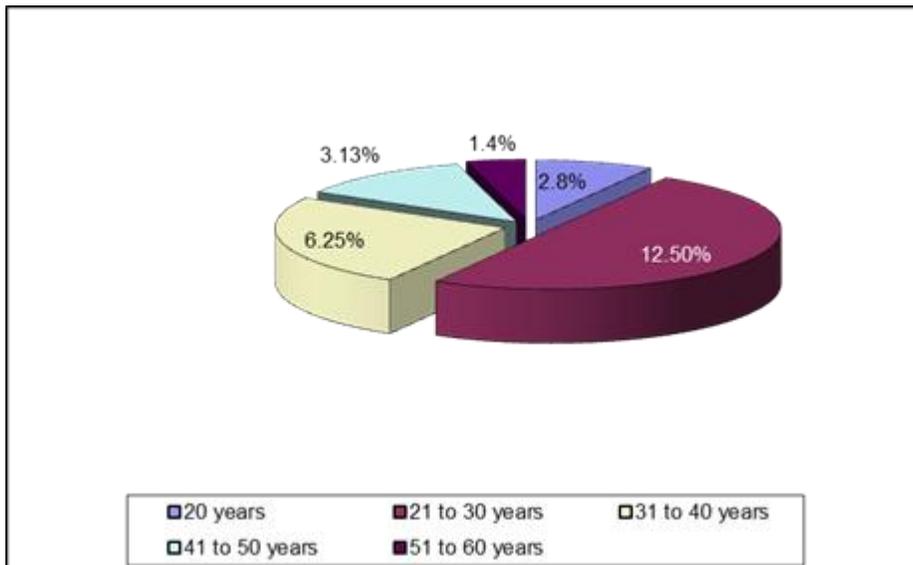
- (a) The first group totalled 11 interviewees, all of whom were interviewed.
- (b) The second group totalled nine interviewees, all of whom were interviewed.
- (c) The third group totalled 10 interviewees, of whom only three were interviewed (30%).

3.136 Seven interviewees from the original selection were unable to join the group.

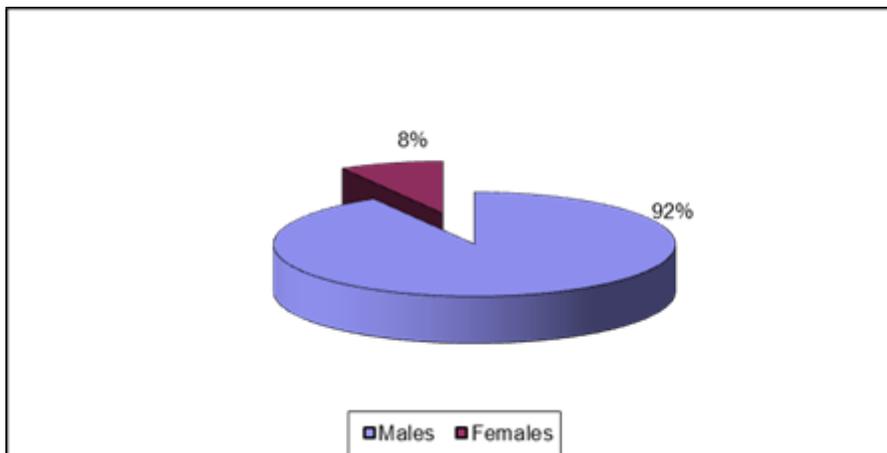
**TABLE 23: DISTRIBUTION OF THE INTERVIEWEES BY AGE AND GENDER**

Age group	Male	Female	Total
20 years	2		2
21 to 30 years	11	1	12
31 to 40 years	6		6
41 to 50 years	2	1	3
51 to 60 years	1		1
<b>Total</b>	<b>22</b>	<b>2</b>	<b>24</b>

**FIGURE 28: DISTRIBUTION OF INTERVIEWEES BY AGE**

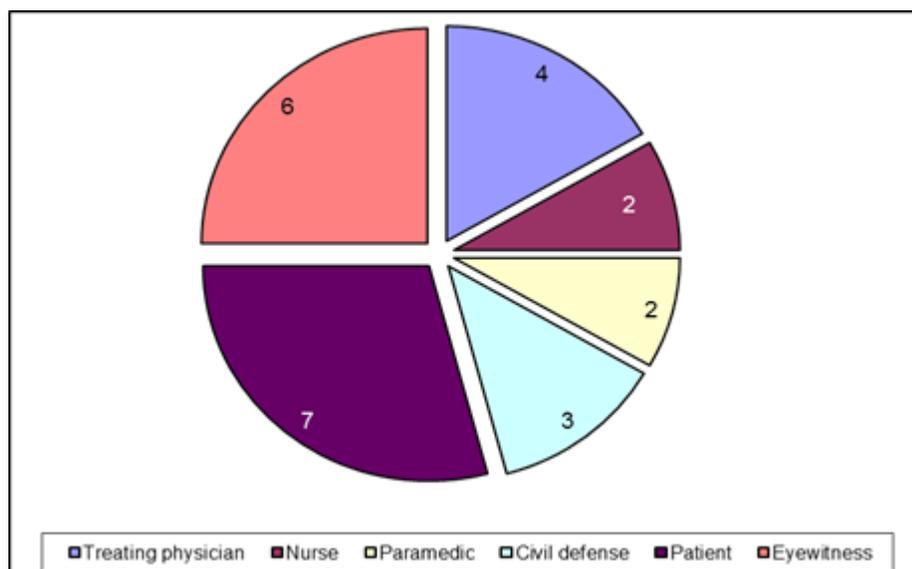


**FIGURE 29: DISTRIBUTION OF INTERVIEWEES BY GENDER**



**TABLE 24: DISTRIBUTION OF INTERVIEWEES IN RELATION TO THE INCIDENTS**

Relation to the incident	Number
Treating physician	4
Nurse	2
Paramedic	2
Civil defence	3
Patient	7
Eyewitness	6
<b>Total</b>	<b>24</b>

**FIGURE 30: DISTRIBUTION OF INTERVIEWEES IN RELATION TO THE INCIDENTS**

3.137 In carrying out the analysis, the team noted the following in particular:

(a) The FFM compiled data that emerged from the testimonies of interviewees.

(b) The relation of the interviewees to the incidents was frequently interchangeable; some first responders and medical personnel were considered as having been exposed and some of the interviewees were present at more than one incident.

(c) Of a total of 24 interviewees, 21 described smelling an odour during the course of one or more of the alleged incidents. Eighteen of these described smelling the distinctive odour of a chlorine-like substance, similar to cleaning products but much stronger; three described a strong and repulsive odour.

(d) All medical staff, from ambulance drivers to treating physicians, mentioned a large number of patients documented in different hospitals at which they sought medical aid.

(e) When transporting patients or providing aid to them, some of the medical staff and first responders suffered from some symptoms of exposure.

(f) A few were affected by the intense smell of chlorine emanating from the clothes of people who were exposed during an incident. It should be noted that patients were decontaminated with water or soap and water before being brought inside the hospital.

### **Medical signs, symptoms, and treatment**

3.138 The symptoms of exposure, the signs observed by the treating physicians, and the treatment that was provided to patients, in addition to the symptoms based on interviewees' testimonies, are discussed below.

3.139 All interviewees who declared having been exposed to toxic chemicals are reported here. These include the seven patients and five first responders/nurses exposed (a total of 12 individuals exposed).

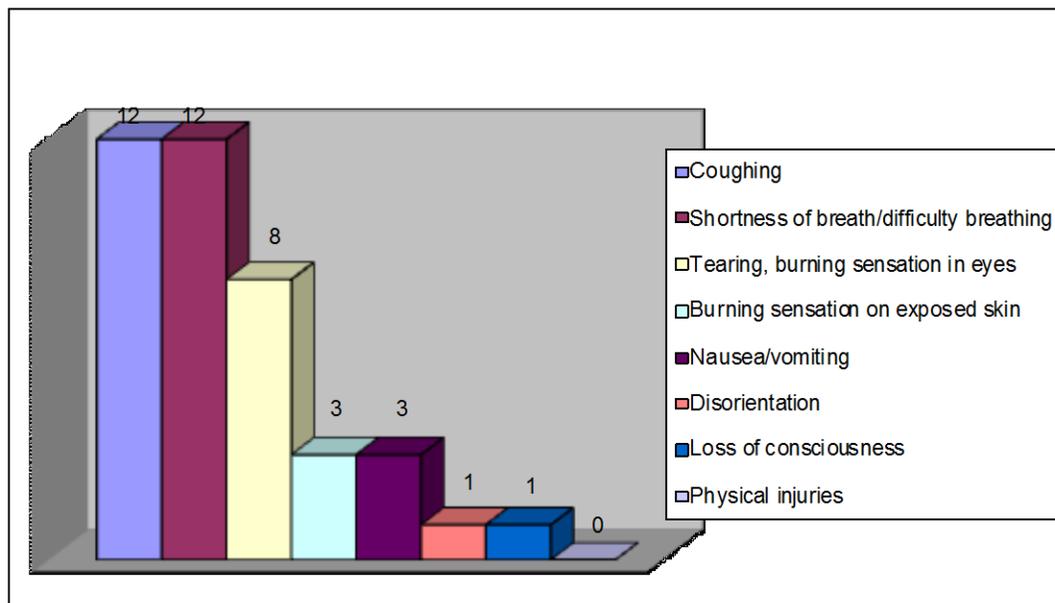
3.140 Some symptoms are grouped together. The range experienced by the patients as a result of suspected exposure to toxic chemicals included coughing, shortness of breath, tearing and burning sensation in the eyes, burning sensation on exposed skin, nausea/vomiting, disorientation, and loss of consciousness.

3.141 The clinical examination reported by the treating physician included coughing, difficulty breathing, and tearing.

3.142 The severity of symptoms varied and depended on the duration of exposure and the age of the patient.

**TABLE 25: FREQUENCY DISTRIBUTION OF THE REPORTED SYMPTOMS BY THE CASUALTIES WHO PROVIDED THEIR TESTIMONY**

<b>Symptom</b>	<b>Frequency of Occurrence</b>
Coughing	12
Shortness of breath/difficulty breathing	12
Tearing, burning sensation in eyes	8
Burning sensation on exposed skin	3
Nausea/vomiting	3
Disorientation	1
Loss of consciousness	1
Physical injuries	0
<b>Total</b>	<b>12</b>

**FIGURE 31: FREQUENCY OF OCCURRENCE OF SIGNS AND SYMPTOMS**

3.143 Cumulatively, 12 of 12 experienced coughing, 12 of 12 had shortness of breath, 8 of 12 experienced burning in the eyes and tearing, 3 of 12 experienced a burning sensation on exposed skin, 1 of 12 had nausea or vomiting, and 1 of 12 lost consciousness.

3.144 There is no discordance between the two sources of information because for the patients the main symptoms were difficulty breathing and severe coughing. The other symptoms were reported as secondary, mild symptoms, but nonetheless are recorded in this document.

3.145 The respiratory symptoms among patients appeared almost immediately after exposure to the suspected toxic chemicals and persisted for a few hours or, in some cases, for a few days. The cough was non-productive in the majority of cases, which is a result of irritation of the upper respiratory tract and the constitution of bronchospasm. No cases of productive cough or haemoptysis were observed.

3.146 As reported by the treating physicians, a large number of patients presented in a state of panic. This could be attributed to the psychological effects of living in a conflict area.

3.147 The treatment provided included oxygen therapy, application of intravenous fluids, and steroid therapy.

3.148 The mainstay of treatment provided was oxygen, which provided relief to patients within minutes. Oxygen relieves hypoxia in exposed patients and calms those who are in state of panic, thus bringing immediate relief.

3.149 The use of bronchodilators relaxes constricted airways, thus improving oxygenation and relieving symptoms. The efficacy of steroids is not proven.

3.150 The use of intravenous fluids is of more value in providing quick access to the peripheral vessels for intravenous drug administration. Moreover, in cases of

pulmonary oedema, administration of fluids has to be carefully justified and weighed.

3.151 The outcome of exposure was fatal in six cases in Sarmin and two in Al-Nerab. In the alleged incident in Sarmin, three died immediately and three later on the same night in Sarmin hospital. All these individuals were from the same family and very close to the impact site. In the Al-Nerab incident, one died at the scene of impact and the other three days later.

3.152 The hospitals at all locations in question are equipped with minimal medical equipment, thus the treating physicians did not take any blood tests, perform radiographs, etc.

### **Evaluation of Samples**

3.153 None of the samples were collected by the FFM team. A total of 24 samples were handed over to the FFM team by the CVDCS. The samples were received by the FFM team on two different dates; the first set of samples was received by the team on 22 May 2015 and the second set of samples was received on 23 July 2015. According to interviewees' statements, the samples were originally collected by the interviewees and were held in a separate location within Sarmin, then handed over to the CVDCS.

3.154 The OPCW FFM team ensured the chain of custody of these samples from the moment of receipt by following the procedure described in the methodology section (Section 2) of the current report. The described procedure was applied for all samples starting from the moment of receipt to the handover of these samples to the OPCW designated laboratory.

3.155 Some of the received samples were accompanied by partial documentation of the chain of custody prior to delivery to the FFM. Although this documentation provided some degree of confidence, the entire chain of custody could not be verified, thus the possibility of cross-contamination could not be ruled out. Therefore, although such samples would be considered as primary evidence under optimal circumstances, given the constraints as described, the FFM regarded the samples as tertiary evidence. As such, the results from such analyses were treated more as supporting information than as having significant evidential value. Therefore, it was decided that the splitting of samples for analysis at a second laboratory did not warrant the efforts, including cost, and impact on the designated laboratory as well as on OPCW staff.

**TABLE 26: LIST OF SAMPLES**

<b>Date</b>	<b>OPCW evidence reference number</b>	<b>OPCW sample code</b>	<b>Sample description</b>	<b>Location</b>
22/05/2015	20150522102801	01SLS	Soil sample collected from the impact point of a barrel bomb <sup>4</sup>	Kafr Zita
22/05/2015	20150522102802	02SLS	Soil sample collected from the impact point of a barrel bomb, <sup>3</sup> the soil was coloured purple after the attack, <sup>3</sup> 48 hours later the colour had returned to normal	Kafr Zita
22/05/2015	20150522102803	03AQS	Purple aqueous solution	Kafr Zita
22/05/2015	20150522102804	04SDS	Empty HCFC container	Kafr Zita
22/05/2015	20150522102805	05SDS	Empty HCFC container	Sarmin
22/05/2015	20150522102806	06SDS	Black/brown plastic container + dark red powder	Kafr Zita
22/05/2015	20150522102807	07SDS	Black/brown plastic container	Sarmin
22/05/2015	20150522102808	08SDS	Ruptured HCFC container	Sarmin
22/05/2015	20150522102809	09SDS	Clothes from a victim	Sarmin
22/05/2015	20150522102810	N/A	Blood and hair sample	Al-Nerab
22/05/2015	20150522102811	11SDS	Ruptured HCFC container	Sarmin
22/05/2015	20150522102812	12SDS	Ruptured HCFC container	Sarmin
23/07/2015	20150723100801	13SDS	One key and one teaspoon	Sarmin
23/07/2015	20150723100802	14SDS	Level float for water tank	Sarmin
23/07/2015	20150723100803	15SDS	Electrical light bulb	Sarmin
23/07/2015	20150723100804	16SDS	Two pieces of construction material	Sarmin
23/07/2015	20150723100805	17SDS	Part of an exploded HCFC gas cylinder	Sarmin
23/07/2015	20150723100806	18SDS	Part of an exploded HCFC gas cylinder	Sarmin
23/07/2015	20150723100807	19SDS	Piece of wood	Sarmin

<sup>4</sup> Terminology is as provided by interviewees.

Date	OPCW evidence reference number	OPCW sample code	Sample description	Location
23/07/2015	20150723100808	20SLS	Soil sample (sand and stones)	Sarmin
23/07/2015	20150723100809	21SDS	Pieces of wood (and plastic container)	Sarmin
23/07/2015	20150723100810	22SDS	Plastic containers	Sarmin
23/07/2015	20150723100811	23SDS	Jacket of a victim	Sarmin
23/07/2015	20150723100812	24SLS	Two soil samples (sand and stones) Taken from two locations in Sarmin as background samples (blank samples)	Sarmin

3.156 After receiving the samples and the documentation, it became apparent that five samples had been collected in Kafr Zita which is a city within the Hama Governorate in the Syrian Arab Republic. As the current mandate is restricted to the Idlib Governorate in the Syrian Arab Republic, in this report the team will not include the analysis results of the following samples; 01SLS, 02SLS, 03AQS, 04SDS, and 06SDS. The FFM team will retain the analysis results within the Secretariat, pending potential investigation of incidents outside this mandate.

3.157 Considering the uncertainty around the potential chemical allegedly used and how it might behave under unknown energetic conditions, and an indeterminate period of time in uncontrolled environment, the FFM team requested from the OPCW designated laboratory a large screening of organic and inorganic chemical compounds and/or elements, not limited to scheduled chemicals.

3.158 In this report, the results of 19 samples were considered:

(a) eleven samples (13SDS, 14SDS, 15SDS, 16SDS, 17SDS, 18SDS, 19SDS, 20SLS, 21SDS, 22SDS, and 23SDS) related to samples collected from the house of the six dead victims of the alleged incident of 16 March 2015 in Sarmin;

(b) six samples (05SDS, 07SDS, 08SDS, 09SDS, 11SDS and 12SDS) related to different undefined alleged incidents in Sarmin other than above-mentioned incident;

(c) one biomedical sample collected from the deceased child from the alleged incident of Al-Nerab on 2 May 2015; and

(d) one background soil sample from Sarmin (consisting of two subsamples from slightly different locations).

3.159 The 19 samples mentioned above may be categorised as follows:

(a) remnants of the alleged item or munition:

(i) metallic remnant: 05SDS, 08SDS, 11SDS, 12SDS, 17SDS and 18SDS; and

(ii) plastic remnant: 07SDS and 22SDS;

- (b) environmental samples:
  - (i) soil, stones and construction materials: 13SDS, 14SDS, 15SDS, 16SDS, 19SDS, 20SDS, 21SDS and 24SLS; and
  - (ii) textiles and leather products: 07SDS and 23SDS; and
- (c) biomedical samples: blood and hair evidence number: 20150522102810.

### **Chemical analysis results of the remnants of the alleged munition**

#### Metallic material:

3.160 All the metallic parts of the remnants of the alleged munition received by the FFM team consisted of a part or whole metallic cylinder. The cylinder bore the markings for the refrigerant R22, a hydrochlorofluorocarbon (HCFC) and liquefied gas, and was comparable to those commercially available.

3.161 A screening of the residual organic compound was performed by the OPCW designated laboratory. The analysis was conducted on the external and the inner side of the exploded or ruptured R22 cylinder for the following samples: 05SDS, 08SDS, 12SDS, 17SDS, and 18SDS. No organic compounds were reported for the sample 17SDS. However, different concentrations of trinitrotoluene (TNT) on the rest of samples clearly indicate the contamination and/or the exposure of those samples to high-explosive materials.

3.162 In addition to the explosives footprint on those samples, different concentrations of polyaromatic hydrocarbons (PAHs) were found in the samples. Moreover, polychlorinated hydrocarbons (PCAHS, hexachlorobenzene, octachloronaphthalene, and others) were detected in some of those samples. It is possible that these chemicals were formed during the combustion of organic material in presence of chlorine-containing chemicals.

3.163 The screening for inorganic compounds (including elements) reveals that potassium and/or manganese were identified in all samples at different concentrations and that the concentration of chloride was significantly higher than normal in samples 05SDS, 08SDS, 17SDS, and 18SDS.

3.164 The concentration of chloride in the debris from the inside surface of the R22 container 18SDS (aliquot 18SDS-E2SI) was five times higher compared to the outside surface (aliquot 18SDS-E2SO).

#### Plastic material:

3.165 The plastic material was identified as polyethylene terephthalate. The organic compounds identified were the same as on the metallic remnants of the munition.

3.166 Potassium and manganese were detected in both samples analysed in high concentration; 1:1 stoichiometric ratios of potassium and manganese were observed.

### **Chemical analysis results of the environmental samples**

#### The screening for organic compounds shows the following:

3.167 Differing concentrations of TNT were found in the environmental samples. Also, different concentrations of polyaromatic hydrocarbons (PAHs) were detected.

In addition, PCAHs (hexachlorobenzene, octachloronaphthalene, and others) were detected in some samples. It is possible these chemicals were formed during the combustion of organic chemicals in the presence of chlorine-containing chemicals. Also, different plasticisers and oxidation products of the antioxidant butylated hydroxytoluene (BHT) were identified.

3.168 Bornyl chloride was identified in wood sample 21SDS. According to the literature,<sup>5</sup> bornyl chloride is a reaction product of hydrogen chloride with the terpene-based wood ingredient  $\alpha$ -pinene. In order to show that bornyl chloride is not naturally occurring, wood chips from a fir tree were extracted with n-hexane. After analysis with GC-MS and GC-AED,  $\alpha$ -pinene but no bornyl chloride was detected. In a further experiment, some fir tree chips were exposed to (a) hydrogen chloride gas (HCl) and (b) chlorine gas (Cl<sub>2</sub>). After extraction with n-hexane and analysis, significant amounts of bornyl chloride were present in both extracts from experiments (a) and (b).

3.169 Consequently, the detected bornyl chloride in wood sample 21SDS is most likely not of natural origin.

#### The screening for inorganics

3.170 Different concentrations of potassium and/or manganese (potassium permanganate (KMnO<sub>4</sub>), manganese oxide (MnO<sub>2</sub>)) were identified in all samples. High concentrations of manganese were found in the dark coloured debris on the electrical light bulb 15SDS, on the construction material piece 16SDS, and on the wood piece 19SDS. Using XRF analysis, almost stoichiometric 1:1 ratios of potassium and manganese were found in the soil sample 20SLS and the plastic containers 21SDS and 22SDS. This is consistent with derivation from potassium permanganate (KMnO<sub>4</sub>).

3.171 High concentrations of chloride were identified in all samples. The concentration of chloride in the extract of the soil sample 20SLS (aliquot 20SLS-E2) was between 70 and 700 times higher than the two soil samples 24SLS (aliquots 24SLS-E2A / 24SLS-E2B). Considering that sample 24SLS is a background soil sample and it was taken more than three months after the incident in Sarmin, there is strong evidence that sample 20SLS was exposed to or contaminated by chloride.

#### Biomedical samples

3.172 The biomedical samples received by the FFM team were approximately 1 to 1.5 ml of blood taken from the dead child in the Al-Nerab incident and a hair sample taken from the same victim after decontamination. The quantity of samples was not enough to perform a screening analysis; therefore, the laboratory was tasked with screening the environmental samples first and preserving the biomedical sample for specific tracer(s) in light of the results for the environmental samples.

3.173 The environmental sample analysis result did not offer any lead with respect to an organic and/or inorganic tracer or their metabolites that could be specific and not occurring naturally in the human body. Therefore, no analysis was conducted on these two samples.

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<sup>5</sup> Information supplied by the designated laboratory.

### **Review of information on the munitions**

3.174 Multiple open sources, videos, and media reports indicate that in the conflict, conventional weapons have been supplemented with improvised weapons derived from low cost containers filled with explosive, fuel, irregular shaped steel fragments that have been referred to as “barrel bombs”. More recently, reports have referred to barrel bombs containing chemicals.

3.175 The interest of the investigation team was focused on those improvised ordnance that produced casualties by intoxication with an unknown chemical that were allegedly used in Idlib region in the Syrian Arab Republic between March and May 2015.

3.176 The testimonies of interviewees were correlated with the various types of evidence provided to the team by the interviewees, with social media videos and pictures, with the samples handed over to the team, and with the information collected from various other open sources. Based on these inputs, the following components have been determined:

- (a) an outer shell (barrel) designed to hold inside a various number of components including chemical cylinders;
- (b) a number of cylinders potentially of various shapes and sizes filled with chemical compounds (which are most probably gases or liquids);
- (c) multiple plastic bottles filled with potassium permanganate;
- (d) detonation cord or an explosive mixture designed to rupture the gas cylinders and the plastic bottles;
- (e) an ordinary time fuse consisting of a blasting cap and a time-calculated fuse wick (fuse cord); and
- (f) multiple and various connectors that hold the components together.

3.177 By piecing together these inputs, the modus operandi is that the barrel bomb releases the toxic chemical compound(s) by using the detonation cord or an explosive mixture to rupture the gas cylinders filled with toxic chemical, the plastic bottles, and the outer shell. Improvised chemical barrel-bomb designs that are observed through social media demonstrate that there is an evolution of their manufacture, likely driven by trial and error. Open sources indicate three generic constructions of the chemical barrel bomb. However, based on all the inputs related to the mandate, only one type appears to have been used in the Idlib region between March and May 2015.

3.178 Figure 32 below depicts this generic construction.

3.179 Figure 33 shows some of the evidence received by the team which helped build the picture of the munition indicated in Figure 32.

FIGURE 32: DEPICTION OF AN IMPROVISED CHEMICAL MUNITION, ALLEGED TO HAVE BEEN USED IN THE IDLIB GOVERNORATE BETWEEN MARCH AND MAY 2015

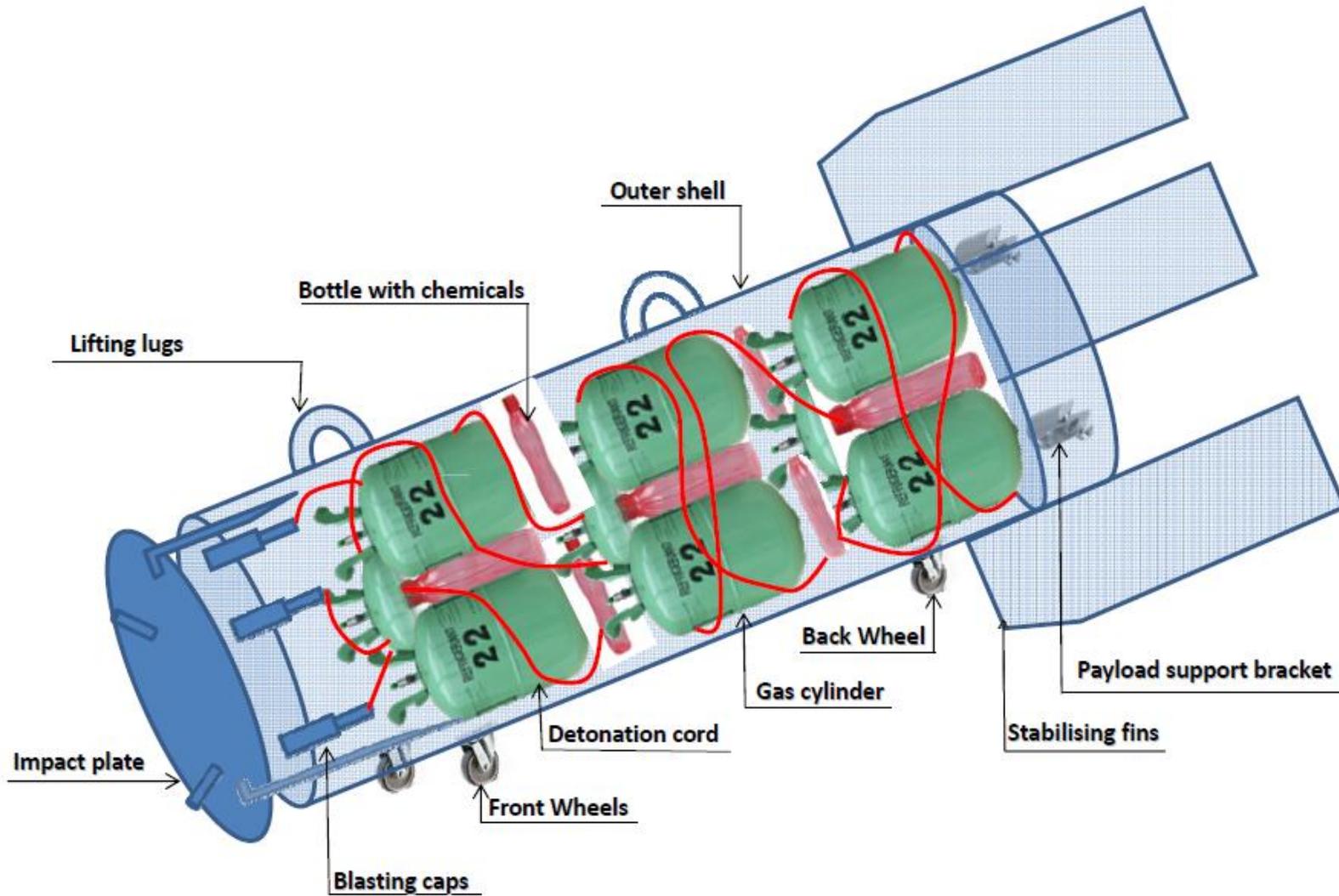
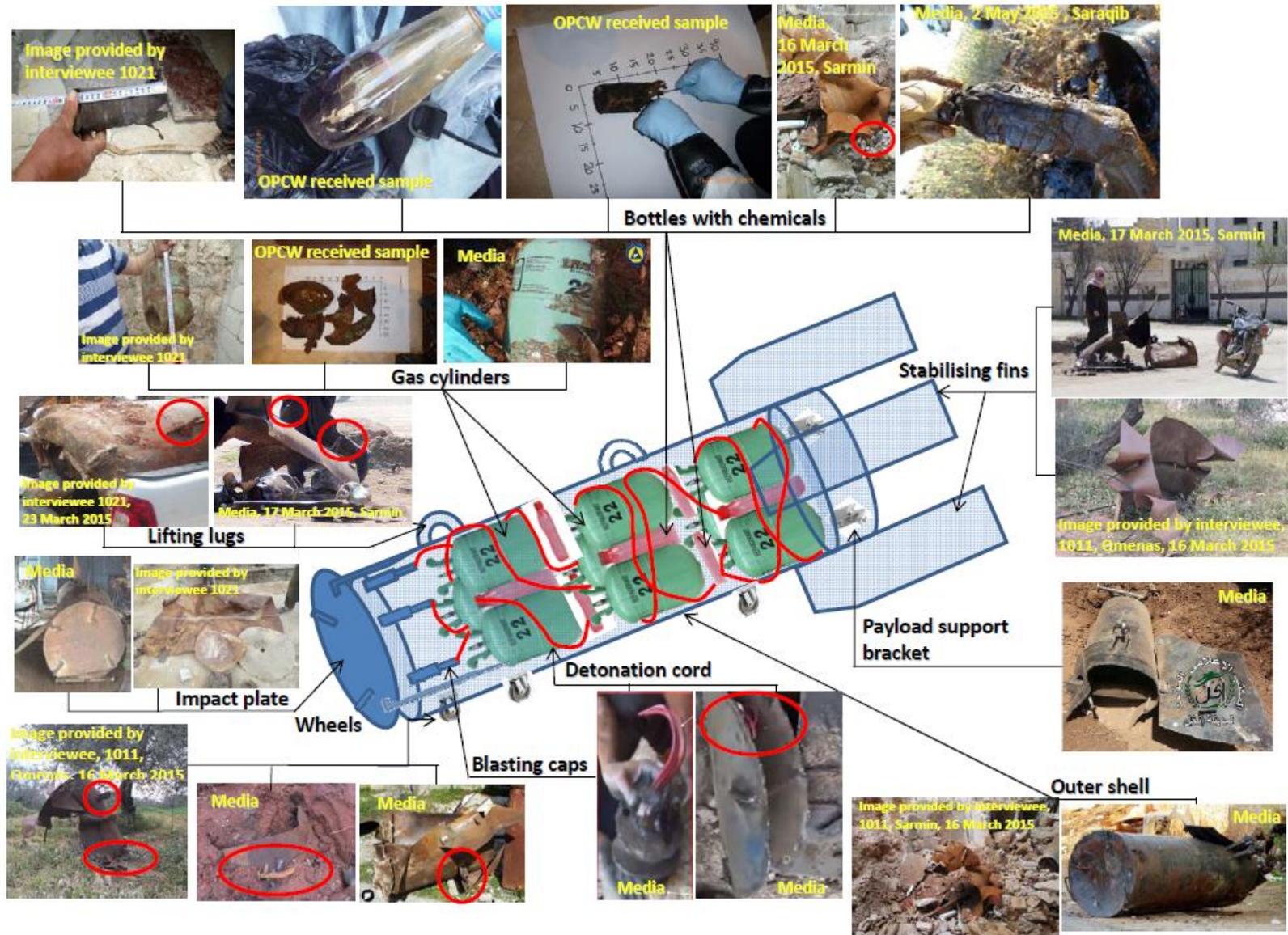


FIGURE 33: EVIDENCE AND INFORMATION RECEIVED BY THE FFM TO ENABLE DEPICTION OF THE DEVICE



3.180 The remnants of the chemical improvised explosive devices show the characteristics and design of air bombs. Almost all of the remaining outer shells have three big metallic stabilising fins welded on the back. In more conventional weaponry, the role of the fins is to stabilise the entire ensemble during its flight/dive from the launching moment until it reaches the target by keeping the bomb nose-down during its descent. The process of stabilisation is necessary for improving the accuracy of the targeting process and to decrease the rate of fail. Without stabilising fins, bombs would tumble through the air and thus increase the probability of the fuse not hitting the ground and thus decrease the likelihood of detonation. Typically, conventional bombs are designed with at least four stabilising fins. The improvised ones, however, appeared to have only three.

3.181 Figure 34 below is from an open source and depicts the different appearances of improvised bombs versus more conventional types, particularly with respect to the number of fins. These are merely used to indicate these differences, with no implication of their being at all chemical in nature.

**FIGURE 34: CONVENTIONAL (LEFT) AND IMPROVISED AIR BOMBS (RIGHT) FINS DESIGN**



3.182 It is hypothesised that the rationale behind three stabilising fins and no more could derive from practicality of deployment, as follows. For easier transport, the improvised chemical air bombs were designed with a transport train comprising two wheels in the front and one on the back of the bomb. These wheels would facilitate the conveyance of an improvised device in transportation that may not be designed for such purposes. The three stabilising fins provide a relatively low-cost technical solution that facilitates both the use of the wheels and provides stabilisation. Furthermore, some of the social media sources show improvised bombs loaded into a helicopter. The internal design of helicopter and the launching procedures shown on social media create practical difficulties in handling a bomb designed with four fins. See Figure 35 below.

**FIGURE 35: PICTURE FROM SOCIAL MEDIA SHOWING TWO IMPROVISED BOMBS FITTED INTO A HELICOPTER**



3.183 Further evidence of the improvised bombs being dropped from a height is the deformation of the outer shell. In almost all cases that the team studied, the impact damage can be seen in the front part of the bomb or on the side. The deformation indicates that the device was launched from a height and the impact was frontal (when stabilised by fins) or on the side (without stabilisation). Both cases suggest that the object followed a free-fall trajectory.

3.184 In no cases did remnants suggest the presence of the following:

- (a) an engine, as in the case of a land-launched projectile; or
- (b) an energetic component that would usually be used to transport the projectile from the launching system to the target.

3.185 Furthermore, it is estimated that the size of the improvised chemical bomb would be too great to be launched from a terrestrial artillery type of weapon.

3.186 A comparison of aerial and terrestrial projectiles and rockets can be seen in Figure 36 below.

**FIGURE 36: PICTURES FROM MEDIA SHOWING THE DEFORMATION AND REMNANTS OF AIR BOMBS AND ROCKETS**



Media: Air Bomb Deformation



Image by Interviewee  
1011: Qmenas 16 March  
2015



Media: Barrel Bomb  
Projectile in Launching  
Position



Media: Barrel Bomb  
Projectile

3.187 The impact point (the crater) and the fact that the outer shell and internal components can be clearly visible (large pieces of remnants) confirm that impacts of the improvised air bombs in the alleged incidents did not involve a large amount of high explosive. If so filled, the bomb would have fragmented all the bomb components into very small pieces. That is not the case in the incidents assessed, where the most of the bomb components were found in large pieces. Similarly, the crater produced by a high-explosive bomb would have been bigger in diameter and deeper. For comparison, see Figure 37 below.

**FIGURE 37: PICTURES FROM OPEN-SOURCE MEDIA (LEFT) AND PROVIDED BY AN INTERVIEWEE (RIGHT) SHOWING THE CRATER FORMED FOLLOWING THE DETONATION OF A HIGH EXPLOSIVE IMPROVISED BOMB AND AN IMPROVISED CHEMICAL BOMB**



Media: Barrel Bomb High Explosive Crater



Image by Interviewee 1011: Qmenas, 16 March 2015

3.188 In principle, a bomb designed to be used as chemical bomb is designed such that the explosive train should only crack the walls of containers containing toxic chemicals. A greater quantity of explosive would destroy the toxic chemical by burning it. In addition, the use of a greater quantity of explosive to spread the toxic chemicals would decrease the concentration on the targeted area and potentially render the effects harmless.

3.189 In addition to the indications of these being chemical devices, there is also evidence indicating that they are a binary type, where two chemicals react to

produce what would be a more effective chemical weapon. Within the outer container (“barrel”), there are two different smaller types of container, one being designed to hold a liquefied gas (R22), the other being a plastic bottle, typical of the type that would hold drinks. The presence of a detonation cord wrapped around these two smaller containers would rupture the containers, allowing the mixing and subsequent reaction of the different chemical components.

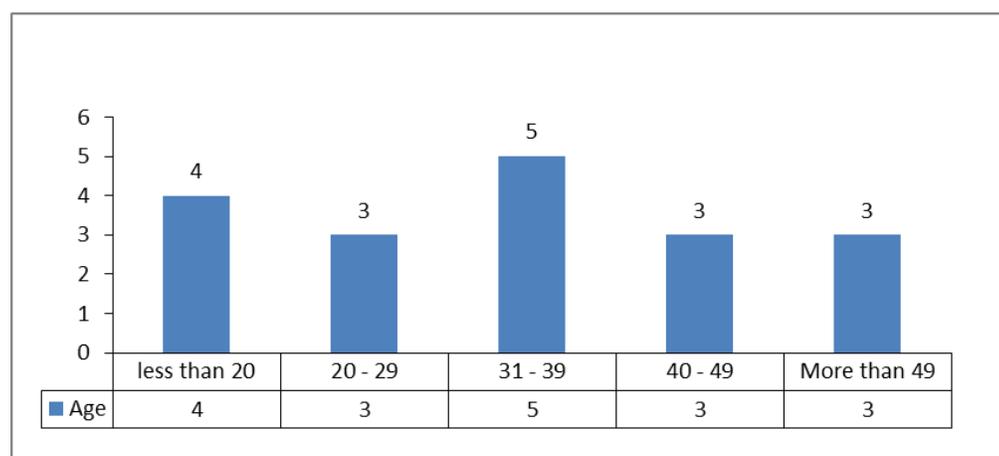
3.190 In almost all of the cases there is a visible metallic brim and two large bolts on the rear side of the outer shell, suggesting an improvised device designed to hold in place the inner containers during both transport and deployment. In case of a binary chemical bomb, without this system, on impact, the inner containers loaded inside the barrel bomb would be thrown outside due to inertial forces before the chemicals could be released, enabling them to mix and react. In the case of an improvised bomb filled with containers containing one single toxic chemical, on impact the barrels will be pushed outside and spread around the target, without the need to contain them in order to facilitate a reaction.

#### 4. WITNESSES IDENTIFIED BY THE SYRIAN ARAB REPUBLIC

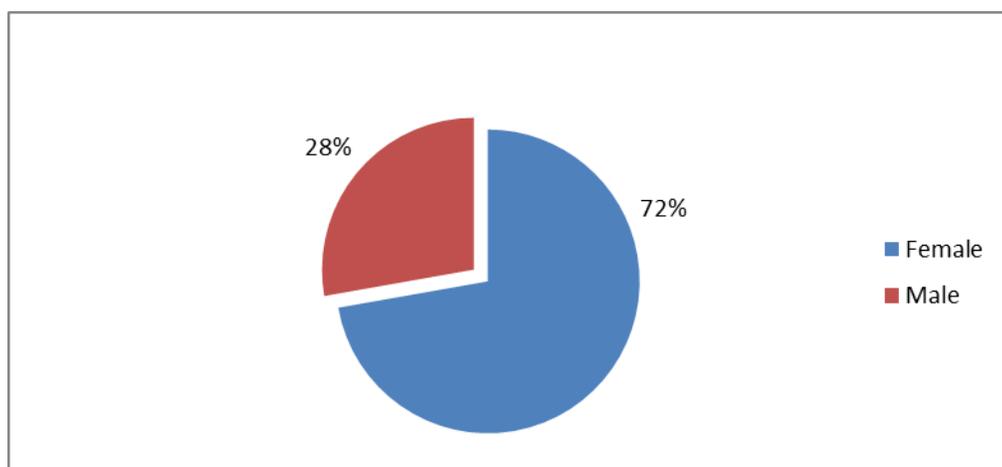
4.1 During meetings held from 21 to 23 March 2015, representatives from the Secretariat requested that the Syrian Government share any information possible within its purview related to the recent alleged incidents in the Idlib Governorate. In letters dated 7 April and 13 May 2015, the Director-General reiterated these requests. During meetings that took place from 12 to 15 July 2015, the Syrian authorities stated that some persons who had been displaced from northern regions of the Syrian Arab Republic were willing and available to be interviewed, and that the Syrian Government could facilitate the interviews. On 31 July 2015, the FFM-Bravo mandate was amended accordingly, and the said interviews were conducted from 4 to 7 August 2015. Twenty interviews were conducted with 18 interviewees.

4.2 The overall details of the interviewees are provided below.

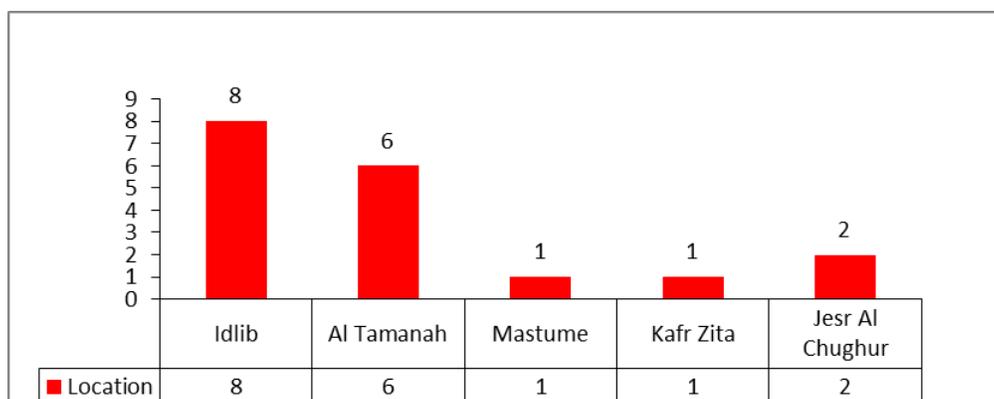
**FIGURE 38: AGE OF INTERVIEWEES (FFM-BRAVO, AUGUST 2015)**



**FIGURE 39: GENDER OF INTERVIEWEES (FFM-BRAVO, AUGUST 2015)**



**FIGURE 40: RESIDENCE AREA OF INTERVIEWEES (FFM-BRAVO, AUGUST 2015)**



4.3 The overall summary of the relevant information is as follows.

4.4 Seventy-eight percent (14 of 18) of the interviewees reported having no awareness of any incident related to the suspected use of toxic chemicals as a weapon having occurred in their area of residence.

4.5 Twenty-two percent (4 interviewees) informed the FFM about suspected cases of chemical incidents. All reported cases of difficulty of breathing, coughing, and ophthalmic signs. However, one was geographically and chronologically outside the scope of the FFM mandate (Hama Governorate in 2014), two were chronologically outside the scope of the mandate (referring to incidents in 2014), and one, based on the interviewee's testimony, was deemed unlikely to be the result of the use of toxic chemicals as a weapon.

4.6 As mentioned, one of the interviewees was from the Hama Governorate and was not in the Idlib Governorate during the period in question. Therefore, the testimony of this interviewee was deemed to be irrelevant to this particular

investigation. The statement of this interviewee indicated their having witnessed an incident in Kafr Zita (Hama Governorate) in March or April 2014 or at the end of summer 2014, as described below.

4.7 Six more interviewees were from Al-Tamanah, Idlib Governorate. This location is approximately 55 km south of the area described where the alleged incidents were reported to have taken place by witnesses heard during the interviews conducted by FFM-Alpha in May and June 2015. Therefore, their testimony had little impact on the investigation of those particular incidents, as none of the six interviewed by FFM-Bravo in August 2015 were in that locale at the time. There were, however, alleged incidents in their area (Al-Tamanah) in April and May 2014, and in April and June 2015, which were reported in open sources. The alleged incidents in 2014 are outside the current mandate. Nonetheless, the six interviewees who volunteered information on the subject reported no knowledge of any chemical incidents. One reported having received warnings to evacuate due to impending chemical attack around April or May of 2014, but after returning home the next day, observed no evidence of a chemical attack.

4.8 The alleged incidents of April and June 2015 in Al-Tamanah, however, are within the mandate. None of these interviewees reported any information related to these alleged incidents, and none of those interviewed by FFM-Alpha were within 50 km of Al-Tamanah at that time. The team therefore has insufficient information to make an assessment of these alleged incidents.

4.9 Two of the interviewees were from the village of Jesr Al-Chughur. This location is approximately 40 km southwest of Idlib City, within the Idlib Governorate. They reported no knowledge of any of the alleged incidents described in the interviews conducted by FFM-Alpha in May and June 2015. Similarly, they did not offer any information with regard to potential incidents in Jesr Al-Chughur, alleged in open sources to have occurred in May 2015. Furthermore, none of those interviewed by FFM-Alpha were within 40 km of Jesr Al-Chughur at that time. The team therefore has insufficient information to make an assessment of the alleged incidents in Jesr Al-Chughur.

4.10 The 11 remaining interviewees came from areas that were between approximately 4.5 and 7 km from the areas of the nearest impacts reported during the interviews conducted by FFM-Alpha in May and June 2015. As such, their testimony was deemed potentially relevant to those incidents under the FFM-Alpha mandate and was further analysed. Out of these 11 interviewees:

(a) Eight (73%) reported no knowledge of any incident involving chemicals. However, one of these eight reported having received warnings to evacuate due to impending chemical attack around April of 2015, but after returning home three days later, observed no evidence of a chemical attack.

(b) One (9%) reported a suspected incident in Idlib City at approximately 12:00 on 28 March 2015, as described below. The incident was determined by the team to be not likely involving the use of toxic chemicals as a weapon.

(c) Two (18%) reported a suspected incident of the use of toxic chemicals as a weapon in Idlib in 2014, as described below. According to their testimony, these same two vacated Idlib City after 16 March 2015 and prior to the reported dates of the alleged incidents in Idlib City, so were not in the area at the time. The departure of these two interviewees reduces to nine the number of potential witnesses in the area of the reported incidents during the time period of concern.

4.11 The narratives given for each incident in the following paragraphs is derived from interviews.

**Kafr Zita, spring or summer 2014**

4.12 Armed men fired a mortar canon as a helicopter passed overhead. Shortly afterward, the interviewee and her family saw yellow and white smoke, experienced difficulty breathing, and smelled a bad odour that they had not experienced before. At hospital, they saw one casualty, a three-year-old girl exhibiting laboured breathing, secretions, and cyanosis. The interviewee described witnessing approximately one month later men in civilian clothes and full-face respirators releasing gas from cylinders shortly after hearing an announcement from a mosque minaret that a chemical attack was impending. Further, the interviewee describes being taken to a base and witnessing men filling cylinders with white powder. All of these incidents are outside the scope of the mandate, however.

**Idlib City, 28 March 2015**

4.13 The interviewee reported an attack involving a nearby explosion in their neighbourhood (Al-Thawra neighbourhood of Idlib City), estimated to be approximately 30 m from their home. The explosion reportedly resulted in structural damage and broken windows in all the buildings throughout the neighbourhood, and generated a large volume of red dust and an unpleasant odour. Immediately following exposure to the dust, the witness and their family members experienced choking, coughing, eye irritation, and dizziness. The witness was unable to associate the odour with any familiar odour. Further questioning indicated the colour of the dust to be closer to light orange and possibly similar to the local soil. Later during the interview, the witness indicated that they witnessed no incidents related to chemical attacks, but had observed reportedly strange behaviour from some neighbours on the day of the described incident, in the form of gathering for discussions. Further information that was given of a pre-existing prevalence of medical conditions within the family, including asthma among others, could indicate that the described symptoms were the result of a combination of the pre-existing medical conditions being affected by a high volume of dust and psychological trauma.

**Idlib City, August 2014**

4.14 Two interviewees reported that a projectile exploded in the Al-Amaliyeh neighbourhood of Idlib City, approximately 10 m outside the bedroom of the eldest daughter, who was most affected. Both interviewees described a powerful explosion that shook the house, followed by a bad odour which they could not associate with a familiar odour. They described symptoms of the eldest daughter including coughing, a feeling of suffocating, tearing and irritation of eyes, runny nose, drooling, and unconsciousness. She was treated by her parents (both medical/emergency response professionals) with resuscitation and a bronchodilator. Two other family members experienced moderate coughing and throat irritation. Three other family members present did not experience symptoms. Another daughter was wounded by shrapnel. The residence incurred significant physical damage.

4.15 The testimony indicates the possibility of a chemical incident. However, the incident described occurred between 8 and 20 August 2014, which is outside the scope of the mandate.

## 5. CONCLUSIONS AND RECOMMENDATIONS

5.1 Much of the methodology section describes the manner in which the investigation would have been carried out, had there been ideal circumstances in which to do so. The inability of the team to visit the scene due to significant security issues, however, created several deviations from the ideal. Thus, the team could neither identify their own witnesses nor take their own samples. Furthermore, the supportive value of correlating physical reality, such as visible infrastructure, original records, and impact sites with information supplied by interviewees was also not possible. The team therefore had to rely on open-source information, interviewees identified and supplied by other entities, samples (lacking full certainty of chain of custody) as made available by the interviewees, and limited medical records.

5.2 It was in this context that the team had to glean the most benefit from available sources and make an assessment of credibility.

5.3 Open-source media are by their very nature prone to the influences and motivations of their authors, owners, and sponsors. While it is recognised that some media sources may be more reliable than others, it can also not be discounted that their source of information may have their own motivation. Furthermore, it was not possible to ascertain how many separate independent sources there may have been for the numerous similar stories in the media. What was clear, however, was that from social media such as Twitter, Facebook, and YouTube through to major international news media, there were strong indications of events occurring in the Idlib Governorate that involved the use of chemicals as a weapon.

5.4 In the preparatory phase, through contact with various NGOs, the FFM was able to discuss events with individuals who not only had second-hand knowledge of events, but also some who claimed first-hand experience. While there was not the opportunity to interview these at the time, this lent sufficient credibility to media reports to warrant additional investigation by the FFM.

5.5 The team explored a variety of means by which additional information and evidence could be obtained. Due to the complexity of the situation in the Idlib Governorate it was not possible to engender an environment that would be permissive enough to allow even a small team to visit any of the locations. Further liaison with NGOs revealed that only one had the capability to facilitate the transportation of interviewees and samples to a mutually convenient location.

5.6 The interview process used free recall. Amongst the advantages of this process is that information has to come from the interviewees themselves. This is followed by questioning and focusing on layers of specific details, including context. It then becomes significantly more difficult for individuals to give a coached story, without evidence of coaching being very apparent. From a collective point of view, versions of the same events from different interviewees can be cross-checked against each other for broad consistency. It is worth recognising that recall of an event from different interviewees will naturally contain variations and discrepancies, particularly given the time lag, unless the interviewees are coached to give an identical version of events. The FFM team has then to make that assessment as to whether these discrepancies amount to individually fabricated versions of events or are typical of the failings of human recall. Both interview teams included personnel with significant previous interview experience. Furthermore, the

interview teams with a cross-functional skill set enabled a deeper assessment of information. Details could therefore be assessed by team members with expertise in particular areas and discussed together. Regular breaks in the interview process facilitated these discussions and enabled a targeted approach in the continuation of the interview.

5.7 The fact that testimony included that given by medical staff, who were located remotely from the incidents, placed a good degree of credibility on the medical signs and symptoms reported both by casualties and first responders. Such testimony could not determine which chemical may have been responsible. However, the signs and symptoms are consistent with the effects caused by chemicals, in addition to other potential causes, which primarily irritate tissue such as eyes, nose, throat, and lungs.

5.8 It can therefore be concluded that the evidence received throughout the interview process gave the team a reasonable degree of confidence that a chemical had affected people in various locations in the Idlib Governorate.

5.9 Interviewees confirmed the availability of samples and the CVDCS confirmed their receipt from the interviewees. The remnants of the alleged munitions are consistent with those shown in open-source media, depicted in electronic media received independently from NGOs, as well as the interviewees themselves.

5.10 The results from chemical analysis indicate the presence of:

(a) chemicals, expected to be present due to the constituents of the containers, for example iron (from the refrigerant container) and PET (polyethylene terephthalate, from the plastic containers);

(b) chemicals related to the presence of explosives; and

(c) unexpected chemicals, the logical presence of which could only be explained by their addition to the explosive device/explosive remnants.

5.11 The elements/chemical ions identified in category (c) above are manganese, potassium, chloride, and bromide.

5.12 The ratio of potassium to manganese, coupled to the purple-red colour referred to in open-source media and interviews, as well as visible in photographs and videos, is consistent with the presence of potassium permanganate, which is an oxidising agent.

5.13 In the raw material for the production of chlorine, bromide is an expected contaminant which is not always removed in the production process. This bromine/bromide is often present in downstream products and therefore could be expected to be present, at significantly lower concentrations, whenever chlorine/chloride is detected. It is therefore reasonable to assume that if chloride is detected as being present, the presence of bromide may be linked to the chloride rather than other sources.

5.14 The volatility and reactivity of molecular chlorine ( $\text{Cl}_2$ ) are such that unless the appropriate sampling and analytical equipment were used at the time of an incident, detection of  $\text{Cl}_2$  is not possible some time later. The analyses of some of the samples indicated the presence of chloride at levels considerably higher than should be normally expected in such samples, unless added through the

incorporation of a chlorine-containing chemical to the original material, or by contamination after the incident.

5.15 The container for R22 is designed such that its pressure rating and materials of construction are fit for purpose. The vapour pressure of R22 is similar enough to that of certain other industrial chemicals, inter alia chlorine, anhydrous hydrogen chloride, and anhydrous ammonia, such that the refilling of R22 containers with other chemicals for use in an improvised bomb would be feasible, recognising that such use would not need to meet the same stringent requirements for commercial use of these containers.

5.16 Taken purely at face value, the samples and their analysis indicate the presence of potassium permanganate and a chlorine/chloride-containing chemical. Unfortunately, the chain of custody for the samples reduced the value of samples as strong stand-alone evidence. The results therefore need to be seen in light of supporting other evidence, in particular supporting the testimony of interviewees.

5.17 Given the oxidising nature of potassium permanganate, it is conceivable that it might be used to oxidise a chlorine containing compound, resulting in the production of  $\text{Cl}_2$ , thus giving rise to the 'bleach like' smell described by interviewees.

5.18 The description of the alleged chemical weapon and its deployment derives from several inputs, as previously described. The features of the improvised chemical bomb are consistent with its being designed for deployment from a height. As most incidents happened during darkness, it is not surprising that no interviewees claimed to have seen the means of deployment. The deformation of the remnants is consistent with mechanical impact and explosive rupture, rather than explosion causing deflagration. Witnesses also reported a lesser explosive sound than for other more conventional types of bombs. Moreover, casualties' signs and symptoms do not include physical injuries that would be expected from the deployment of an explosive device. The craters which have been claimed to have been caused by the device are also consistent with its being dropped from a height with lesser explosive power. It is therefore reasonable to assume that the devices were not designed to cause mechanical injury through explosive force but rather to rupture and release their contents.

5.19 In itself, no one source of information or evidence would lend particularly strong weighting as to whether there was an event that had used a toxic chemical as a weapon. However, taken in their entirety, sufficient facts were collected to conclude that incidents in the Syrian Arab Republic likely involved the use of a toxic chemical as a weapon. There is insufficient evidence to come to any firm conclusions as to the identification of the chemical, although there are factors indicating that the chemical probably contained the element chlorine.

## Appendix 1

### MANDATE OF THE OPCW FACT-FINDING MISSION

The following is a declassified version of the FFM team's mandate:

- To:** Phillips, Leonard Arthur, OPCW Fact-Finding Mission (FFM) Team Leader
- From:** The Director-General of the Organisation for the Prohibition of Chemical Weapons
- Subject:** Mandate for investigation of incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon in Idlib Governorate, the Syrian Arab Republic from 16 March 2015 onwards as reported in the media and determined by the Director-General to provide a credible basis for investigation.

*In accordance with preambular paragraph 8 and operative paragraphs 5 and 6 of OPCW Executive Council decision EC-M-48/DEC.1, dated 4 February 2015 and other relevant decisions of the Executive Council and in line with my authority to seek to uphold at all times the object and purpose of the Convention as reinforced by the United Nations Security Council resolutions 2118 (2013) and 2209 (2015), as applicable to the investigation referred to in the subject, I hereby mandate and instruct an inspection team under your leadership to conduct an investigation of incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon, in accordance with the modalities specified below:*

1. FFM activities to be conducted in: Country X and any other relevant locations,
2. Site for the FFM: Country X and, any other relevant locations, if deemed necessary by the Director-General.
3. Names of inspectors assigned to your team:  
See Appendix 2 (names redacted)
4. The inspection equipment which the inspection team has been authorised to carry will be selected from the list of approved equipment (Ref. C-1/DEC.71). Any additional equipment which might be necessary will be notified in advance to the State Party.
5. The deployment and all movements of the FFM team while in-country will be fully coordinated with all relevant authorities. No deployment or movement shall take place without all necessary authorizations. No such authorization shall be provided unless all suitable conditions, in particular a safe and enabling environment exist for the OPCW team, including no crossing of confrontation lines. The FFM team shall ensure that their whereabouts will be known at all times by designated personnel from the Operations Planning Branch.
6. FFM aims:
  - 6.1 Gather facts regarding the incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon, in Idlib Governorate, the Syrian Arab Republic, from 16 March 2015 onwards as reported in the media and determined by the Director-General to provide a credible basis for

investigation, mindful that the task of the FFM does not include the question of attributing responsibility for the alleged use; and

- 6.2 Report to the Director-General upon conclusion of FFM activities.
7. Operational instructions:
  - 7.1 Review and analyse all available information pertaining to reported incidents of alleged use of toxic chemicals, particularly chlorine, as a weapon;
  - 7.2 Collect testimonies from persons alleged to have been affected by the use of toxic chemicals, particularly chlorine, as a weapon, including those who underwent treatment, eye witnesses of the alleged use of toxic chemicals, particularly chlorine, medical personnel and other persons who have been treated or come into contact with persons who may have been affected by the alleged use of toxic chemicals, particularly chlorine;
  - 7.3 Where possible, and deemed necessary, carry out medical examinations, including autopsies, and collect biomedical samples of those alleged to have been affected;
  - 7.4 If possible, visit the hospitals and other locations as deemed relevant to the conduct its investigations;
  - 7.5 Examine and, if possible, collect copies of, the hospital records including patient registers, treatment records, and any other relevant records, as deemed necessary;
  - 7.6 Examine, and, if possible, collect copies of any other documentation and records deemed necessary;
  - 7.7 Take photographs and examine, and if possible collect copies of video and telephone records;
  - 7.8 If possible, and deemed necessary, physically examine and take samples from remnants of cylinders, containers, etc., alleged to have been used during the incidents under investigation;
  - 7.9 If possible, and deemed necessary, collect environmental samples at or from the alleged points of incidents and surrounding areas;
  - 7.10 Cooperate fully with the relevant authorities with regard to all aspects of the Mission; and
  - 7.11 All activities of the FFM will be undertaken in accordance with the relevant Secretariat procedures relating to the conduct of inspections during contingency operations, as applicable.

**Appendix 3**  
**FFM TEAM MEMBERS**

<b>Name</b>	<b>Role(s)</b>	<b>Speciality</b>
Inspector 0	Team Leader	Chemical production technologist (CPT)
Inspector 1	Deputy Team Leader. Interview team 1 support and continuity. Interview team 3 point of contact. Sample handling.	Analytical chemist (AC)
Inspector 2	Interview team 1 point of contact.	CPT
Inspector 3	Interview team 1	Health and safety specialist (HSS)
Inspector 4	Interview team 1. Security liaison.	Chemical weapons/ munitions specialist (CWMS)
Inspector 5	Interview team 2 point of contract. Logistics, security liaison, training coordinator.	CWMS
Inspector 6	Interview team 2	CPT
Inspector 7	Interview team 2. Logistics	HSS
Inspector 8	Interview team 2 support and continuity. Interview team 3.	Medical doctor
Inspector 9	Logistics, communications, command post support. Replacement on Interview team 1.	CWMS
Inspector 10	Evidence handling, sample handling.	AC
Inspector 11	Evidence handling, command post support	CPT
Inspector 12	Security liaison, command post.	CWMS
Inspector 13	Based at OPCW Headquarters (HQ), general support function.	CPT
Interpreter 1	Interpretation	Interpreter
Interpreter 2	Interpretation	Interpreter
Mission Planner 1	HQ-based operational and planning support	Mission planning coordinator (MPC)

**Appendix 2**  
**TIMELINES**

<b>Dates (all 2015)</b>	<b>Activity</b>	<b>Location</b>
23 March to 2 April	Team forming and building. Gathering information about the chemical incidents from open sources.	Headquarters (HQ)
3 April	First meeting with the CVDCS.	The Hague
7 to 8 April	Training session on interview techniques provided by the United Kingdom of Great Britain and Northern Ireland.	HQ
9 April	In house training session on how to deal with traumatised interviewees provided by the Health and Safety Branch (HSB).	HQ
10 to 13 April	First coordination meetings in Country X. Points of contact established with relevant authorities in Country X and several NGOs.	Country X
13 to 14 April	Training session on interview techniques provided by the United Kingdom of Great Britain and Northern Ireland	HQ
16 April	In-house training session on how to deal with traumatised interviewees provided by HSB.	HQ
17 April	Second meeting with the CVDCS. Request made for the names of injured persons, doctors, first responders, and witnesses willing to speak to the OPCW.	Brussels
19 to 24 April	Safe and Secure Approaches in Field Environments (SSAFE) training	Germany
20 April	Evidence management training provided by the Netherlands Forensic Institute (NFI).	HQ
29 and 30 April	Team received the list of names from the CVDCS. Selection of potential interviewees and communication to the CVDCS.	HQ
1 to 4 May	First interview	Country X
4 May	The list of interviewees' names handed over to the authorities of Country X.	HQ
4 to 8 May	In-house practical training on interview techniques	HQ
10 to 13 May	Second coordination meeting with the authorities of Country X.	Country X
14 May	The deployment plan given to relevant authorities and NGOs.	HQ

<b>Dates (all 2015)</b>	<b>Activity</b>	<b>Location</b>
19 to 21 May	Main deployment. Set up of interview location and team office.	Country X
22 May	Receipt of samples. Arrival of first batch of interviewees.	Country X
23 May to 5 June	Interviews	Country X
5 to 6 June	Equipment packing and return to HQ	Country X
7 to 14 June	Rest and recuperation. Administrative tasks, equipment return, evidence collation.	HQ
15 June to date	Team size reduction, interview transcription, evidence review, report writing.	HQ
21 to 24 July	Collection of second set of samples	Country X
4 to 7 August	Interviews carried out by Bravo	Syrian Arab Republic

## Appendix 4

## REFERENCE DOCUMENTATION

4.	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
	QDOC/INS/WI/IAU05	Work Instruction for Conducting Interviews During an Investigation of Alleged Use
	QDOC/INS/SOP/IAU02	Standard Operating Procedure Investigation of Alleged Use (IAU) Operations
	QDOC/INS/WI/IAU01	Work Instruction for Command Post Operations During an Investigation of Alleged Use of Chemical Weapons
	QDOC/INS/SOP/GG011	Standard Operating Procedure for Managing Inspection Laptops and Other Confidentiality Support Materials
	QDOC/LAB/SOP/OSA2	Standard Operating Procedure for Off-Site Analysis of Authentic Samples
	QDOC/LAB/WI/CS01	Work Instruction for Handling of Authentic Samples from Inspection Sites and Packing Off-Site Samples at the OPCW Laboratory
	QDOC/LAB/WI/CS03	Work Instruction for Documentation, Chain of Custody and Confidentiality for Handling Off-Site Samples at the OPCW Laboratory
	QDOC/LAB/WI/OSA3	Work Instruction for Chain of Custody and Documentation for OPCW Samples On-Site
	QDOC/LAB/WI/OSA4	Work Instruction for Packing of Off-Site Samples

## Appendix 5

## OPEN-SOURCE REFERENCES AND INFORMATION

Date of Incident	Location	Source/link(s)
16/03/2015	Qmenas	<a href="https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war">https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war</a>
16/03/2015	Qmenas and Sarmin – 20:45	<a href="https://youtu.be/f6qBHWgPf7Q">https://youtu.be/f6qBHWgPf7Q</a> , <a href="https://youtu.be/ZgWP_QprOP4">https://youtu.be/ZgWP_QprOP4</a> , <a href="https://youtu.be/XAORzTza7rg">https://youtu.be/XAORzTza7rg</a> , <a href="https://youtu.be/nQg1B0k5Zkk">https://youtu.be/nQg1B0k5Zkk</a> , <a href="https://youtu.be/JUSH7rHBQsc">https://youtu.be/JUSH7rHBQsc</a> , <a href="https://youtu.be/yzGcHdR2AVs">https://youtu.be/yzGcHdR2AVs</a> , <a href="https://youtu.be/j96W2l_oqgo">https://youtu.be/j96W2l_oqgo</a> , <a href="https://youtu.be/W8eZkU6jnTE">https://youtu.be/W8eZkU6jnTE</a> , <a href="https://youtu.be/FAhdzWWKbHA">https://youtu.be/FAhdzWWKbHA</a> , <a href="https://youtu.be/Zj2fgROPFJA">https://youtu.be/Zj2fgROPFJA</a> , <a href="https://youtu.be/2m17JnGFYdc">https://youtu.be/2m17JnGFYdc</a> , <a href="https://youtu.be/6bTrpHYMEDY">https://youtu.be/6bTrpHYMEDY</a> , <a href="https://youtu.be/ujb9ROoQaZY">https://youtu.be/ujb9ROoQaZY</a> , <a href="https://youtu.be/ovPKtOjOx7g">https://youtu.be/ovPKtOjOx7g</a> , <a href="https://youtu.be/Gx2h3_jXGzc">https://youtu.be/Gx2h3_jXGzc</a> , <a href="https://youtu.be/MmNBLUtP3hw">https://youtu.be/MmNBLUtP3hw</a> , <a href="https://youtu.be/Vc9cuH1icHo">https://youtu.be/Vc9cuH1icHo</a> , <a href="https://youtu.be/SMVkJIY5II">https://youtu.be/SMVkJIY5II</a> , <a href="https://youtu.be/oZoAwJUyqTY">https://youtu.be/oZoAwJUyqTY</a> , <a href="https://youtu.be/gPa_6CoYD_o">https://youtu.be/gPa_6CoYD_o</a> , <a href="https://youtu.be/ja_Osq_RTqU">https://youtu.be/ja_Osq_RTqU</a> , <a href="https://youtu.be/JIIBRb2aFzo">https://youtu.be/JIIBRb2aFzo</a> , <a href="https://youtu.be/4Kg4qSo40S0">https://youtu.be/4Kg4qSo40S0</a> , <a href="https://youtu.be/m_zeRoX_L7s">https://youtu.be/m_zeRoX_L7s</a> , <a href="https://youtu.be/21K2g_LkSts">https://youtu.be/21K2g_LkSts</a> , <a href="https://youtu.be/qnp00TocRSY">https://youtu.be/qnp00TocRSY</a> , <a href="https://youtu.be/nvwonr_QqGo">https://youtu.be/nvwonr_QqGo</a> , <a href="https://youtu.be/N84aC1z0bjw">https://youtu.be/N84aC1z0bjw</a> , <a href="https://youtu.be/k7TtwicGkTdo">https://youtu.be/k7TtwicGkTdo</a> , <a href="https://youtu.be/J6c6A1Qnbbw">https://youtu.be/J6c6A1Qnbbw</a> , <a href="https://twitter.com/ughxughx111/status/577548098806915072">https://twitter.com/ughxughx111/status/577548098806915072</a> , <a href="https://twitter.com/sweet_hart1165/status/577549747143196672">https://twitter.com/sweet_hart1165/status/577549747143196672</a> , <a href="https://twitter.com/aboyosha3homs/status/577550356374159360">https://twitter.com/aboyosha3homs/status/577550356374159360</a> , <a href="https://twitter.com/anastracey/status/577552436975501312">https://twitter.com/anastracey/status/577552436975501312</a> , <a href="https://twitter.com/omar_3lwan/status/577552527912267776">https://twitter.com/omar_3lwan/status/577552527912267776</a> , <a href="https://twitter.com/hassanalhesen/status/577553118914863104">https://twitter.com/hassanalhesen/status/577553118914863104</a> , <a href="https://twitter.com/SarmeenCoordina/status/577556117657661440">https://twitter.com/SarmeenCoordina/status/577556117657661440</a> , <a href="https://twitter.com/anasanas84/status/577556934624210944">https://twitter.com/anasanas84/status/577556934624210944</a> , <a href="https://twitter.com/news76696251/status/577604460974907392">https://twitter.com/news76696251/status/577604460974907392</a>
16/03/2015	Qmenas and Sarmin – 22:15	<a href="https://youtu.be/f6qBHWgPf7Q">https://youtu.be/f6qBHWgPf7Q</a> , <a href="https://youtu.be/ZgWP_QprOP4">https://youtu.be/ZgWP_QprOP4</a> , <a href="https://youtu.be/XAORzTza7rg">https://youtu.be/XAORzTza7rg</a> , <a href="https://youtu.be/nQg1B0k5Zkk">https://youtu.be/nQg1B0k5Zkk</a> , <a href="https://youtu.be/JUSH7rHBQsc">https://youtu.be/JUSH7rHBQsc</a> , <a href="https://youtu.be/yzGcHdR2AVs">https://youtu.be/yzGcHdR2AVs</a> , <a href="https://youtu.be/j96W2l_oqgo">https://youtu.be/j96W2l_oqgo</a> , <a href="https://youtu.be/W8eZkU6jnTE">https://youtu.be/W8eZkU6jnTE</a> , <a href="https://youtu.be/FAhdzWWKbHA">https://youtu.be/FAhdzWWKbHA</a> , <a href="https://youtu.be/Zj2fgROPFJA">https://youtu.be/Zj2fgROPFJA</a> , <a href="https://youtu.be/2m17JnGFYdc">https://youtu.be/2m17JnGFYdc</a> , <a href="https://youtu.be/6bTrpHYMEDY">https://youtu.be/6bTrpHYMEDY</a> , <a href="https://youtu.be/ujb9ROoQaZY">https://youtu.be/ujb9ROoQaZY</a> , <a href="https://youtu.be/ovPKtOjOx7g">https://youtu.be/ovPKtOjOx7g</a> , <a href="https://youtu.be/Gx2h3_jXGzc">https://youtu.be/Gx2h3_jXGzc</a> , <a href="https://youtu.be/MmNBLUtP3hw">https://youtu.be/MmNBLUtP3hw</a> , <a href="https://youtu.be/Vc9cuH1icHo">https://youtu.be/Vc9cuH1icHo</a> , <a href="https://youtu.be/SMVkJIY5II">https://youtu.be/SMVkJIY5II</a> , <a href="https://youtu.be/oZoAwJUyqTY">https://youtu.be/oZoAwJUyqTY</a> , <a href="https://youtu.be/gPa_6CoYD_o">https://youtu.be/gPa_6CoYD_o</a> , <a href="https://youtu.be/ja_Osq_RTqU">https://youtu.be/ja_Osq_RTqU</a> , <a href="https://youtu.be/JIIBRb2aFzo">https://youtu.be/JIIBRb2aFzo</a> , <a href="https://youtu.be/4Kg4qSo40S0">https://youtu.be/4Kg4qSo40S0</a> , <a href="https://youtu.be/m_zeRoX_L7s">https://youtu.be/m_zeRoX_L7s</a> , <a href="https://youtu.be/21K2g_LkSts">https://youtu.be/21K2g_LkSts</a> , <a href="https://youtu.be/qnp00TocRSY">https://youtu.be/qnp00TocRSY</a> , <a href="https://youtu.be/nvwonr_QqGo">https://youtu.be/nvwonr_QqGo</a> , <a href="https://youtu.be/N84aC1z0bjw">https://youtu.be/N84aC1z0bjw</a> , <a href="https://youtu.be/k7TtwicGkTdo">https://youtu.be/k7TtwicGkTdo</a> , <a href="https://youtu.be/J6c6A1Qnbbw">https://youtu.be/J6c6A1Qnbbw</a> , <a href="https://twitter.com/ughxughx111/status/577548098806915072">https://twitter.com/ughxughx111/status/577548098806915072</a> , <a href="https://twitter.com/sweet_hart1165/status/577549747143196672">https://twitter.com/sweet_hart1165/status/577549747143196672</a> , <a href="https://twitter.com/aboyosha3homs/status/577550356374159360">https://twitter.com/aboyosha3homs/status/577550356374159360</a> , <a href="https://twitter.com/anastracey/status/577552436975501312">https://twitter.com/anastracey/status/577552436975501312</a> , <a href="https://twitter.com/omar_3lwan/status/577552527912267776">https://twitter.com/omar_3lwan/status/577552527912267776</a> , <a href="https://twitter.com/hassanalhesen/status/577553118914863104">https://twitter.com/hassanalhesen/status/577553118914863104</a> , <a href="https://twitter.com/SarmeenCoordina/status/577556117657661440">https://twitter.com/SarmeenCoordina/status/577556117657661440</a> , <a href="https://twitter.com/anasanas84/status/577556934624210944">https://twitter.com/anasanas84/status/577556934624210944</a> , <a href="https://twitter.com/news76696251/status/577604460974907392">https://twitter.com/news76696251/status/577604460974907392</a> <a href="https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war">https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war</a>
23/03/2015	Qmenas	<a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920</a>
23/03/2015	Binnish	<a href="https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war">https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war</a>
23/03/2015	Sarmin	<a href="https://twitter.com/bellall0088/status/579797897304281090">https://twitter.com/bellall0088/status/579797897304281090</a> , <a href="https://twitter.com/opaidaaa/status/579797943991066626">https://twitter.com/opaidaaa/status/579797943991066626</a> , <a href="https://twitter.com/binnishFree2012/status/579798112887291904">https://twitter.com/binnishFree2012/status/579798112887291904</a> , <a href="https://twitter.com/SarmeenCoordina/status/579800424447909888">https://twitter.com/SarmeenCoordina/status/579800424447909888</a> , <a href="https://www.facebook.com/photo.php?fbid=464014523746647">https://www.facebook.com/photo.php?fbid=464014523746647</a> , <a href="https://twitter.com/Syria_Breaking/status/579804520529694720">https://twitter.com/Syria_Breaking/status/579804520529694720</a> , <a href="http://www.youtube.com/watch?v=jS90Di0j0k4">http://www.youtube.com/watch?v=jS90Di0j0k4</a> , <a href="http://www.youtube.com/watch?v=g0lbjiVBOW">http://www.youtube.com/watch?v=g0lbjiVBOW</a> , <a href="http://www.youtube.com/watch?v=1ebkWL6RMCQ">http://www.youtube.com/watch?v=1ebkWL6RMCQ</a> , <a href="http://www.youtube.com/watch?v=cqlSzgLR10">http://www.youtube.com/watch?v=cqlSzgLR10</a> , <a href="http://www.youtube.com/watch?v=89MqnbBGNy4">http://www.youtube.com/watch?v=89MqnbBGNy4</a>

Date of Incident	Location	Source/link(s)
24/03/2015	Binnish	<a href="https://twitter.com/alasiAgency/status/580397065659924480">https://twitter.com/alasiAgency/status/580397065659924480</a> , <a href="https://www.facebook.com/press.siraj/posts/672579012868917">https://www.facebook.com/press.siraj/posts/672579012868917</a> , <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920</a> , <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920</a> , <a href="https://twitter.com/tajhoran1/status/580417521926451200">https://twitter.com/tajhoran1/status/580417521926451200</a> , <a href="https://twitter.com/thuwwar/status/580421626199732226">https://twitter.com/thuwwar/status/580421626199732226</a> , <a href="https://www.facebook.com/binnish.freemen.sy/posts/715904655197889">https://www.facebook.com/binnish.freemen.sy/posts/715904655197889</a> , <a href="https://youtu.be/WnT4oxdE1ZU">https://youtu.be/WnT4oxdE1ZU</a> , <a href="https://youtu.be/-IDI7tNgiVE">https://youtu.be/-IDI7tNgiVE</a> <a href="https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war">https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war</a>
24/03/2015	Qmenas	<a href="https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war">https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war</a>
25/03/2015	Sarmin	<a href="https://www.facebook.com/binnish.today/posts/455588234604519">https://www.facebook.com/binnish.today/posts/455588234604519</a> , <a href="https://twitter.com/khaledkhalaf87/status/580882316412751872">https://twitter.com/khaledkhalaf87/status/580882316412751872</a> , <a href="https://twitter.com/shaamnews/status/580887031368290305">https://twitter.com/shaamnews/status/580887031368290305</a> , <a href="https://youtu.be/kTL7c4AsrJQ">https://youtu.be/kTL7c4AsrJQ</a> , <a href="https://twitter.com/gazaelsyria111/status/580991276679479296">https://twitter.com/gazaelsyria111/status/580991276679479296</a> , <a href="http://www.youtube.com/watch?v=T8ZwykZG-U0">http://www.youtube.com/watch?v=T8ZwykZG-U0</a> , <a href="http://www.youtube.com/watch?v=sdbWff2__nk">http://www.youtube.com/watch?v=sdbWff2__nk</a> , <a href="http://www.youtube.com/watch?v=66JEoY17pTc">http://www.youtube.com/watch?v=66JEoY17pTc</a> , <a href="http://www.youtube.com/watch?v=6-qRi69NdcU">http://www.youtube.com/watch?v=6-qRi69NdcU</a> , <a href="https://www.facebook.com/permalink.php?story_fbid=749176561848069&amp;id=469192429846485">https://www.facebook.com/permalink.php?story_fbid=749176561848069&amp;id=469192429846485</a>
26/03/2015	Sarmin	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> , <a href="https://twitter.com/sahabaturiah/status/581296538216845312">https://twitter.com/sahabaturiah/status/581296538216845312</a> , <a href="http://www.mei.edu/content/article/atrocities-syria-who-will-be-left-speak-me">http://www.mei.edu/content/article/atrocities-syria-who-will-be-left-speak-me</a>
29/03/2015	Idlib	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
30/03/2015	Idlib, Mehrab round-about & Matahen	<a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920</a>
31/03/2015	Idlib	<a href="https://twitter.com/abunaacem711/status/582868192969781248">https://twitter.com/abunaacem711/status/582868192969781248</a> , <a href="https://twitter.com/anasanas84/status/582868731140956162">https://twitter.com/anasanas84/status/582868731140956162</a> , <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920</a> , <a href="https://twitter.com/bathn_allaah/status/582872952749707265">https://twitter.com/bathn_allaah/status/582872952749707265</a> , <a href="https://twitter.com/DinSyr/status/582874307509886976">https://twitter.com/DinSyr/status/582874307509886976</a> , <a href="https://www.facebook.com/3mar.shamali/posts/1614794892070367">https://www.facebook.com/3mar.shamali/posts/1614794892070367</a> , <a href="https://youtu.be/HI56SVU_ph8">https://youtu.be/HI56SVU_ph8</a> , <a href="http://www.youtube.com/watch?v=ww6uEez7b8s">http://www.youtube.com/watch?v=ww6uEez7b8s</a> , <a href="http://www.youtube.com/watch?v=P4IuSoQLpsw">http://www.youtube.com/watch?v=P4IuSoQLpsw</a> ,
10/04/2015	Al-Tamanah	<a href="https://twitter.com/Step_Agency/status/586509472455090177">https://twitter.com/Step_Agency/status/586509472455090177</a> , <a href="https://twitter.com/mohamadsalomala/status/586515905552715777">https://twitter.com/mohamadsalomala/status/586515905552715777</a> , <a href="http://www.qasionnews.com/ar/node/26371%23sthash.bVZNRWEf.dpbs">http://www.qasionnews.com/ar/node/26371%23sthash.bVZNRWEf.dpbs</a> , <a href="https://twitter.com/alxceszorba/status/586524484678615040">https://twitter.com/alxceszorba/status/586524484678615040</a> , <a href="http://www.youtube.com/watch?v=RxF0JBU1ie8">http://www.youtube.com/watch?v=RxF0JBU1ie8</a> , <a href="http://www.youtube.com/watch?v=2dmb7BoIiyM">http://www.youtube.com/watch?v=2dmb7BoIiyM</a> , <a href="http://www.youtube.com/watch?v=OFjOG4P9oJo">http://www.youtube.com/watch?v=OFjOG4P9oJo</a> , <a href="http://www.youtube.com/watch?v=Cb2TfJesDM0">http://www.youtube.com/watch?v=Cb2TfJesDM0</a> , <a href="http://www.youtube.com/watch?v=PbckiaHbpks">http://www.youtube.com/watch?v=PbckiaHbpks</a> <a href="https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war">https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war</a>

Date of Incident	Location	Source/link(s)
16/04/2015	Idlib (Al Dbeyt area)	<a href="https://twitter.com/_looaee/status/588792040374329344">https://twitter.com/_looaee/status/588792040374329344</a> , <a href="https://twitter.com/AmmaRooV_11/status/588793074454757376">https://twitter.com/AmmaRooV_11/status/588793074454757376</a> , <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="https://twitter.com/ameeralhalabi/status/588793306684981251">https://twitter.com/ameeralhalabi/status/588793306684981251</a> , <a href="https://www.facebook.com/permalink.php?story_fbid=454989451331265&amp;id=100004606429043">https://www.facebook.com/permalink.php?story_fbid=454989451331265&amp;id=100004606429043</a> , <a href="https://twitter.com/anasanas84/status/588795732020330496">https://twitter.com/anasanas84/status/588795732020330496</a> , <a href="https://twitter.com/WalidKilani888/status/588795944872898561">https://twitter.com/WalidKilani888/status/588795944872898561</a> , <a href="https://twitter.com/Mohamed_sbeh/status/588796536907296770">https://twitter.com/Mohamed_sbeh/status/588796536907296770</a> , <a href="https://twitter.com/tahaasi1/status/588796666590978048">https://twitter.com/tahaasi1/status/588796666590978048</a> , <a href="https://www.facebook.com/aboo.kazem.9/posts/491692234311443">https://www.facebook.com/aboo.kazem.9/posts/491692234311443</a> , <a href="https://twitter.com/abaadnan2/status/588800979866427392">https://twitter.com/abaadnan2/status/588800979866427392</a> , <a href="https://twitter.com/salqin/status/588801047944155136">https://twitter.com/salqin/status/588801047944155136</a> , <a href="https://www.facebook.com/Banias.M.O1/posts/842243752508452">https://www.facebook.com/Banias.M.O1/posts/842243752508452</a> , <a href="https://twitter.com/aboalbraaalrab/status/588805461140447232">https://twitter.com/aboalbraaalrab/status/588805461140447232</a> , <a href="https://www.facebook.com/SRGC.Mediala/posts/949529428414129">https://www.facebook.com/SRGC.Mediala/posts/949529428414129</a> , <a href="https://twitter.com/SRGCcommission/status/588810640648699904">https://twitter.com/SRGCcommission/status/588810640648699904</a> , <a href="https://twitter.com/SYR_REV_NEWS/status/588811629409669121">https://twitter.com/SYR_REV_NEWS/status/588811629409669121</a> , <a href="https://twitter.com/HalabTodayTV/status/588813443785961475">https://twitter.com/HalabTodayTV/status/588813443785961475</a> , <a href="http://din-sy.net/ar/Media/Subjects16221/">http://din-sy.net/ar/Media/Subjects16221/</a> , <a href="https://twitter.com/hadialbahra/status/588823928283537410">https://twitter.com/hadialbahra/status/588823928283537410</a> , <a href="https://twitter.com/radwan0001/status/588835215176572929">https://twitter.com/radwan0001/status/588835215176572929</a> , <a href="http://www.youtube.com/watch?v=8HztVAfSyys">http://www.youtube.com/watch?v=8HztVAfSyys</a> , <a href="http://www.youtube.com/watch?v=y4Dt95Tv7v4">http://www.youtube.com/watch?v=y4Dt95Tv7v4</a> , <a href="http://www.youtube.com/watch?v=PVpoTbOptgQ">http://www.youtube.com/watch?v=PVpoTbOptgQ</a> , <a href="http://www.youtube.com/watch?v=wMfpJpvhnX0">http://www.youtube.com/watch?v=wMfpJpvhnX0</a> , <a href="http://www.youtube.com/watch?v=GN7aTPu6eJw">http://www.youtube.com/watch?v=GN7aTPu6eJw</a> , <a href="http://www.youtube.com/watch?v=yJJUMofu4Vo">http://www.youtube.com/watch?v=yJJUMofu4Vo</a>
16/04/2015	Kurin	<a href="https://twitter.com/paradoxy13/status/588829707161960449">https://twitter.com/paradoxy13/status/588829707161960449</a> , <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920</a> , <a href="https://twitter.com/search?q=korin%20chlorine&amp;src=typd">https://twitter.com/search?q=korin%20chlorine&amp;src=typd</a> <a href="http://www.worldbulletin.net/haberler/158019/assad-regime-drops-chemical-barrel-bombs-on-idlib?utm_medium=twitter&amp;utm_source=twitterfeed">http://www.worldbulletin.net/haberler/158019/assad-regime-drops-chemical-barrel-bombs-on-idlib?utm_medium=twitter&amp;utm_source=twitterfeed</a>
16/04/2015	Sarmin	<a href="http://www.mei.edu/content/article/atrocities-syria-who-will-be-left-speak-me">http://www.mei.edu/content/article/atrocities-syria-who-will-be-left-speak-me</a> , <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/233/attachments/original/1429904920/2015.04.24_SNC_2139_letter_-_Qatar.pdf?1429904920</a>
17/04/2015	Idlib, Tamanah, Kafr Najd	<a href="http://en.etilaf.org/date/2015/4/17.html?catid=16">http://en.etilaf.org/date/2015/4/17.html?catid=16</a>
25/04/2015	Nayrab	<a href="https://twitter.com/SarmeenCoordina/status/591754319260721153">https://twitter.com/SarmeenCoordina/status/591754319260721153</a> , <a href="https://twitter.com/FreeSyrianTaem/status/591764896980799488">https://twitter.com/FreeSyrianTaem/status/591764896980799488</a> , <a href="https://twitter.com/asaadalasaad191/status/591892289842188290">https://twitter.com/asaadalasaad191/status/591892289842188290</a> , <a href="https://twitter.com/Step_Agency/status/591902653963247616">https://twitter.com/Step_Agency/status/591902653963247616</a> , <a href="https://twitter.com/mostafasy636/status/591853893694296064">https://twitter.com/mostafasy636/status/591853893694296064</a> , <a href="https://www.youtube.com/watch?v=_Ifs5GkagQA">https://www.youtube.com/watch?v=_Ifs5GkagQA</a>
26/04/2015	Jabal Zawiye	<a href="http://www.middleeasteye.net/news/syrian-rebel-seize-military-base-idlib-province-2134817759">http://www.middleeasteye.net/news/syrian-rebel-seize-military-base-idlib-province-2134817759</a>

Date of Incident	Location	Source/link(s)
26/04/2015	Kafr Uwayd	<p><a href="https://twitter.com/m3tz_39/status/592412137848381441">https://twitter.com/m3tz_39/status/592412137848381441</a>, <a href="https://twitter.com/m3tz_39/status/592413029418934272">https://twitter.com/m3tz_39/status/592413029418934272</a>, <a href="https://twitter.com/a7madati9/status/592413092824354817">https://twitter.com/a7madati9/status/592413092824354817</a>, <a href="https://twitter.com/yamama_sh22/status/592413458181816320">https://twitter.com/yamama_sh22/status/592413458181816320</a>, <a href="https://twitter.com/alidddd99/status/592414486813876224">https://twitter.com/alidddd99/status/592414486813876224</a>, <a href="https://twitter.com/abooslah/status/592415469388353536">https://twitter.com/abooslah/status/592415469388353536</a>, <a href="https://twitter.com/mohamadshalomala/status/592415513994784768">https://twitter.com/mohamadshalomala/status/592415513994784768</a>, <a href="https://twitter.com/aboalaa_ahmadxd/status/592417771713142784">https://twitter.com/aboalaa_ahmadxd/status/592417771713142784</a>, <a href="https://twitter.com/shaamnews/status/592417717526929409">https://twitter.com/shaamnews/status/592417717526929409</a>, <a href="http://din-sy.net/ar/Media/Subjects16997/">http://din-sy.net/ar/Media/Subjects16997/</a>, <a href="https://twitter.com/SyrianArwad/status/592418923976462336">https://twitter.com/SyrianArwad/status/592418923976462336</a>, <a href="https://twitter.com/asimzedan/status/592432005956112384/photo/1">https://twitter.com/asimzedan/status/592432005956112384/photo/1</a>, <a href="https://www.facebook.com/permalink.php?story_fbid=765316066900785&amp;id=469192429846485">https://www.facebook.com/permalink.php?story_fbid=765316066900785&amp;id=469192429846485</a>, <a href="https://www.youtube.com/watch?v=A2GNP5n4gzY">https://www.youtube.com/watch?v=A2GNP5n4gzY</a>, <a href="https://www.youtube.com/watch?v=BmNOwUxP8Wk">https://www.youtube.com/watch?v=BmNOwUxP8Wk</a>, <a href="http://www.youtube.com/watch?v=hpLYUTNVDLQ">http://www.youtube.com/watch?v=hpLYUTNVDLQ</a>, <a href="https://www.youtube.com/watch?v=fhlTM_56tC0">https://www.youtube.com/watch?v=fhlTM_56tC0</a> <a href="https://www.facebook.com/permalink.php?story_fbid=847670258638283&amp;id=844879298917379">https://www.facebook.com/permalink.php?story_fbid=847670258638283&amp;id=844879298917379</a> <a href="http://www.gettyimages.nl/detail/video/syrians-including-children-receive-treatment-at-a-local-nieuwsfootage/471545080">http://www.gettyimages.nl/detail/video/syrians-including-children-receive-treatment-at-a-local-nieuwsfootage/471545080</a> <a href="https://twitter.com/search?q=%22kafr%20owaid%22%20since%3A2015-04-26%20until%3A2015-04-27&amp;src=typd">https://twitter.com/search?q=%22kafr%20owaid%22%20since%3A2015-04-26%20until%3A2015-04-27&amp;src=typd</a></p>
26/04/2015	Nayrab	<p><a href="https://twitter.com/m_aboalyman/status/592435256973721600">https://twitter.com/m_aboalyman/status/592435256973721600</a>, <a href="https://twitter.com/FreeSrmeen/status/592436912725569536">https://twitter.com/FreeSrmeen/status/592436912725569536</a>, <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="https://twitter.com/ughxughx111/status/592444596883423232">https://twitter.com/ughxughx111/status/592444596883423232</a>, <a href="https://twitter.com/abooslah/status/592462672379179008">https://twitter.com/abooslah/status/592462672379179008</a>, <a href="https://www.youtube.com/watch?v=c5GrGcg8N7c">https://www.youtube.com/watch?v=c5GrGcg8N7c</a>, <a href="https://www.facebook.com/permalink.php?story_fbid=368351930038543&amp;id=232634920276912">https://www.facebook.com/permalink.php?story_fbid=368351930038543&amp;id=232634920276912</a></p>
27/04/2015	An Nayrab	<p><a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a></p>
28/04/2015	Kansafrah and kurasa'ah (Qursa'a)	<p><a href="https://twitter.com/aljisrtv/status/593065386163249153">https://twitter.com/aljisrtv/status/593065386163249153</a>, <a href="https://twitter.com/SyrianArwad/status/593073217109159938">https://twitter.com/SyrianArwad/status/593073217109159938</a>, <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146</a>, <a href="https://www.facebook.com/SASNEWSAGENCY/photos/a.733987789978579.1073741828.731915533519138/964651626912193/?type=1&amp;permPage=1">https://www.facebook.com/SASNEWSAGENCY/photos/a.733987789978579.1073741828.731915533519138/964651626912193/?type=1&amp;permPage=1</a>, <a href="https://www.facebook.com/photo.php?fbid=836813786405330">https://www.facebook.com/photo.php?fbid=836813786405330</a>, <a href="https://twitter.com/Ayavetch/status/593072355737481218/photo/1">https://twitter.com/Ayavetch/status/593072355737481218/photo/1</a>, <a href="http://www.youtube.com/watch?v=K7Yf0n3wNnY">http://www.youtube.com/watch?v=K7Yf0n3wNnY</a>, <a href="https://www.facebook.com/permalink.php?story_fbid=766305273468531&amp;id=469192429846485">https://www.facebook.com/permalink.php?story_fbid=766305273468531&amp;id=469192429846485</a>, <a href="http://www.youtube.com/watch?v=oqQVBfAOkwM">http://www.youtube.com/watch?v=oqQVBfAOkwM</a></p>
29/04/2015	Saraqeb	<p><a href="https://twitter.com/ahmadokla94/status/593405675415416832">https://twitter.com/ahmadokla94/status/593405675415416832</a>, <a href="https://www.facebook.com/photo.php?fbid=957904474243291">https://www.facebook.com/photo.php?fbid=957904474243291</a>, <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146</a>, <a href="https://twitter.com/alEtihad_Press/status/593410465906176000">https://twitter.com/alEtihad_Press/status/593410465906176000</a>, <a href="https://www.facebook.com/photo.php?fbid=352535254942895">https://www.facebook.com/photo.php?fbid=352535254942895</a>, <a href="https://twitter.com/zyadalfares/status/593421993732612096">https://twitter.com/zyadalfares/status/593421993732612096</a>, <a href="https://www.facebook.com/photo.php?fbid=371813673003469">https://www.facebook.com/photo.php?fbid=371813673003469</a>, <a href="http://www.youtube.com/watch?v=CUVrIUeztQQ">http://www.youtube.com/watch?v=CUVrIUeztQQ</a>, <a href="http://www.youtube.com/watch?v=sPkJXt81gK8">http://www.youtube.com/watch?v=sPkJXt81gK8</a></p>
01/05/2015	Qulaydin Village, Ghab plain	<p><a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146</a></p>
01/05/2015	Saraqeb	<p><a href="http://www.ibtimes.co.uk/syria-assad-regime-accused-chlorine-gas-attack-idib-1499463">http://www.ibtimes.co.uk/syria-assad-regime-accused-chlorine-gas-attack-idib-1499463</a>, <a href="https://twitter.com/snhr/status/594362194663464960">https://twitter.com/snhr/status/594362194663464960</a>, <a href="https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146">https://d3n8a8pro7vhmx.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146</a> <a href="http://www.aljazeera.com/news/2015/05/fresh-claims-chlorine-gas-attacks-syria-150502235313185.html">http://www.aljazeera.com/news/2015/05/fresh-claims-chlorine-gas-attacks-syria-150502235313185.html</a></p>

Date of Incident	Location	Source/link(s)
02/05/2015	Nayrab	<p>https://twitter.com/Ahmedbakour/status/594266428708134913, https://twitter.com/marbaleet/status/594266734581932032, https://d3n8a8pro7vhm.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146, https://www.hrw.org/news/2015/06/03/syria new chemical attacks idlib</p> <p>https://twitter.com/811Syria/status/594268952504696833, https://twitter.com/m_aboalyman/status/594278996243800064, https://twitter.com/a243681bd8b24a6/status/594286189819129856, https://www.facebook.com/AlmshfyAlmydanyFyMdyntSrmyn/posts/766389830149251, https://www.facebook.com/photo.php?fbid=588685461271428&amp;set=a.117169015089744.18522.100003899395594&amp;type=1&amp;permPage=1, https://www.facebook.com/1641082869457113/photos/a.1644272782471455.1073741829.1641082869457113/1656146387950761/?type=1&amp;permPage=1, https://twitter.com/syria24/status/594392541077839872/photo/1, https://twitter.com/khaha81/status/594392983165865984, https://www.facebook.com/AlmshfyAlmydanyFyMdyntSrmyn/photos/a.394312727356965.1073741828.394196807368557/766617340126500/?type=1, https://twitter.com/mnaw7/status/594551673755832320/photo/1, http://www.youtube.com/watch?v=IKITTE7_TR8, http://www.youtube.com/watch?v=kjwkiWxQg4o, http://www.youtube.com/watch?v=Ahl-eHebnyk, http://www.youtube.com/watch?v=nGTP9_sPYHQ, http://www.youtube.com/watch?v=17SbpDo4jvc</p>
02/05/2015	Saraqeb	<p>https://twitter.com/811Syria/status/594284771120914433, https://twitter.com/ughxughx11/status/594293131505487872, http://www.hrw.org/news/2015/06/03/syria-new-chemical-attacks-idlib, https://d3n8a8pro7vhm.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146, https://d3n8a8pro7vhm.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146</p> <p>https://twitter.com/FreeSrmeen/status/594294386780930048, https://twitter.com/m_aboalyman/status/594295177478610948, https://twitter.com/zyadalfares/status/594297270549504000, https://twitter.com/ughxughx11/status/59430509747267456, https://twitter.com/asimzedan/status/594309601446731776/photo/1, https://twitter.com/asimzedan/status/594310099650351105/photo/1, https://twitter.com/SyrianSmurf/status/594314700361457665, https://twitter.com/wassem19772000/status/594332276055498753, https://twitter.com/smatel/status/594339464354373632, https://www.facebook.com/photo.php?fbid=653833924750746, https://twitter.com/anasanas84/status/594395930641694720, https://youtu.be/P18INppOSM4, https://youtu.be/Qbo_8-qypP0, https://youtu.be/x9TFqWS9f8, https://youtu.be/HOW7bxV1Xhw, https://youtu.be/FufDVwORaO4, https://youtu.be/f3Euba8FAWg, https://youtu.be/SSosJv8Gp0U, https://youtu.be/pqHMaR3_JeI, https://youtu.be/wrrXyhlLctk, https://youtu.be/KGTLSvy6UPc, https://youtu.be/MRk0TRM1Lg8, https://youtu.be/1FKwhoQxysY, https://en.wikipedia.org/wiki/Use_of_chemical_weapons_in_the_Syrian_civil_war</p>
03/05/2015	Kan safra	<p>http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</p>
03/05/2015	Ibleen	<p>http://english.alarabiya.net/en/News/middle east/2015/05/14/White House says concerned about Syria chemical weapons allegations.html, https://d3n8a8pro7vhm.cloudfront.net/etilaf/pages/235/attachments/original/1431012146/2015.5.5_SNC_Syria_CW_letter_-_UK.pdf?1431012146</p>
03/05/2015	Jabal az Zawiyan	<p>https://instagram.com/p/2ODf7TjF9e/, http://www.youtube.com/watch?v=MJsxNxpPyQo, http://www.youtube.com/watch?v=WPeSsAPSAM, http://www.youtube.com/watch?v=2kazwCWuEpU, http://www.youtube.com/watch?v=oBV8JOZRXU, http://www.youtube.com/watch?v=Mxjdh450_yY, http://www.youtube.com/watch?v=eCxBhJhtiAGM, https://twitter.com/wassem19772000/status/594824525214265344, https://twitter.com/ammam_alabdo/status/594824861169627138, https://twitter.com/ammam_alabdo/status/594830782893535232, https://twitter.com/hassan_adlib/status/594830984425541635, https://twitter.com/Step_Agency/status/594831840780910592</p>

Date of Incident	Location	Source/link(s)
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03/05/2015	Juzif	<a href="http://english.aawsat.com/2015/05/article55343347/syrian%20activists%20report%20new%20chlorine%20attacks%20in%20idlib">http://english.aawsat.com/2015/05/article55343347/syrian activists report new chlorine attacks in idlib</a>
04/05/2015	Kansafrah	<p> <a href="http://www.la-croix.com/Actualite/Monde/Affaibli-le-regime-syrien-multiplie-les-attaques-au-chlore-2015-05-05-1309422">http://www.la-croix.com/Actualite/Monde/Affaibli-le-regime-syrien-multiplie-les-attaques-au-chlore-2015-05-05-1309422</a>  <a href="https://www.google.nl/maps/place/Kansafra,+Syria/@35.6605554,36.4752994,15z/data=!3m1!4b1!4m2!3m1!1s0x15245a63e8e13a45:0xe6b22342480b5694">https://www.google.nl/maps/place/Kansafra,+Syria/@35.6605554,36.4752994,15z/data=!3m1!4b1!4m2!3m1!1s0x15245a63e8e13a45:0xe6b22342480b5694</a> </p>
06/05/2015	Al Bashiria	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
06/05/2015	Jisr al Shughur	<p> <a href="https://www.facebook.com/Jisralshughour/posts/824287530960090">https://www.facebook.com/Jisralshughour/posts/824287530960090</a>  <a href="https://www.facebook.com/permalink.php?story_fbid=770961536336238&amp;id=469192429846485">https://www.facebook.com/permalink.php?story_fbid=770961536336238&amp;id=469192429846485</a>  <a href="http://syrianpc.com/2015/05/07/%D8%A8%D8%A7%D9%84%D8%B5%D9%88%D8%B1-%D8%B4%D9%87%D9%8A%D8%AF-%D9%88%D8%A3%D9%83%D8%AB%D8%B1-%D9%85%D9%86-50-%D8%A5%D8%B5%D8%A7%D8%A8%D8%A9-%D8%A8%D8%A7%D9%84%D8%BA%D8%A7%D8%B2%D8%A7%D8%AA-%D8%A7/">http://syrianpc.com/2015/05/07/%D8%A8%D8%A7%D9%84%D8%B5%D9%88%D8%B1-%D8%B4%D9%87%D9%8A%D8%AF-%D9%88%D8%A3%D9%83%D8%AB%D8%B1-%D9%85%D9%86-50-%D8%A5%D8%B5%D8%A7%D8%A8%D8%A9-%D8%A8%D8%A7%D9%84%D8%BA%D8%A7%D8%B2%D8%A7%D8%AA-%D8%A7/</a>  <a href="https://twitter.com/skoraltham/status/596087800010645505">https://twitter.com/skoraltham/status/596087800010645505</a>, <a href="https://twitter.com/abohamzaislam/status/596088252655915008">https://twitter.com/abohamzaislam/status/596088252655915008</a>,  <a href="https://twitter.com/jesrNEWS/status/596091195450728449">https://twitter.com/jesrNEWS/status/596091195450728449</a>, <a href="https://twitter.com/0000mmmm1/status/596220856725934080">https://twitter.com/0000mmmm1/status/596220856725934080</a>,  <a href="https://twitter.com/alEtihad_Press/status/596229951638077440">https://twitter.com/alEtihad_Press/status/596229951638077440</a> </p>
06/05/2015	Kafr Batikh	<p> <a href="https://www.facebook.com/permalink.php?story_fbid=770832469682478&amp;id=469192429846485">https://www.facebook.com/permalink.php?story_fbid=770832469682478&amp;id=469192429846485</a>, <a href="https://youtu.be/p61MxkAkR8w">https://youtu.be/p61MxkAkR8w</a>,  <a href="https://twitter.com/khaledkhalaf87/status/596076845549891584">https://twitter.com/khaledkhalaf87/status/596076845549891584</a>, <a href="https://twitter.com/abokazemm1/status/596081491161063425">https://twitter.com/abokazemm1/status/596081491161063425</a>,  <a href="https://twitter.com/zyadalfares/status/596082873469374467">https://twitter.com/zyadalfares/status/596082873469374467</a>, <a href="https://twitter.com/811Syria/status/596083197433098240">https://twitter.com/811Syria/status/596083197433098240</a>,  <a href="https://www.facebook.com/1SyriaNewsAgency/posts/399141236940813">https://www.facebook.com/1SyriaNewsAgency/posts/399141236940813</a>,  <a href="http://smartnews-agency.com/news/51179?utm_source=dlvr.it&amp;utm_medium=twitter&amp;utm_campaign=smartnewsagency">http://smartnews-agency.com/news/51179?utm_source=dlvr.it&amp;utm_medium=twitter&amp;utm_campaign=smartnewsagency</a>, </p>

Date of Incident	Location	Source/link(s)
07/05/2015	Janouidieh	<a href="http://www.haaretz.com/news/middle-east/middle-east-updates/1.655537">http://www.haaretz.com/news/middle-east/middle-east-updates/1.655537</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="http://www.theguardian.com/world/2015/may/08/new-suspected-chemical-attacks-reported-in-syria-dozens-injured">http://www.theguardian.com/world/2015/may/08/new-suspected-chemical-attacks-reported-in-syria-dozens-injured</a> <a href="http://english.alarabiya.net/en/News/middle-east/2015/05/08/Syrian-activists-report-new-chlorine-attacks-in-Idlib.html">http://english.alarabiya.net/en/News/middle-east/2015/05/08/Syrian-activists-report-new-chlorine-attacks-in-Idlib.html</a> <a href="http://bigstory.ap.org/article/c2aee8cea6d1424dbe03dd6efc93960e/syrian-troops-hezbollah-allies-take-more-areas-near-lebanon">http://bigstory.ap.org/article/c2aee8cea6d1424dbe03dd6efc93960e/syrian-troops-hezbollah-allies-take-more-areas-near-lebanon</a>
07/05/2015	Kafr Batikh	<a href="http://www.haaretz.com/news/middle-east/middle-east-updates/1.655537">http://www.haaretz.com/news/middle-east/middle-east-updates/1.655537</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="http://www.theguardian.com/world/2015/may/08/new-suspected-chemical-attacks-reported-in-syria-dozens-injured">http://www.theguardian.com/world/2015/may/08/new-suspected-chemical-attacks-reported-in-syria-dozens-injured</a> <a href="http://english.alarabiya.net/en/News/middle-east/2015/05/08/Syrian-activists-report-new-chlorine-attacks-in-Idlib.html">http://english.alarabiya.net/en/News/middle-east/2015/05/08/Syrian-activists-report-new-chlorine-attacks-in-Idlib.html</a> <a href="http://bigstory.ap.org/article/c2aee8cea6d1424dbe03dd6efc93960e/syrian-troops-hezbollah-allies-take-more-areas-near-lebanon">http://bigstory.ap.org/article/c2aee8cea6d1424dbe03dd6efc93960e/syrian-troops-hezbollah-allies-take-more-areas-near-lebanon</a>
07/05/2015	Hizareen	<a href="https://twitter.com/search?q=hizareen&amp;src=typd">https://twitter.com/search?q=hizareen&amp;src=typd</a>
07/05/2015	Kansafrah	<a href="http://www.ibtimes.co.uk/syria-assad-chlorine-attack-reported-idlib-province-rebels-gain-ground-1500358">http://www.ibtimes.co.uk/syria-assad-chlorine-attack-reported-idlib-province-rebels-gain-ground-1500358</a> <a href="http://www.independent.co.uk/news/world/middle-east/syria-chlorine-attacks-dozens-reported-suffocated-as-regime-drops-chemical-barrel-bombs-on-idlib-10234798.html">http://www.independent.co.uk/news/world/middle-east/syria-chlorine-attacks-dozens-reported-suffocated-as-regime-drops-chemical-barrel-bombs-on-idlib-10234798.html</a> , <a href="https://twitter.com/salqin/status/596292316664635393">https://twitter.com/salqin/status/596292316664635393</a> , <a href="https://youtube.com/watch?v=E12spT_iM58">https://youtube.com/watch?v=E12spT_iM58</a> , <a href="https://www.facebook.com/photo.php?fbid=1104202679596828">https://www.facebook.com/photo.php?fbid=1104202679596828</a> <a href="https://twitter.com/hassan_adlib/status/596259500463493121/photo/1">https://twitter.com/hassan_adlib/status/596259500463493121/photo/1</a> , <a href="https://twitter.com/kefranbil/status/596231204233314304">https://twitter.com/kefranbil/status/596231204233314304</a> , <a href="https://twitter.com/hassan_adlib/status/596231587525570561">https://twitter.com/hassan_adlib/status/596231587525570561</a> , <a href="https://twitter.com/abooslah/status/596239195817017344">https://twitter.com/abooslah/status/596239195817017344</a> , <a href="https://twitter.com/AbdulRazzAlkhal/status/596242059876524032">https://twitter.com/AbdulRazzAlkhal/status/596242059876524032</a> , <a href="https://twitter.com/SharefSarmada/status/596300146423570432/photo/1">https://twitter.com/SharefSarmada/status/596300146423570432/photo/1</a>
10/05/2015	Al Bashariyah	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
14/05/2015	Jisr al Shughur	<a href="https://www.youtube.com/watch?v=VE0G1Kesc7E">https://www.youtube.com/watch?v=VE0G1Kesc7E</a> <a href="https://www.google.nl/maps/place/Jisr+Ash-Shugur,+Syri%C3%AB/@35.8150919,36.3123962,15z/data=!4m2!3m1!1s0x1524496330940beb:0xba47f0808c645a96">https://www.google.nl/maps/place/Jisr+Ash-Shugur,+Syri%C3%AB/@35.8150919,36.3123962,15z/data=!4m2!3m1!1s0x1524496330940beb:0xba47f0808c645a96</a>
15/05/2015	Mashmashan	<a href="http://www.youtube.com/watch?v=u4nADXs6mNQ">http://www.youtube.com/watch?v=u4nADXs6mNQ</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="https://www.facebook.com/photo.php?fbid=437599189747412">https://www.facebook.com/photo.php?fbid=437599189747412</a> <a href="https://twitter.com/jesrNEWS/status/599123585039368192">https://twitter.com/jesrNEWS/status/599123585039368192</a> <a href="https://www.facebook.com/Jisralshughour2/posts/452114968297826">https://www.facebook.com/Jisralshughour2/posts/452114968297826</a> <a href="https://www.facebook.com/1SyriaNewsAgency/posts/402171506637786">https://www.facebook.com/1SyriaNewsAgency/posts/402171506637786</a> <a href="https://twitter.com/yamama_sh22/status/599158576637026304">https://twitter.com/yamama_sh22/status/599158576637026304</a> <a href="https://www.facebook.com/video.php?v=1143688635648573">https://www.facebook.com/video.php?v=1143688635648573</a>
16/05/2015	Sarmin	<a href="https://www.facebook.com/srmeen11/posts/1655765634639756">https://www.facebook.com/srmeen11/posts/1655765634639756</a> , <a href="https://youtu.be/vFj-gtbPBqo">https://youtu.be/vFj-gtbPBqo</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="https://www.facebook.com/srmeen11/posts/1655753824640937">https://www.facebook.com/srmeen11/posts/1655753824640937</a> , <a href="https://www.facebook.com/Radio.Akul/posts/862972507115119">https://www.facebook.com/Radio.Akul/posts/862972507115119</a> , <a href="https://twitter.com/abo47130008/status/599485630372978689">https://twitter.com/abo47130008/status/599485630372978689</a> , <a href="https://www.facebook.com/srmeen11/posts/1655896734626646">https://www.facebook.com/srmeen11/posts/1655896734626646</a>

Date of Incident	Location	Source/link(s)
17/05/2015	Al Kostan, Jisr al Shughur	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
17/05/2015	Mashmashan	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
17/05/2015	Jisr al Shughur	<a href="https://twitter.com/radwanalbasha/status/599732752569618433">https://twitter.com/radwanalbasha/status/599732752569618433</a> , <a href="https://twitter.com/akhbar/status/599735332872019970">https://twitter.com/akhbar/status/599735332872019970</a> , <a href="https://www.facebook.com/permalink.php?story_fbid=997445036932268&amp;id=867873686556071">https://www.facebook.com/permalink.php?story_fbid=997445036932268&amp;id=867873686556071</a> , <a href="https://www.facebook.com/permalink.php?story_fbid=774683829297342&amp;id=469192429846485">https://www.facebook.com/permalink.php?story_fbid=774683829297342&amp;id=469192429846485</a> , <a href="https://www.facebook.com/ENN16/posts/335869946623231">https://www.facebook.com/ENN16/posts/335869946623231</a> , <a href="https://twitter.com/jesrNEWS/status/600200294937403392">https://twitter.com/jesrNEWS/status/600200294937403392</a> ,
18/05/2015	Jisr al Shughur	<a href="http://syrianobserver.com/EN/News/29184/Chlorine_Attack_Jisr_Shughour_Kills_Children_Monitoring_Group">http://syrianobserver.com/EN/News/29184/Chlorine_Attack_Jisr_Shughour_Kills_Children_Monitoring_Group</a>
19/05/2015	Idlib City	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
19/05/2015	Jisr al Shughur, Mashmashan	<a href="https://www.facebook.com/hasemalabdullah89/posts/618392771629348">https://www.facebook.com/hasemalabdullah89/posts/618392771629348</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="https://twitter.com/mlak012301/status/600553347427344384/photo/1">https://twitter.com/mlak012301/status/600553347427344384/photo/1</a> , <a href="https://www.facebook.com/permalink.php?story_fbid=775607335871658&amp;id=469192429846485">https://www.facebook.com/permalink.php?story_fbid=775607335871658&amp;id=469192429846485</a> , <a href="http://www.youtube.com/watch?v=yiqLLmuAA6Y">http://www.youtube.com/watch?v=yiqLLmuAA6Y</a> , <a href="http://www.youtube.com/watch?v=UaLma_hDtI0">http://www.youtube.com/watch?v=UaLma_hDtI0</a> , <a href="http://www.youtube.com/watch?v=jYTzvAE8-QQ">http://www.youtube.com/watch?v=jYTzvAE8-QQ</a>
19/05/2015	Al bashiria	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
02/06/2015	Binnish	<a href="https://twitter.com/Louangie/status/605942256290258946">https://twitter.com/Louangie/status/605942256290258946</a>
07/06/2015	AI Kastan	<a href="https://malcolmxtrme.wordpress.com/2015/06/07/672015/">https://malcolmxtrme.wordpress.com/2015/06/07/672015/</a> (4th para), <a href="http://www.hrw.org/news/2015/06/03/syria-new-chemical-attacks-idlib">http://www.hrw.org/news/2015/06/03/syria-new-chemical-attacks-idlib</a> , <a href="https://www.facebook.com/photo.php?fbid=1163419717018496">https://www.facebook.com/photo.php?fbid=1163419717018496</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="http://sn4hr.org/blog/2015/06/07/7744/">http://sn4hr.org/blog/2015/06/07/7744/</a>
08/06/2015	Saraqeb	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> , <a href="https://twitter.com/Paradoxy13/status/608154356249161728">https://twitter.com/Paradoxy13/status/608154356249161728</a>
08/06/2015	AI Janoudiah	<a href="http://www.la-croix.com/Actualite/Monde/Syrie-pres-de-50-civils-tues-dans-des-raids-du-regime-sur-un-village-d-Idleb-2015-06-08-1320977">http://www.la-croix.com/Actualite/Monde/Syrie-pres-de-50-civils-tues-dans-des-raids-du-regime-sur-un-village-d-Idleb-2015-06-08-1320977</a> , <a href="https://twitter.com/Paradoxy13/status/607813476090806272">https://twitter.com/Paradoxy13/status/607813476090806272</a> <a href="http://www.lorientlejour.com/article/928701/une-famille-tuee-dans-un-raid-de-la-coalition-sur-alep.html">http://www.lorientlejour.com/article/928701/une-famille-tuee-dans-un-raid-de-la-coalition-sur-alep.html</a> <a href="https://www.youtube.com/watch?t=12&amp;v=7SNB3hjHyvI">https://www.youtube.com/watch?t=12&amp;v=7SNB3hjHyvI</a> <a href="https://www.facebook.com/ANAPRESS.EN/photos/a.632910876784282.1073741828.625139430894760/870264986382202/?type=1">https://www.facebook.com/ANAPRESS.EN/photos/a.632910876784282.1073741828.625139430894760/870264986382202/?type=1</a> <a href="https://www.google.nl/maps/place/Al+Janoudiyah,+Syria/@35.8820778,36.2819625,15z/data=!3m1!4m2!3m1!1s0x15244ab6b61fed37:0x34cf4ed740c21d36">https://www.google.nl/maps/place/Al+Janoudiyah,+Syria/@35.8820778,36.2819625,15z/data=!3m1!4m2!3m1!1s0x15244ab6b61fed37:0x34cf4ed740c21d36</a>
08/06/2015	Kansafrah	<a href="https://www.youtube.com/watch?t=1&amp;v=QG_r8yylMuE">https://www.youtube.com/watch?t=1&amp;v=QG_r8yylMuE</a> , <a href="https://twitter.com/Paradoxy13/status/607813476090806272">https://twitter.com/Paradoxy13/status/607813476090806272</a> <a href="http://din-sy.net/ar/Documentary/Subjects20081/">http://din-sy.net/ar/Documentary/Subjects20081/</a>
09/06/2015	Bashiriyah and Safahun	<a href="https://twitter.com/tarikabdalahak/status/608167250311409665/photo/1">https://twitter.com/tarikabdalahak/status/608167250311409665/photo/1</a> , <a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a> <a href="https://twitter.com/thesyrianmirror/status/608195724040392704/photo/1">https://twitter.com/thesyrianmirror/status/608195724040392704/photo/1</a> <a href="https://twitter.com/ramiswidfree/status/608078030112702464">https://twitter.com/ramiswidfree/status/608078030112702464</a> , <a href="https://twitter.com/SharefSarmada/status/608090572092506112">https://twitter.com/SharefSarmada/status/608090572092506112</a> , <a href="https://twitter.com/MasarPressNet/status/608173008851726336">https://twitter.com/MasarPressNet/status/608173008851726336</a> , <a href="https://twitter.com/AboD7ak/status/608193197097951232">https://twitter.com/AboD7ak/status/608193197097951232</a> <a href="https://www.facebook.com/permalink.php?story_fbid=1626133587629246&amp;id=1387572298152044">https://www.facebook.com/permalink.php?story_fbid=1626133587629246&amp;id=1387572298152044</a>

Date of Incident	Location	Source/link(s)
09/06/2015	Saraqeb	<a href="http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf">http://docs.house.gov/meetings/FA/FA00/20150617/103638/HHRG-114-FA00-Wstate-TennariM-20150617.pdf</a>
17/06/2015	Al-Tamanah	<a href="https://www.youtube.com/watch?v=oql6bxoJTCo">https://www.youtube.com/watch?v=oql6bxoJTCo</a>
28/08/2015	Jisr al Shughur	<a href="https://twitter.com/Bivi_17/status/638790571398688768">https://twitter.com/Bivi_17/status/638790571398688768</a>
29/08/2015	Al-Tamanah	<a href="https://www.youtube.com/watch?v=udlW6i0f-S0">https://www.youtube.com/watch?v=udlW6i0f-S0</a>

*Note:* Open-source information is an evolving process, therefore the list of links may no longer be valid since they were originally identified. This list is also not an exhaustive list of links to specific incidents, but rather an indication of the information that might be available.

## Appendix 6

### EVIDENCE FOUND AND COLLECTED BY THE INVESTIGATION TEAM

#### 6.1 Summary of Physical Evidence

Entry number	Item description	Evidence reference number	Where the evidence was found/collected	Date and time handed over	By whom was found/collected
5.	μSD 64 GB Transcend - Folders and files	2015-05-25-1021-03	Handed over by 1021	25/05/2015 17:45	Interview Team 1
	Drawing, impact point of barrel bomb	2015-05-25-1018-03	Drawn by 1018	25/05/2015 11:26	Interview Team 1
	Drawing, family house in relation to events on 16/03/15	2015-05-25-1018-04	Drawn by 1018	25/05/2015	Interview Team 1
	μSD 64 GB Transcend - Images Qmenas 16/03/15	2015-05-25-1011-04	Handed over by 1011	24/05/2015 13:50	Interview Team 1
	μSD 64 GB Transcend - Images, videos Sarmin	2015-05-29-1012-03	Copied from 1012's USB stick	29/05/2015 12:51	Interview Team 1
	μSD 64 GB Transcend - Attack on Qmenas filmed by mobile phone	2015-05-29-1016-03	Copied from 1016's mobile phone	29/05/2015 15:46	Interview Team 1
	Map Sarmin, A3, marking of house location	2015-05-03-1000-03	Marked by 1000	03/05/2015 16:54	Interview Team 1
	μSD S/N TP2K113080026 - Videos, photos, PDFs, Word files	2015-05-03-1000-04	Handed over by 1000	03/05/2015 17:35	Interview Team 1
	μSD S/N TM6KA4B124A11 - Images, files	2015-06-05-1024-03	Handed over by 1024	05/06/2015 13:10	Interview Team 1
	Drawing	2015-05-24-1017-01	Drawn by 1017	24/05/2015 16:27	Interview Team 2
	SD card with folder "Chlorine" 25 pdf files, Idlib Province	2015-05-24-1007-03	Handed over by 1007	24/05/2015 09:39	Interview Team 2
	USB stick with Word files, Idlib Province	2015-05-23-1007-01	Handed over by 1007	23/05/2015 18:22	Interview Team 2
	Drawing, description of barrel bomb	2015-05-25-1014-03	Drawn by 1014	25/05/2015 10:45	Interview Team 2
	Drawing, villages with helicopter flight path	2015-05-25-1023-01	Drawn by 1023	25/05/2015	Interview Team 2
	Drawing, layout home, spotter room	2015-05-25-1023-02	Drawn by 1023	25/05/2015	Interview Team 2

Entry number	Item description	Evidence reference number	Where the evidence was found/collected	Date and time handed over	By whom was found/collected
	Drawing, location of site of impact of 2nd bomb	2015-05-25-1023-03	Drawn by 1023	25/05/2015	Interview Team 2
	List of incidents 16/03/15 - 19/05/15, Idlib Province	2015-05-25-1023-04	Handed over by 1023	25/05/2015	Interview Team 2
	µSD card, videos, images	2015-05-25-1023-05	Handed over by 1023	25/05/2015	Interview Team 2
	Drawing, area of eastern Sarmin where bomb fell 16/03/15	2015-05-28-1020-03	Drawn by 1020	28/05/2015 16:58	Interview Team 2
	Drawing	2015-05-29-1026-03	Drawn by 1026	29/05/2015	Interview Team 2
	USB stick OPCW seal 523133 - Folders, images, videos	2015-05-30-1032-03	Handed over by 1032	30/05/2015 16:48	Interview Team 2
	µSD card, backup of entry # 12 - Folders, images, videos	2015-05-30-1032-04	Copied from 1032's laptop	30/05/2015 16:47	Interview Team 2
	01SLS	2015-05-22-1028-01	Handed over by CVDCS	22/05/2015 14:35	FFM-Alpha
	02SLS	2015-05-22-1028-02	Handed over by CVDCS	22/05/2015 14:40	FFM-Alpha
	03AQS	2015-05-22-1028-03	Handed over by CVDCS	22/05/2015 14:47	FFM-Alpha
	04SDS	2015-05-22-1028-04	Handed over by CVDCS	22/05/2015 14:54	FFM-Alpha
	05SDS	2015-05-22-1028-05	Handed over by CVDCS	22/05/2015 15:00	FFM-Alpha
	06SDS	2015-05-22-1028-06	Handed over by CVDCS	22/05/2015 15:02	FFM-Alpha
	07SDS	2015-05-22-1028-07	Handed over by CVDCS	22/05/2015 15:05	FFM-Alpha
	08SDS	2015-05-22-1028-08	Handed over by CVDCS	22/05/2015 15:07	FFM-Alpha
	09SDS	2015-05-22-1028-09	Handed over by CVDCS	22/05/2015 15:08	FFM-Alpha
	10	2015-05-22-1028-10	Handed over by CVDCS	22/05/2015 15:11	FFM-Alpha
	11SDS	2015-05-22-1028-11	Handed over by CVDCS	22/05/2015 15:11	FFM-Alpha

Entry number	Item description	Evidence reference number	Where the evidence was found/collected	Date and time handed over	By whom was found/collected
	12SDS	2015-05-22-1028-12	Handed over by CVDCS	22/05/2015 15:16	FFM-Alpha
	13SDS	2015-07-23-1008-01	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	14SDS	2015-07-23-1008-02	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	15SDS	2015-07-23-1008-03	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	16SDS	2015-07-23-1008-04	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	17SDS	2015-07-23-1008-05	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	18SDS	2015-07-23-1008-06	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	19SDS	2015-07-23-1008-07	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	20SLS	2015-07-23-1008-08	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	21SDS	2015-07-23-1008-09	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	22SDS	2015-07-23-1008-10	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	23SDS	2015-07-23-1008-11	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha
	24SLS	2015-07-23-1008-12	Handed over by CVDCS	23/07/2015 14:25	FFM-Alpha

## 6.2 Electronic files collected by the investigation team

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
1006	No electronic evidence was handed over to the team			
1011	16 March 2015\Qmenas	16 March 2015\Qmenas	IMG_7516	IMG_7516
			IMG_7517	IMG_7517
			IMG_7518	IMG_7518
			IMG_7519	IMG_7519
			IMG_7520	IMG_7520
			IMG_7521	IMG_7521
			IMG_7522	IMG_7522
			IMG_7523	IMG_7523
			IMG_7524	IMG_7524
			IMG_7525	IMG_7525
	IMG_7526	IMG_7526		
	16 March 2015\Sarmin	16 March 2015\Sarmin	IMG_7527	IMG_7527
			IMG_7528	IMG_7528
			IMG_7529	IMG_7529
			IMG_7530	IMG_7530
			IMG_7531	IMG_7531
			IMG_7532	IMG_7532
			IMG_7533	IMG_7533
	16 May 2015	16 May 2015	IMG_9156	IMG_9156
			IMG_9157	IMG_9157
IMG_9158			IMG_9158	
IMG_9159			IMG_9159	
			IMG_9161	IMG_9161

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
	20 May 2015	20 May 2015	MVI_9228	MVI_9228
			MVI_9229	MVI_9229
			IMG_9230	IMG_9230
			IMG_9231	IMG_9231
1019	No electronic evidence was handed over to the team			
1018	No electronic evidence was handed over to the team			
1021	سر م بين 16-5-2015	Sarmin 16-5-2015	SAM_1478	SAM_1478
			SAM_1479	SAM_1479
			SAM_1483	SAM_1483
	سر م بين 23-3-2015	Sarmin 23-3-2015	HDV_0179	HDV_0179
			SAM_0221	SAM_0221
			SAM_0223	SAM_0223
			SAM_0224	SAM_0224
			SAM_0225	SAM_0225
			SAM_0226	SAM_0226
			SAM_0227	SAM_0227
			SAM_0228	SAM_0228
			SAM_0229	SAM_0229
			SAM_0230	SAM_0230
	ادلب كلور 2015-4-16	Idlib chlorine 16-4-2015	SAM_0792	SAM_0792
			SAM_0793	SAM_0793
			SAM_0794	SAM_0794
			SAM_0797	SAM_0797
			SAM_0798	SAM_0798
			SAM_0799	SAM_0799
			SAM_0802	SAM_0802

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			SAM_0803	SAM_0803
			SAM_0804	SAM_0804
			SAM_0805	SAM_0805
			SAM_0806	SAM_0806
			SAM_0807	SAM_0807
			SAM_0808	SAM_0808
			ادلب كلور 2015-4-16	Idlib chlorine 16-4-2015
	النيرب 2015-5-2	Nayrab 2-5-2015	SAM_1044	SAM_1044
			SAM_1045	SAM_1045
			SAM_1046	SAM_1046
			SAM_1047	SAM_1047
			SAM_1048	SAM_1048
			SAM_1049	SAM_1049
			SAM_1050	SAM_1050
			SAM_1051	SAM_1051
			SAM_1052	SAM_1052
			SAM_1053	SAM_1053
			SAM_1054	SAM_1054
			SAM_1055	SAM_1055
			SAM_1056	SAM_1056
			SAM_1057	SAM_1057
			SAM_1058	SAM_1058
			SAM_1059	SAM_1059
			SAM_1060	SAM_1060
			SAM_1061	SAM_1061
			SAM_1062	SAM_1062

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			SAM_1063	SAM_1063
			SAM_1064	SAM_1064
			SAM_1066	SAM_1066
			SAM_1067	SAM_1067
			SAM_1068	SAM_1068
			SAM_1069	SAM_1069
			SAM_1070	SAM_1070
			SAM_1071	SAM_1071
			SAM_1072	SAM_1072
			SAM_1073	SAM_1073
			SAM_1074	SAM_1074
			SAM_1075	SAM_1075
			تسجيل	Recording
	voice 007	voice 007		
	جمع عينات	Collecting samples	IMG_7516	IMG_7516
			IMG_7517	IMG_7517
			IMG_7518	IMG_7518
			IMG_7519	IMG_7519
			IMG_7520	IMG_7520
			IMG_7521	IMG_7521
			IMG_7522	IMG_7522
			IMG_7523	IMG_7523
			IMG_7524	IMG_7524
			IMG_7525	IMG_7525
			IMG_7526	IMG_7526
			IMG_7527	IMG_7527

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			IMG_7528	IMG_7528
			IMG_7529	IMG_7529
			IMG_7530	IMG_7530
			IMG_7531	IMG_7531
			IMG_7532	IMG_7532
			IMG_7533	IMG_7533
			IMG_7534	IMG_7534
			IMG_7535	IMG_7535
	عينات	Samples	1	1
			2	2
			3	3
			4	4
			5	5
			6	6
			7	7
			8	8
			9	9
			10	10
			11	11
			SAM_1484	SAM_1484
			SAM_1486	SAM_1486
			SAM_1487	SAM_1487
			SAM_1488	SAM_1488
			SAM_1489	SAM_1489
			SAM_1490	SAM_1490
			SAM_1491	SAM_1491

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			SAM_1492	SAM_1492
			SAM_1493	SAM_1493
			SAM_1494	SAM_1494
			SAM_1495	SAM_1495
			SAM_1496	SAM_1496
			SAM_1497	SAM_1497
			SAM_1498	SAM_1498
	قياس عينات	Samples measure	IMG-20150430-WA0021	IMG-20150430-WA0021
			IMG-20150510-WA0009	IMG-20150510-WA0009
			IMG-20150510-WA0010	IMG-20150510-WA0010
			IMG-20150510-WA0011	IMG-20150510-WA0011
			IMG-20150510-WA0012	IMG-20150510-WA0012
			IMG-20150510-WA0013	IMG-20150510-WA0013
			IMG-20150510-WA0014	IMG-20150510-WA0014
			IMG-20150510-WA0016	IMG-20150510-WA0016
			IMG-20150510-WA0017	IMG-20150510-WA0017
			مجزرة الكلور في سرمين 3-16	Chlorine massacre Sarmin 16-3
	٢٠١٥٠٣١٦_٢١٣١٤٧	20150316_213147		
	IMG_7440	IMG_7440		
	IMG_7459	IMG_7459		

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			IMG_7460	IMG_7460
			IMG_7466	IMG_7466
			IMG_7472	IMG_7472
			IMG_7485	IMG_7485
			MVI_7457	MVI_7457
			MVI_7462	MVI_7462
			SAM_0098	SAM_0098
			SAM-0113	SAM-0113
			اصابة احد عناصر الدفاع المدني	Wounding a member of the civil defense
			لقاء مهم	Important meeting
			٢٠١٥٠٣١٦_٢١٢٤٣٤	20150316_212434
			٢٠١٥٠٣١٦_٢١٣١٤٧	20150316_213147
			٢٠١٥٠٣١٧_٠٢٠٦٤٥	20150217_020645
			SAM_0117	SAM_0117
SAM_0140	SAM_0140			
1013	No electronic evidence was handed over to the team			
1015	No electronic evidence was handed over to the team			
1012	توثيق الكلور ادلب سرمين 2015-3-16	Chlorine Idlib Sarmin documentation	صور لاحدا اصابات سرمين (1)	Photos of one of the injuries Sarmin (1)
			صور لاحدا اصابات سرمين (1)	Photos of one of the injuries Sarmin (1)
			صور لاحدا اصابات سرمين (59048449)	Photos of one of the injuries Sarmin (59048449)
			صور لاحدا اصابات سرمين (59048450)	Photos of one of the injuries Sarmin (59048450)

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
2105-5-2	توثيق الكلور إدلب بلدة النيرب 2105-5-2	Chlorine documenting the town of Idlib Neirab 05/02/2105	فديو اسعاف احد الاطفال للمشفى	Video ambulance transporting one child to the hospital
			أحد اصابات الاطفال بمادة الكلور في بلدة النيرب	A children's injuries chlorine in the town of Neirab
			احد اصابات الغازات	One injured gases
			احد اصابات غ	One injured gas
			احد شباب الدفاع المدني وبيده عينات عن مادة الكلور الذي استهدف بلدة النيرب	One young civil defense has in hand samples for chlorine, which targeted the town of Neirab
			احدا الاصابات من غاز الكلور بلدة النيرب	One casualty of chlorine gas from the Neirab town
			الشهيد الطفل مصطفى حاج علي الذي استشهد متأثرا بغاز الكلور الذي القي على البلدة النيرب 2-5-2015	Child Martyr Mustafa Haj Ali, who died from chlorine gas, who was on the town Neirab 05/02/2015
			تواجد عناصر دفاع المدني مكان التنفيذ بلدة النيرب	The civil defense elements in the place of execution town Neirab
			صور الشهيد الطفل مصطفى الذي استشهد متأثرا بغازات الكلور (1) النيرب 2-5-2015	Photos of the child Mustafa martyr who died from chlorine gases Neirab 02.05.2015 (1)
			صور الشهيد الطفل مصطفى الذي استشهد متأثرا بغازات الكلور (1) النيرب 2-5-2015	Photos of the child Mustafa martyr who died from chlorine gases Neirab 02.05.2015 (1)
صور الشهيد الطفل مصطفى الذي استشهد متأثرا بغازات الكلور النيرب 2-5-2015 (42861057)	Photos of the child Mustafa martyr who died from chlorine gases Neirab 02.05.2015 (42861057)			

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			صور الشهيد الطفل مصطفى الذي استشهد متأثراً بغازات الكلور النيرب 2-5-2015 (42861058)	Photos of the child Mustafa martyr who died from chlorine gases Neirab 02.05.2015 (42861058)
			صور الشهيد الطفل مصطفى الذي استشهد متأثراً بغازات الكلور النيرب 2-5-2015 (42861059)	Photos of the child Mustafa martyr who died from chlorine gases Neirab 02.05.2015 (42861059)
			صورة للعينات الذي استهدفا بلدة النيرب	Image samples that targeted the town of Neirab
			صورة للعينات الذي استهدفا بلدة النيرب 2	Image samples that targeted the town of Neirab 2
	توثيق الكلور إدلب مدينة سراقب 2-5-2015	Chlorine documenting the city of Idlib Sracb 05/02/2105	صور لاصابات في مدينة سراقب 2015-5_2(1)	Photos for injuries in Sracb 2_5-2015 (1)
			صور لاصابات في مدينة سراقب 2015-5_2(1)	Photos for injuries in Sracb 2_5-2015 (1)
			صور لاصابات في مدينة سراقب 2015-5_2(42861057)	Photos for injuries in Sracb 2_5-2015 (42861057)
			صور لاصابات في مدينة سراقب 2015-5_2(42861058)	Photos for injuries in Sracb 2_5-2015 (42861058)
			صور لاصابات في مدينة سراقب 2015-5_2(42861059)	Photos for injuries in Sracb 2_5-2015 (42861059)
	1016			MVI_8145
1024	20150605102503	20150605102503	20150428_204550	20150428_204550
			20150428_211156	20150428_211156
			IMG-20150605-WA0000	IMG-20150605-WA0000

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			IMG-20150605-WA0001	IMG-20150605-WA0001
			IMG-20150605-WA0002	IMG-20150605-WA0002
			IMG-20150605-WA0003	IMG-20150605-WA0003
			IMG-20150605-WA0004	IMG-20150605-WA0004
			IMG-20150605-WA0005	IMG-20150605-WA0005
			IMG-20150605-WA0006	IMG-20150605-WA0006
			IMG-20150605-WA0007	IMG-20150605-WA0007
			IMG-20150605-WA0008	IMG-20150605-WA0008
			IMG-20150605-WA0009	IMG-20150605-WA0009
1037	No electronic evidence was handed over to the team			
1005	No electronic evidence was handed over to the team			
1007	USB handover 20150523100701\لور\Report\Photoes\ Where the family killed	USB handover 20150523100701\Chlorine\Report\Photoes\ Where the family killed	Place of chemical (1)	Place of chemical (1)
			Place of chemical (340904029)	Place of chemical (340904029)
			Place of chemical (340904031)	Place of chemical (340904031)
	USB handover 20150523100701\لور\Report\Photoes	USB handover 20150523100701\Chlorine\Report\Photoes	IMG_8732	IMG_8732
			IMG_8734	IMG_8734
			IMG_8739	IMG_8739
			IMG-20150317-WA0005	IMG-20150317-WA0005

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			IMG-20150317-WA0006	IMG-20150317-WA0006
			Oldman (1)	Oldman (1)
			Oldman (1)	Oldman (1)
	USB handover 20150523100701\لور\Report	USB handover 20150523100701\Chlorine\Report	تقرير	Report
			IMG_7304	IMG_7304
			IMG_7309	IMG_7309
			IMG_7310	IMG_7310
			IMG_7436	IMG_7436
			IMG_7444	IMG_7444
			IMG_7470	IMG_7470
			IMG_7484	IMG_7484
			IMG_7485	IMG_7485
			IMG_7452	IMG_7452
	USB handover 20150523100701\لور\صوره و New folder لور ف يديو وهات	USB handover 20150523100701\Chlorine\Photos and video Chlorine\New Folder	SAM_0100	SAM_0100
			SAM_0101	SAM_0101
			SAM_0102	SAM_0102
			SAM_0106	SAM_0106
			SAM_0110	SAM_0110
			SAM_0111	SAM_0111
			SAM_0112	SAM_0112
		SAM_0119	SAM_0119	
		SAM_0120	SAM_0120	
		SAM_0122	SAM_0122	
		SAM_0128	SAM_0128	

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			SAM_0137	SAM_0137
			SAM_0140	SAM_0140
			SAM_0143	SAM_0143
			SAM_0155	SAM_0155
	USB handover 20150523100701\صور\ک لور\ک لور ف ید و هات	USB handover 20150523100701\Chlorine\Photos and video Chlorine	IMG_7304	IMG_7304
			IMG_7309	IMG_7309
			IMG_7310	IMG_7310
			IMG_7436	IMG_7436
			IMG_7444	IMG_7444
			IMG_7470	IMG_7470
			IMG_7484	IMG_7484
			IMG_7485	IMG_7485
			MVI_7434	MVI_7434
			MVI_7449	MVI_7449
			MVI_7452	MVI_7452
			MVI_7457	MVI_7457
			MVI_7462	MVI_7462
			MVI_74491	MVI_74491
			MVI_74521	MVI_74521
			SAM_0099	SAM_0099
			SAM_0100	SAM_0100
			SAM_0101	SAM_0101
			SAM_0102	SAM_0102
			SAM_0106	SAM_0106
			SAM_0110	SAM_0110
			SAM_0111	SAM_0111

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			SAM_0112	SAM_0112
			SAM_0119	SAM_0119
			SAM_0120	SAM_0120
			SAM_0122	SAM_0122
			SAM_0128	SAM_0128
			SAM_0137	SAM_0137
			SAM_0140	SAM_0140
			SAM_0142	SAM_0142
			SAM_0143	SAM_0143
			SAM_0155	SAM_0155
USB handover 20150523100701\لورا\حماء ك لورا\ك	USB handover 20150523100701\Chlorine\Chlorine Hama	M2U00088	M2U00088	
		M2U00090	M2U00090	
		M2U00091	M2U00091	
		M2U00092	M2U00092	
		M2U00093	M2U00093	
USB handover 20150523100701\لورا\ك لورا\ك لورا ف يدي وهات و صور\1	USB handover 20150523100701\Chlorine 1\Chlorine videos and photos	Idlib map new draft	Idlib map new draft	
		IMG_7304	IMG_7304	
		IMG_7309	IMG_7309	
		IMG_7310	IMG_7310	
		IMG_7436	IMG_7436	
		IMG_7444	IMG_7444	
		IMG_7470	IMG_7470	
		IMG_7484	IMG_7484	
		IMG_7485	IMG_7485	
		IMG-20150318-WA0001	IMG-20150318-WA0001	

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			IMG-20150318-WA0011	IMG-20150318-WA0011
			IMG-20150318-WA0012	IMG-20150318-WA0012
			IMG-20150318-WA0013	IMG-20150318-WA0013
			IMG-20150318-WA0014	IMG-20150318-WA0014
			IMG-20150318-WA0015	IMG-20150318-WA0015
			IMG-20150417-WA0008	IMG-20150417-WA0008
			IMG-20150417-WA0009	IMG-20150417-WA0009
			MVI_7434	MVI_7434
			MVI_7449	MVI_7449
			MVI_7452	MVI_7452
			MVI_7457	MVI_7457
			MVI_7462	MVI_7462
			MVI_74491	MVI_74491
			MVI_74521	MVI_74521
			SAM_0099	SAM_0099
			SAM_0100	SAM_0100
			SAM_0101	SAM_0101
			SAM_0102	SAM_0102
			SAM_0106	SAM_0106
			SAM_0110	SAM_0110
			SAM_0111	SAM_0111
			SAM_0112	SAM_0112

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			SAM_0119	SAM_0119
			SAM_0120	SAM_0120
			SAM_0122	SAM_0122
			SAM_0128	SAM_0128
			SAM_0137	SAM_0137
			SAM_0140	SAM_0140
			SAM_0142	SAM_0142
			SAM_0143	SAM_0143
			SAM_0155	SAM_0155
			USB handover 20150523100701\لورا 1	USB handover 20150523100701\Chlorine 1
استهداف بنش بالكيماوي	Binnish Chemical attack			
استهداف قميناس بالغازات	Qmenas gas attack			
الكيماوي سرمين 2	Chemical Sarmin 2			
الكيماوي سرمين تقرير	Chemical Sarmin Report			
USB handover 20150523100701	USB handover 20150523100701	1 استهداف الكلور اجمالي	1 chlorine attack total	
		IMG_5130	IMG_5130	
		IMG_5131	IMG_5131	
		IMG_5132	IMG_5132	
		IMG_5133	IMG_5133	
uSD Pdf handover 20150524100703	uSD Pdf handover 20150524100703	استهداف بلدة مشمشان بغاز الكلور 19-5-2015 - - نسخة	Chlorine attack on Michmach town 19-5-2015 - - Copy	
		استهداف بلدة البشيرية بغاز الكلور 19-5-2015 -	Chlorine attack on El Bechir town 19-5-2015	
		استهداف مدينة الدلب بغاز الكلور 19-5-2015 -	Chlorine attack on Idlib City 19-5-2015	

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			استهداف بلدة مشمشان بغاز الكلور 17-5-2015 - نسخة	Chlorine attack on Michmach town 17-5-2015- Copy___
			استهداف بلدة الجانودية بالكلور 2015- 5-7	Chlorine attack on EL Jadhoudya town 7-5-2015_
			استهداف بلدة الكستن بغاز الكلور 2015-5-17	Chlorine attack on EL Kesten town 17-5-2015_
			1 استهداف الكلور اجمالي	1 chlorine attack total
			2 استهداف بلدة النيرب بالكلور -5	Chlorine attack on EL Nirab town - 2 5
			2النيرب كلور 2015-4-27	Chlorine attack on EL Nirab town -27-4-2015
			استهداف بلدة البشيرية بالكلور -6 2015-5	Chlorine attack on El Bechir town 6-5-2015
			استهداف بلدة البشيرية بالكلور 2015-5-10	Chlorine attack on El Bechir town 10-5-2015
			استهداف بلدة مشمشان بغاز الكلور 2015-5-15	Chlorine attack on Michmach town 15-5-2015
			استهداف بنش بالكيماوي 24-3-2015	Chlorine attack on Binnish 24-3-2015
			استهداف سراقب بالكلور 2- 5-2015	Chlorine attack on Saraqeb 2-5-2015
			استهداف سراقب بالكلور 26-4	Chlorine attack on Saraqeb 26-4
			استهداف سرمين بالكيماوي يوم 2015-3-26	Chlorine attack on Sarmin 26-3-2015
			استهداف قميناس بالغازات 24-3-2015	Chlorine attack on Qaminas 24-3-2015
			استهداف كنصفرة بالكلور 03-05-2015	Chlorine attack on Kansaqra 03-05-2015

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			استهداف كنصفرة بالكلور 2015-5-7	Chlorine attack on Kansaqra 7-5-2015
			استهداف مدينة ادلب 2015-4-16	Attack on Idlib city 16-5-2015
			استهداف مدينة سرمين بغاز الكلور 2015-5-16	Attack on Sarmin city 16-5-2015
			الكيمياوي سرمين 2015-3-23	Chemicals Sarmin 23-3-2015
			الكيمياوي سرمين تقرير 2015-3-16	Chemicals Sarmin Report 13-3-2015
			كفر عويد بالكلور 2015-4-26	Chlorine Kafer Awid 26-4-2015
			كنصفرة 2015-05-03 الاسماء لمصابين بالكلور	Kansaqra 03-05-2015 names of chlorine victims
			Video 20150523100702	Video 20150523100702
		MAH00012	MAH00012	
1009	No electronic evidence was handed over to the team			
1017	No electronic evidence was handed over to the team			
1014	No electronic evidence was handed over to the team			
1023			DSC_0630	DSC_0630
			FB_IMG_1431760728837	FB_IMG_1431760728837
			FB_IMG_1431760732808	FB_IMG_1431760732808
			IMG_39138753519733	IMG_39138753519733
			SAM_1478	SAM_1478
1035	No electronic evidence was handed over to the team			
1020	No electronic evidence was handed over to the team			
1027	No electronic evidence was handed over to the team			

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
1022	No electronic evidence was handed over to the team			
1026	No electronic evidence was handed over to the team			
1032	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\____\_____	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\____\_____	DSC00101	DSC00101
			DSC00102	DSC00102
			DSC00103	DSC00103
			DSC00104	DSC00104
			DSC00105	DSC00105
			DSC00106	DSC00106
			DSC00107	DSC00107
			DSC00108	DSC00108
			DSC00109	DSC00109
			DSC00110	DSC00110
			DSC00111	DSC00111
			DSC00112	DSC00112
			DSC00113	DSC00113
			DSC00114	DSC00114
DSC00115	DSC00115			
DSC00116	DSC00116			
DSC00117	DSC00117			
DSC00118	DSC00118			
DSC00119	DSC00119			
DSC00120	DSC00120			
DSC00121	DSC00121			
DSC00122	DSC00122			
DSC00123	DSC00123			
DSC00124	DSC00124			

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\____\_____	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\____\_____	IMG_7516	IMG_7516
			IMG_7517	IMG_7517
			IMG_7518	IMG_7518
			IMG_7519	IMG_7519
			IMG_7520	IMG_7520
			IMG_7522	IMG_7522
			IMG_7523	IMG_7523
			IMG_7524	IMG_7524
			IMG_7525	IMG_7525
			IMG_7526	IMG_7526
			IMG_7527	IMG_7527
			IMG_7528	IMG_7528
			IMG_7529	IMG_7529
			IMG_7530	IMG_7530
			IMG_7531	IMG_7531
			IMG_7532	IMG_7532
			IMG_7533	IMG_7533
			IMG_7534	IMG_7534
			IMG_7535	IMG_7535
				Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\_____
#VI_7566	#VI_7566			
_____	_____			
_____	_____			
_____	_____			

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			24-3-2015	24-3-2015
			IMG_7286	IMG_7286
			IMG_7287	IMG_7287
			IMG_7288	IMG_7288
			IMG_7289	IMG_7289
			IMG_7290	IMG_7290
			IMG_7291	IMG_7291
			IMG_7292	IMG_7292
			IMG_7293	IMG_7293
			IMG_7295	IMG_7295
			IMG_7296	IMG_7296
			IMG_7298	IMG_7298
			IMG_7302	IMG_7302
			IMG_7303	IMG_7303
			IMG_7304	IMG_7304
			IMG_7307	IMG_7307
			IMG_7308	IMG_7308
			IMG_7309	IMG_7309
			IMG_7310	IMG_7310
			IMG_7311	IMG_7311
			IMG_7312	IMG_7312
			IMG_7313	IMG_7313
			IMG_7314	IMG_7314
			IMG_7315	IMG_7315
			IMG_7465	IMG_7465
			IMG_7466	IMG_7466

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
			IMG_7467	IMG_7467
			IMG_7468	IMG_7468
			IMG_7470	IMG_7470
			IMG_7471	IMG_7471
			IMG_7472	IMG_7472
			IMG_7473	IMG_7473
			IMG_7475	IMG_7475
			IMG_7478	IMG_7478
			IMG_7479	IMG_7479
			IMG_7482	IMG_7482
			IMG_7483	IMG_7483
			IMG_7484	IMG_7484
			IMG_7485	IMG_7485
			IMG_7486	IMG_7486
			MVI_7285	MVI_7285
			MVI_7297	MVI_7297
			MVI_7299	MVI_7299
			MVI_7300	MVI_7300
			MVI_7426	MVI_7426
			MVI_7430	MVI_7430
			MVI_7431	MVI_7431
			MVI_7464	MVI_7464
			MVI_7480	MVI_7480
MVI_7481	MVI_7481			
	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\Raw Files\JPEG	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\Raw Files\JPEG	Canon EOS 1100D000	Canon EOS 1100D000

Interview Number	Folders		Files	
	Original name	Name translated to English	Original name	Name translated to English
	Graphics file	Graphics file		
	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\Raw Files\MP4 Multimedia file	Recovered Files 09_06_2015 20_20\Recovered data 06-09-2015 at 20_33_04\FAT32\Raw Files\MP4 Multimedia file	FILE000	FILE000
			FILE001	FILE001
			FILE002	FILE002
			FILE003	FILE003
			FILE004	FILE004
1000	No electronic evidence was handed over to the team			
1029	No electronic evidence was handed over to the team			

## APPENDIX 7

LOCATIONS IN ARABIC,  
WITH EQUIVALENT SPELLING IN LATIN SCRIPT

Arabic	English	Alternative(s)
الجانودية	Al Janoudiyeh	El Janoudiye/ Janoudiyeh/ Al Janoudiya
الكستن	Al Kastan	El Kastane
التمانة	Al Tamanah	Al-Tamanaa
المسطومة	Mastume	Al Mastoumi / Al-Mastumah
النيرب	Al Nerab	Al-Nayrab / Al-Nairab/ Al-Neirab
أريحا	Ariha	Arihah
البشيرية	Bashiriyeh	Bachiriyeh/ Al-Bashiriyeh
بنش	Binnish	Binich/ Benesh/ Benech
دمشق	Damascus	
حماة	Hama	
ادلب	Idlib	Edleb/ Edlib
جسر الشعور	Jisr ash-shugur	Jisr Al Shughour/ Jisr El Shoughour
كفر عويد	Kafar Oueid	Kafr Oueid
كفر زيتا	Kfar Zita	Kafar Zita/ Kafr Zeita
كفر بطيخ	Kafr Battikh	Kafar Battikh/ Kafar Batikh
كنصفرة	Kansafra	Qansafra
معرة مصرين	Ma'arrat Misrin	Maarat Misrin
مشمشان	Meshmshan	Mechmchen/ Mechmchan/ Meshmshen
قميناس	Qminas	Qmenas
سراقب	Saraqib	Sarakeb/ Saraqeb/ Sarakib
سرمين	Sarmin	Sarmine/ Sarmeen

**Enclosure V**

**Note by the technical secretariat of the Organization for the  
Prohibition of Chemical Weapons**

**Report of the OPCW fact-finding mission in Syria regarding alleged  
incidents in Marea, Syrian Arab Republic**

**August 2015**

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**Annex****REPORT OF THE OPCW FACT-FINDING MISSION IN SYRIA  
REGARDING ALLEGED INCIDENTS IN MAREA,  
SYRIAN ARAB REPUBLIC  
AUGUST 2015****1. SUMMARY**

Open-source media were examined and cross-referenced with other sources of information, including that obtained from non-governmental organisations (NGOs). This provided a credible basis for investigation, resulting in a team being deployed primarily to interview patients and obtain biomedical samples. Through the biomedical samples and interviews with patients and medical staff, the team was able to confirm with the utmost confidence that at least two people were exposed to sulfur mustard and were in the process of recovering from the exposure. It is additionally very likely that the effects of sulfur mustard resulted in the death of a baby.

## 2. METHODOLOGY

### Methodological considerations

2.1 The three main driving principles in the development of the team's fact- and data-gathering methodology were to ensure that:

- (a) a validated methodology is used for the acquisition and analysis of evidence to the maximum extent possible under the conditions of the mission;
- (b) the personnel conducting the investigation have the appropriate skill sets and training; and
- (c) the appropriate chain of custody procedures are applied to the collection of all evidence.

### METHODOLOGY FOR THE ACQUISITION AND ANALYSIS OF EVIDENCE

2.2 In conducting its work, the OPCW Fact-Finding Mission (FFM) in Syria (Appendix 1) complied with the current OPCW guidelines and procedures for the conduct of an investigation of alleged use (IAU) of chemical weapons.

2.3 The FFM also adhered to the most stringent protocols available, using both objective criteria and standard questionnaires for such an investigation, as set out in Appendix 3. As these questionnaires were specifically designed for IAUs, slight modifications were occasionally required. Authority for such flexibility to make modifications is expressly provided for in the OPCW procedures. Additionally, any modifications were minor and were carried out in consultation with the Office of the Legal Adviser and the Office of the Director-General.

2.4 The most relevant methods for collecting and evaluating the credibility of information included the following, inter alia: research into incidents and existing reports; the assessment and corroboration of background information; the conduct of interviews with relevant medical treatment providers and with alleged victims; the review of documentation and records provided by interviewees; the assessment of the symptoms of victims as reported by interviewees; and the collection of biomedical samples for subsequent analysis.

2.5 During the preparatory phase, the team engaged in open-source research concerning the allegations (Appendix 4). The majority of sources included news media, blogs, and the websites of various NGOs. The team managed contact with the casualties and other interviewees through the same NGOs that were engaged in the previous FFM-Alpha mission.

### Access to relevant geographic locations

2.6 In the conduct of an investigation, complete, direct, and immediate access to the scene of alleged events provides the greatest opportunity to collect higher value evidence. Taking into account various constraints, such as the available time, and security concerns, the FFM considered three main factors in deciding whether to conduct on-site visits, including interviews:

- (a) the scientific and probative value of an on-site visit;

- (b) the risk assessment of conducting such visits in the midst of the ongoing armed conflict in the Syrian Arab Republic and in a location considered at that moment as front line; and
- (c) whether some victims and/or witnesses had been able to cross the national borders for treatment and were willing to meet the FFM team.

2.7 In the best case during an investigation, potential interviewees would be identified by one of two means: the first through the investigation team canvassing the area of the alleged incident to identify witnesses; and the second through the identification of potential interviewees as possible leads by another source deemed reliable by virtue of proximity or involvement.

2.8 Due to security concerns in the region of the alleged incident, the time frame of events, and the fact that the victims had been transferred to a more secure location in a neighbouring State Party (hereinafter “Country X”) for treatment (which also provided potential access to medical records and for collecting biomedical samples), it was determined that the risk for the team to visit the incident area was prohibitive. Therefore, the team could not directly observe, assess, and record locations of alleged incidents, could not canvass directly for other witnesses and affected persons, and could not collect environmental samples and/or remnants of the alleged munitions.

#### **Selection of interviewees**

2.9 Extensive discussions took place between elements of the Technical Secretariat (hereinafter “the Secretariat”) with representatives of the Government of Country X, and with the Chemical Violations Documentation Center Syria (CVDCS). The ultimate purpose was to coordinate logistics and movements, identify the victims’ hospital location, and arrange for authorisation for them to be visited by the team for interviews. These discussions were initiated prior to deployment and completed during the first days of deployment in Country X.

2.10 Through this interaction, the team received from CVDCS the names and location of one family whose members had been exposed to the toxic chemical. This family was composed of two parents and two children, both minors. The team contacted the parents from this family, the treating doctors, and the manager of the hospital where the parents were located at the time of the interviews, and secured permission to conduct interviews in the hospital with the casualties and the treating doctors. Later on, during the mission deployment, the team was informed about a second family that had also been exposed. The team was not able to meet with this second family.

#### **Interview process**

2.11 The FFM made all efforts to respect cultural and religious values and norms, national customs, and the personal pressures and traumas associated with exposure to the toxic chemical and with the health condition of the victims. Therefore, the team conducted a detailed interview with the treating physician while the duration of the interviews with the victims was kept as short as possible, due to their condition at the time of the interview.

2.12 The interview methods were based on the free recall technique, tailored with follow-on questions relevant to this investigation and adapted from standard

operating procedures (QDOC/INS/WI/IAU05). The FFM conducted the interviews with the treating physician, the mother, and the father in separate rooms. The interview with the doctor was held in French, translated into the local language, and the interview with the casualties was held in Arabic.

2.13 The initial portion of the recorded interview was a standard process used by the FFM team, including an explanation of the aims of the interview, and confirmation of consent. Subsequently, the interviewee delivered his or her statement regarding the incident. With a view to obtaining a full account of what was witnessed and experienced by the interviewees, follow-up questions were posed by the interview team.

2.14 In conducting the interviews, full consideration was given to the privacy and protection of participants. All information was kept confidential and the identity of victims, the treating doctor, and the director of Marea hospital protected at all times. An identity number was assigned to each interviewee and only this number was used for the processing of data. The master list with the names of the victims and the doctors was kept secure with the FFM team.

2.15 At the end of each day, the FFM held a debriefing session and shared its findings. This was followed by the securing of all data and documents collected that day.

#### **Epidemiological methodology**

2.16 Epidemiological determination of cause and effect was established according to the following criteria:

- (a) there must be a biologically plausible link between the exposure and the outcome;
- (b) there must be a temporal relationship between the exposure and the outcome; and
- (c) there must not be any likely alternative explanation for the symptoms.

2.17 An epidemiological investigation should ideally include a review of all the documentation related to an alleged incident; an epidemiological description of the incident; interviews with presenting witnesses, health-care workers, and first responders; first-hand interviews with survivors; and on-site assessments of symptoms and signs, including assessments of the clinical severity of their syndromes. Further information regarding the treatment and outcomes of persons exposed should be retrieved from medical files relating to the time of incident and from interviews with the treating clinicians. The epidemiological investigation should yield information about the scale of each event and provide contextual and geographical information that should subsequently be cross-checked and corroborated by the environmental sampling teams.

2.18 However, as mentioned previously, the FFM was not able to physically visit the locations of the alleged incidents, and therefore did not have the opportunity to:

- (a) assess the geography of the locations of the alleged incidents;
- (b) visit the previous hospitals and clinics where the casualties were treated and make assessments of the available facilities;

- (c) gain access to records, including patient registers, medical files, treatment records, radiographs, laboratory reports, etc., from those previous treatment facilities; and
- (d) conduct on-site collection of testimonies and clinical examination.

2.19 The FFM could nonetheless rely on clinical examinations at the hospital in which the casualties were located at the time of the team's deployment. The epidemiological investigation was therefore focused on collecting the testimonies of the casualties and those providing medical care at that time, together with collecting and examining relevant documentary evidence that they might offer.

#### **Biomedical samples**

2.20 The methods used by laboratories for the analysis of the biomedical samples received by the FFM are currently being evaluated through biomedical testing exercises for the analysis of such samples. For the analysis of biomedical samples, the FFM used laboratories involved in the OPCW biomedical testing exercises for biomedical samples.

#### **PERSONNEL SELECTION, SKILL SETS AND TRAINING**

2.21 Team members were selected based on their specific skill sets across a broad range of mission requirements. The skill sets included knowledge and expertise in the following fields:

- (a) analytical chemistry;
- (b) medical/health, including epidemiology and first response;
- (c) industrial chemicals and technology;
- (d) interview and negotiation; and
- (e) contingency operations experience, including previous experience with fact-finding missions and other missions to the Syrian Arab Republic.

2.22 Equipment needs were identified and equipment was sourced while movements and logistics were arranged. Expert advice and consultation was also coordinated with resources from the Secretariat, particularly with regard to health and safety, security matters, and the legal aspects of the process.

2.23 The above preparations ensured that sample receipt, interviews, and all other evidence collection was performed by fully trained and qualified inspectors.

#### **CHAIN OF CUSTODY, EVIDENCE COLLECTION AND HANDLING**

2.24 This FFM collected evidence in the form of witness interviews/statements (taken as audio and/or video recordings), two medical records, one certificate of death, 13 photographs, and four biomedical (blood and urine) samples from victims. The following procedures, aimed in particular at ensuring the chain of custody from the moment of receipt, were applied during the mission:

- (a) All witness statements/interviews were video and/or audio recorded and the recordings were documented as evidence.
- (b) All electronic files or paper documents handed over by interviewees were registered in the evidence logbook.

- (c) Electronic data storage devices were viewed only via a universal serial bus (USB) bridge, and secure digital (SD) ultra small flash memory cards were locked prior to viewing in order to not alter the metadata of the files.
- (d) Files on original electronic storage devices were copied to provide best evidence and working copies were made so as to not compromise original information during data handling.
- (e) The receipt, packaging, and sealing of the provided samples were supported by photographs and appropriate paper documentation.
- (f) The received samples were in the possession of at least one FFM team member and under OPCW seal from the time of receipt until arrival at the FFM on-site office.
- (g) At the FFM on-site office, the samples were fully documented, packaged, sealed and packed appropriately for safe transport.
- (h) The integrity of the samples was ensured through their physical possession by an FFM member and/or through tamper-proof seals.
- (i) All seals and accompanying documentation were confirmed correct/intact prior to the issuance of handover/takeover receipts.

### 3. INCIDENT SUMMARIES AND ANALYSIS

3.1 Marea is a village in the Aleppo Governorate of the Syrian Arab Republic. It is located 35 km north of Aleppo City and 25 km south of the Turkish border. In August 2015, the village was not under government control.

3.2 Information from the interviewees and from open-source media indicates that three incidents involving the alleged use of chemical weapons occurred in Marea on 21 August, 1 September, and 4 September 2015.

3.3 This investigation focused on the alleged incident of 21 August 2015. The FFM did not have direct access to individuals who were involved in the other incidents and only undertook an indirect interview with the director of Marea hospital (a nurse) via audio conference call. The identity of the interviewee was not confirmed by the FFM through documentation or identification. However, it was clear to the FFM through the context of the interview that he had a medical background and knowledge.

3.4 Between 5 and 9 September 2015 (see Appendix 2 for timelines), the FFM interviewed and collected the testimonies of four individuals: the treating physician, the director of a hospital (as above), and two casualties.

3.5 Three interviews were carried out in person.

#### **Testimony derived from interviews with the two casualties, the treating physician, and the Marea hospital director**

3.6 These testimonies only contained information relevant to the incident of 21 August 2015.

3.7 Over the course of approximately one hour and a half, from around 10:00 to 11:30, Marea was bombarded by around 50 projectiles.

3.8 One projectile fell inside one of the rooms of a house. A family of four was in the house: a 31-year-old father, 24-year-old mother, and two children. The projectile created a crater of roughly 1 m diameter, and smoke. Three members of the family were in the room and one of the children (the three-year-old) was on the patio. Initially they did not have any symptoms. They washed themselves for decontamination. Approximately one hour later, they started vomiting, and their eyes and skin started to turn red and became painful. A few hours later, they had difficulty swallowing and experienced visual disturbances.

3.9 At around 16:00 to 17:00, Marea hospital received the family. According to the director of the hospital:

- (a) “The father was suffering from a runny nose and teary eyes, skin burns (especially in the upper limb, neck) and headache;
- (b) the mother was suffering from breathing difficulty, eyes redness and tearing;
- (c) the three-year-old child was only suffering from nausea and vomiting; and
- (d) the five-day-old new born (who died on Sunday, 6 September) was suffering from effort breathing and wheezing”.

3.10 The family was referred to Tal Refaat hospital, then to Seju Hospital in the Syrian Arab Republic, then referred directly to a hospital in Country X.

3.11 On 22 August, the family members were transferred to three separate hospitals, designated for the purposes of this report as hospitals 1, 2, and 3, respectively. The father and the mother were referred to the intensive care unit (ICU) of hospital 1 in Country X; on the same day, the three-year-old child was referred to hospital 2; and the five-day-old baby was referred to hospital 3. The FFM did not have any clear information about the reason as to why the family members were dispatched to different hospitals.

3.12 Hospital 2 released the patient after a few days. In accordance with OPCW protocols, the FFM did not interview her in the absence of the parents, who were in hospital 1 at that time.

3.13 Hospital 3 issued a death certificate related to the baby.

3.14 According to the treating physician in hospital 1 and the medical files received from the hospital:

- (a) **Patient, male, 31 years old:** The medical examination demonstrated eyelid oedema, redness of eyes, throat lesions, several burn lesions in different parts of the body with several blisters in the dorsal area (with a non-infected fluid), skin itching, and photophobia. The other medical examinations, including cardiovascular, pulmonary, and abdominal, were normal.
- (b) **Patient, female, 24 years old:** The medical examination demonstrated eyelid oedema, redness of eyes, throat lesions, several burn lesions in most parts of the body with several blisters in the dorsal area (with a non-infected fluid) and skin itching. In addition, she had a urinary infection and pneumonia. The other medical examinations, including cardiovascular and abdominal, were normal.

3.15 The laboratory investigation (blood and urine) demonstrated an inflammatory syndrome but no specific chemical agent analysis has been done.

3.16 The treatment for both patients was symptomatic with a clear improvement day by day.

#### **Additional testimony from the director of Marea hospital**

3.17 The director of Marea hospital gave an account of an alleged incident with a number of casualties, including a different family from the one mentioned above. His account is provided below:

“Another example of severe cases: Five persons from one family (a father, his wife, two daughters and the cousin of the father) were treated first of all in Tal Refaat. They consulted Marea hospital on the 25th of August. Symptoms and signs were: the adult male had a skin redness, swollen eyelids; the wife had difficulty breathing; one of the kids had skin redness; the cousin of the father was suffering from tearing, swollen eyelids, nausea, and vomiting.”

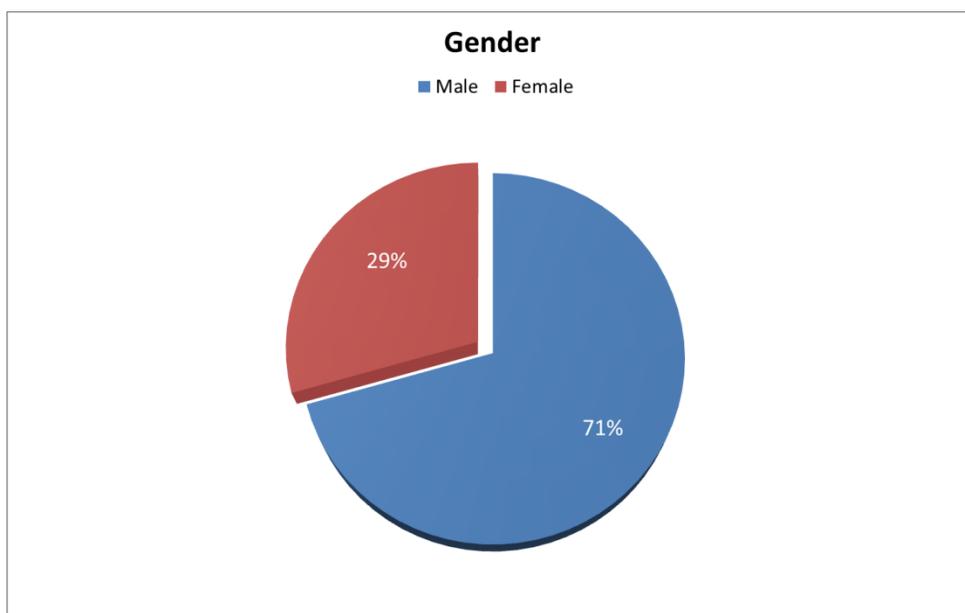
3.18 On 26 August, they were referred to a hospital in Country X.

3.19 In total over four days, 85 patients were managed in Marea hospital. Twenty percent of the cases were severe cases and 80% of the cases were mild and moderate. The following treatment was given for the cases:

- (a) intravenous infusion;
- (b) antibiotics;
- (c) antiseptic (Povidon);
- (d) steroids; and
- (e) burn ointment.

3.20 The following tables and figures show the gender and age distributions for those alleged to have been exposed to chemical(s) and are based on the testimony of the director of Marea hospital.

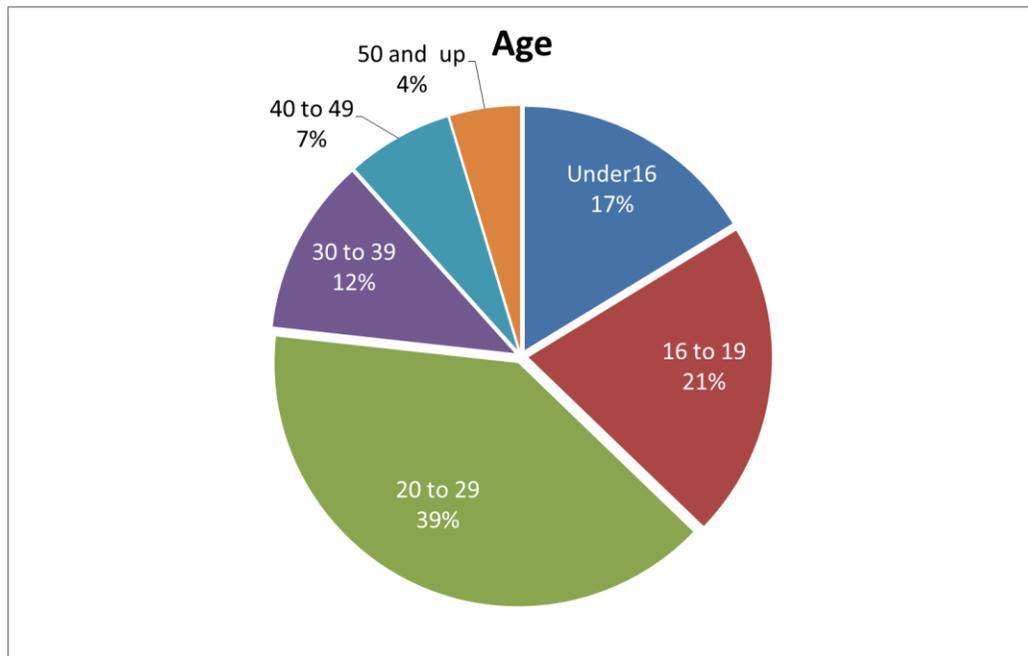
**FIGURE 1: DISTRIBUTION OF EXPOSED PERSONS BY GENDER AS REGISTERED IN THE MEDICAL REGISTER OF MAREA HOSPITAL FROM 21 TO 26 AUGUST 2015**



**TABLE 1: DISTRIBUTION OF EXPOSED PERSONS BY AGE AS REGISTERED IN THE MEDICAL REGISTER OF MAREA HOSPITAL FROM 21 TO 26 AUGUST 2015**

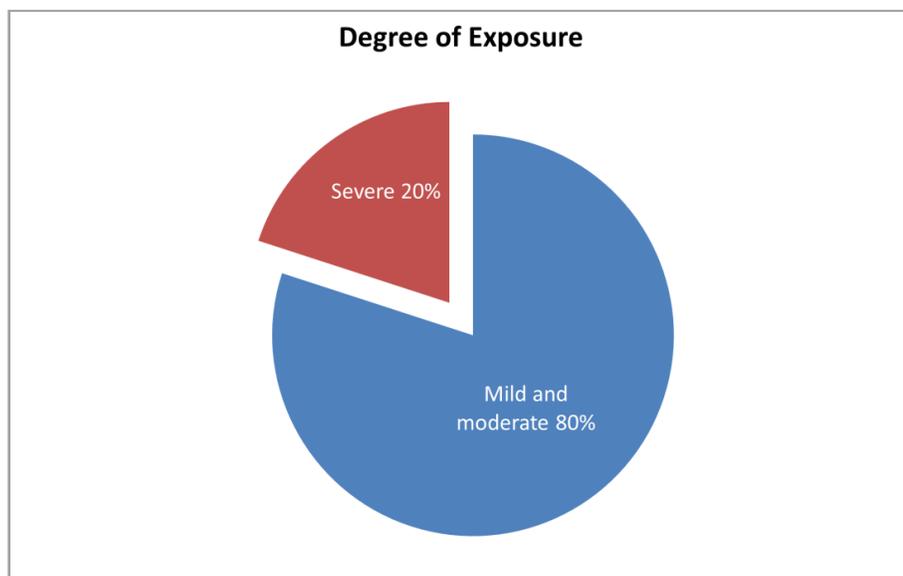
	<b>Under 16</b>	<b>16 to 19</b>	<b>20 to 29</b>	<b>30 to 39</b>	<b>40 to 49</b>	<b>50 and above</b>	<b>Total</b>
Male	3	5	13	5	1	2	29
Female	4	4	4	0	2	0	14
<b>Total</b>	<b>7</b>	<b>9</b>	<b>17</b>	<b>5</b>	<b>3</b>	<b>2</b>	<b>43</b>

**FIGURE 2: DISTRIBUTION OF EXPOSED PERSONS BY AGE AS REGISTERED IN THE MEDICAL REGISTER OF MAREA HOSPITAL FROM 21 TO 26 AUGUST 2015**



**TABLE 2: DISTRIBUTION OF PATIENTS BY SYMPTOMS OF EXPOSURE**

	<b>Exposed</b>
Mild and moderate	80%
Severe	20%

**FIGURE 3: DISTRIBUTION OF PATIENTS BY SYMPTOMS OF EXPOSURE**

3.21 The following paragraphs outline other incidents described by the director of Marea hospital, but which fell outside the dates of the mandate.

**Incident of 1 September 2015 (Source: interview with the director of Marea hospital)**

“Over the course of approximately one hour (around 12:00), Marea was bombarded by around 20 projectiles. Most of the population had already left the village after the first incident. From 1 to 3 September 2015, the hospital received 52 cases. All of them were affected by secondary contamination. Most of them were mild cases (difficulty breathing, redness of skin), except for two cases that were moderate, who in addition had itchy and red skin as well as blisters.

In general the treatment consisted of an intravenous infusion, antibiotics, antiseptic, steroids, and burn ointment.

After the first incident, the health team in the hospital started a strategy of decontamination in the pre-hospital.”

**Incident of 4 September 2015 (Source: interview with the director of Marea hospital)**

“The hospital received four cases (Free Syrian Army fighters): three from Marea and one from Homs. All of them were mild cases. A bad odour was detected on the clothes. The treatment was antiseptic, steroids and Larfine (to relieve allergy symptoms).

No noticeable water and/or food contamination.”

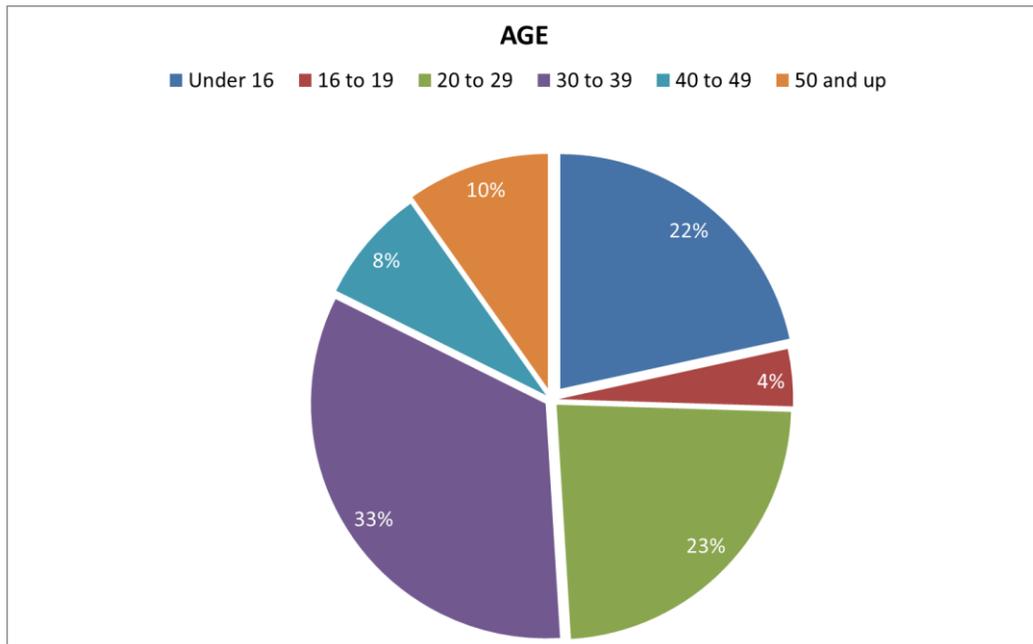
End of the interview with the director of Marea hospital.

3.22 The following tables and charts are based on information that the FFM received from the director of Marea hospital.

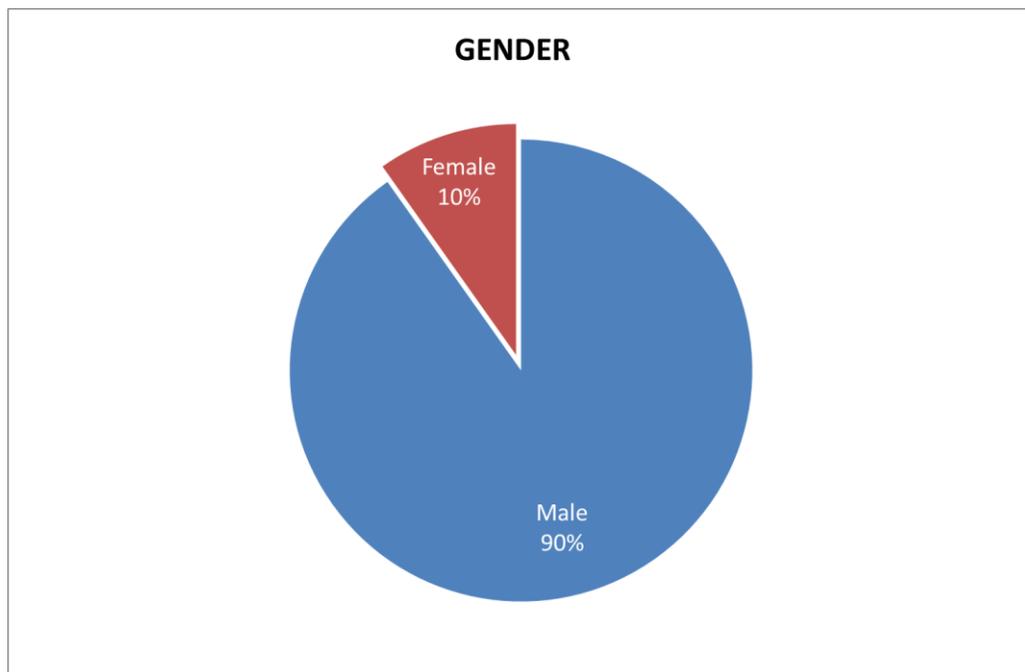
**TABLE 3: DISTRIBUTION OF THE EXPOSED PERSONS BY GENDER AND AGE AS REGISTERED IN THE MEDICAL REGISTER OF MAREA HOSPITAL FROM 3 TO 5 SEPTEMBER 2015**

<b>3 September 2015</b>							
	<b>Under 16</b>	<b>16 to 19</b>	<b>20 to 29</b>	<b>30 to 39</b>	<b>40 to 49</b>	<b>50 and above</b>	<b>Total</b>
Male	3	1	7	7	2	1	21
Female	0	0	0	0	0	1	1
<b>Total</b>	<b>3</b>	<b>1</b>	<b>7</b>	<b>7</b>	<b>2</b>	<b>2</b>	<b>22</b>
<b>4 September 2015</b>							
Male	1	1	5	4	2	3	16
Female	0	0	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>4</b>	<b>2</b>	<b>3</b>	<b>16</b>
<b>5 September 2015</b>							
Male	5	0	0	4	0	0	9
Female	2	0	0	2	0	0	4
<b>Total</b>	<b>7</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Total of the three days</b>							
Male	9	2	12	15	4	4	46
Female	2	0	0	2	0	1	5
<b>Total</b>	<b>11</b>	<b>2</b>	<b>12</b>	<b>17</b>	<b>4</b>	<b>5</b>	<b>51</b>

**FIGURE 4: DISTRIBUTION OF EXPOSED CASUALTIES, BY AGE**



**FIGURE 5: DISTRIBUTION OF EXPOSED CASUALTIES BY GENDER**



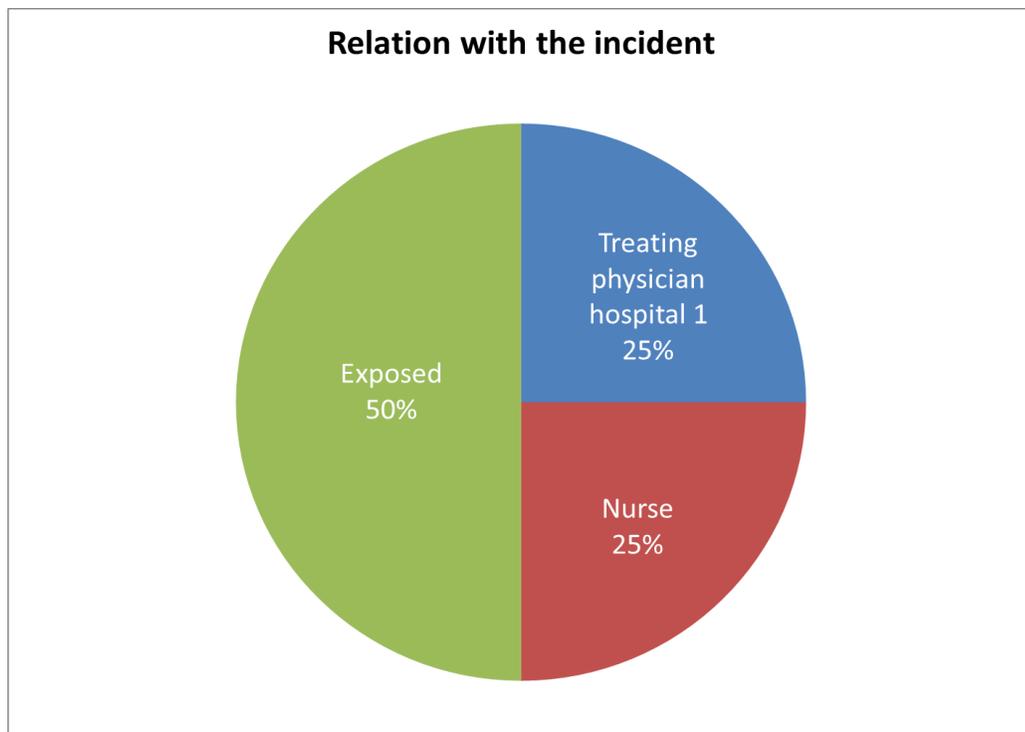
**Analysis of the incident of 21 August 2015**

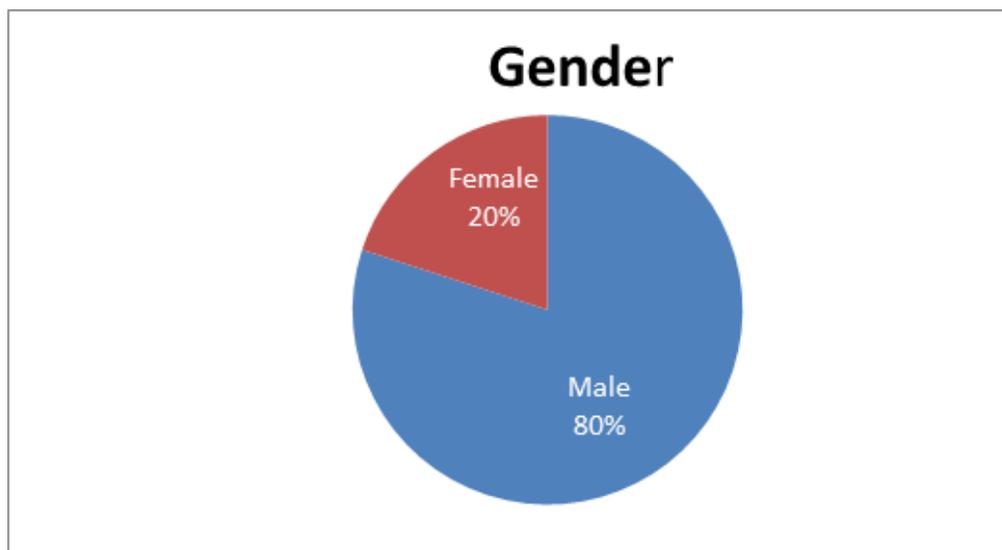
3.23 Four interviews were completed. The details of these interviewees are provided in table below.

**TABLE 4: INTERVIEWEE DETAILS**

	<b>Interviewee</b>	<b>Male</b>	<b>Female</b>
Treating physician from hospital 1	1	1	0
Director of Marea hospital/nurse*	1	1	0
Exposed persons	2	1	1
<b>Total</b>	<b>4</b>	<b>3</b>	<b>1</b>

\* Done by audio conference call.

**FIGURE 6: INTERVIEWEES AND THEIR RELATION TO THE INCIDENT**

**FIGURE 7: DISTRIBUTION OF INTERVIEWEES BY GENDER****Analysis of medical symptoms and signs**

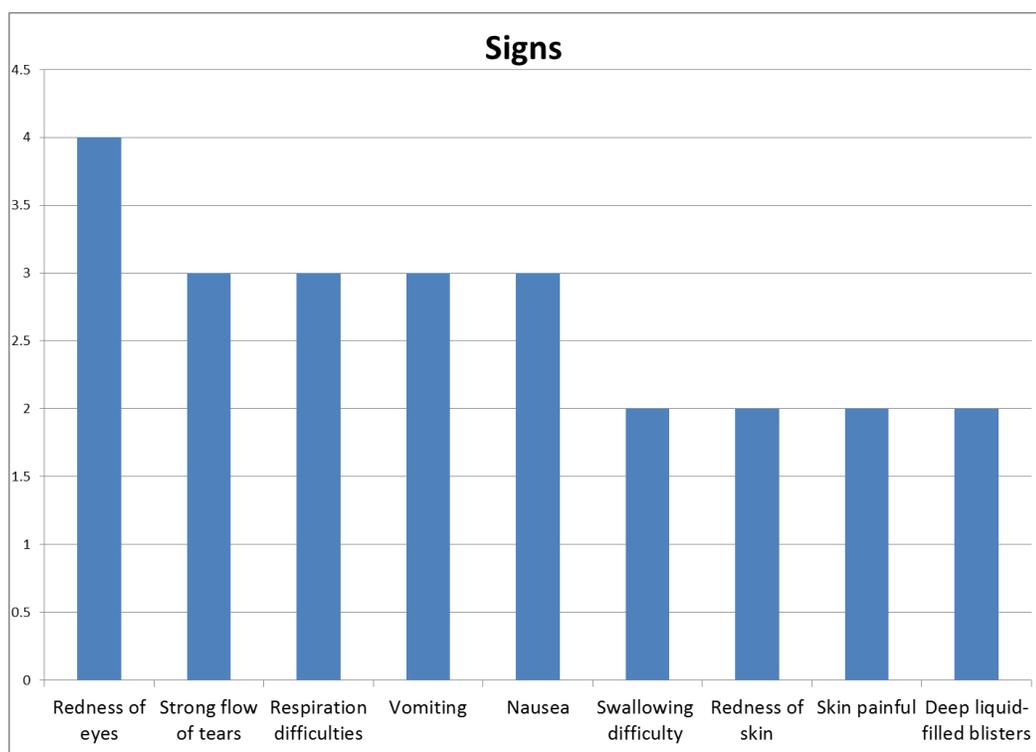
3.24 The following analysis is based on the interview of two casualties and their treating physician. The symptoms and the signs of exposure observed by the treating physician, and the treatment that was provided to those patients, in addition to the symptoms based on interviewees' testimonies, are discussed below.

3.25 The signs and symptoms of the four casualties from the family, as described by the two casualties who were interviewed by the FFM, are presented in the following table and chart.

**TABLE 5: SIGNS AND SYMPTOMS OF FAMILY MEMBERS, AS DESCRIBED BY THE ADULTS IN THE FAMILY**

<b>Signs and symptoms</b>	<b>No. of Affected Persons</b>
Redness of eyes	4
Strong flow of tears	3
Respiration difficulties	3
Vomiting	3
Nausea	3
Swallowing difficulty	2
Redness of skin	2
Skin painful	2
Deep liquid-filled blisters	2
<b>Total</b>	<b>4</b>

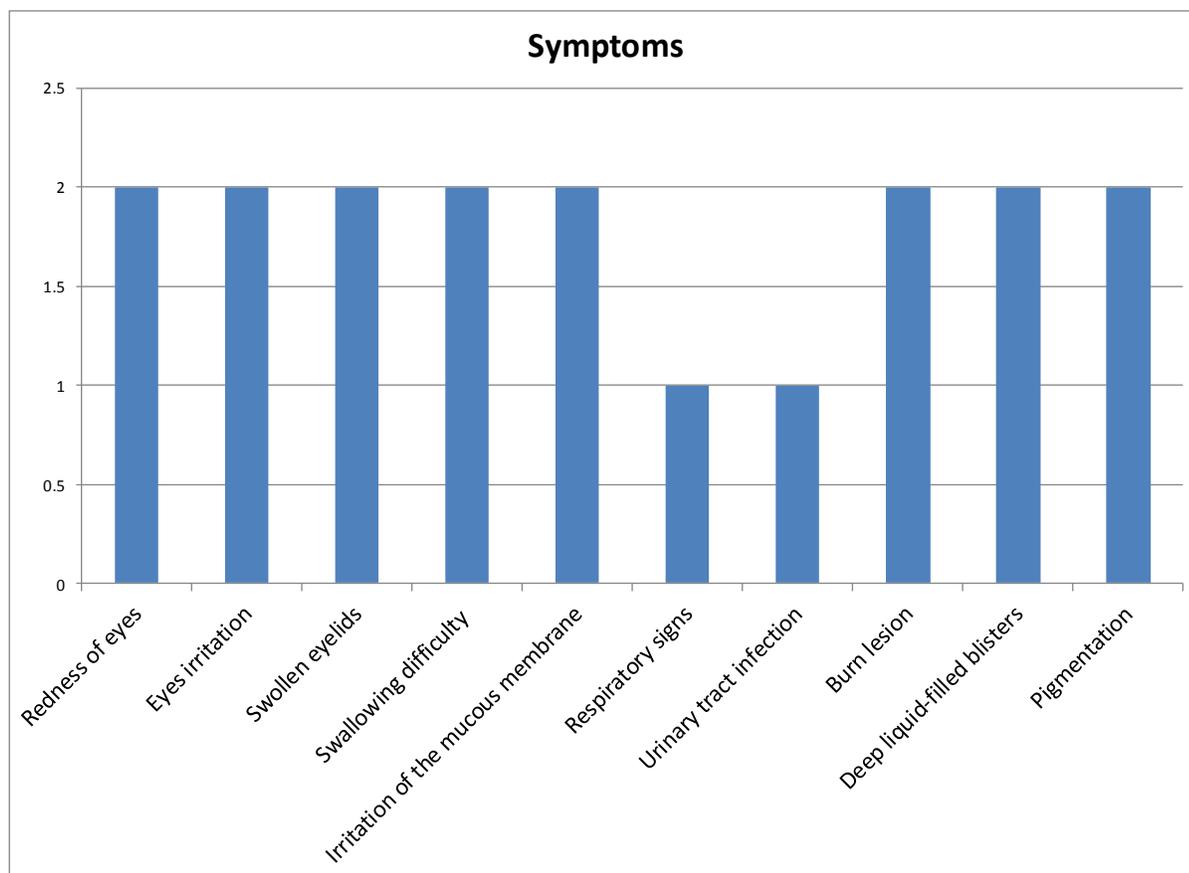
**FIGURE 8: SIGNS AND SYMPTOMS OF FAMILY MEMBERS, AS DESCRIBED BY THE ADULTS IN THE FAMILY**



**TABLE 6: CLINICAL EXAMINATION, SIGNS AND SYMPTOMS AS OBSERVED BY THE TREATING PHYSICIAN OF THE TWO ADULT CASUALTIES**

Symptom	No. of Affected Persons
Redness of eyes	2
Eyes irritation	2
Swollen eyelids	2
Swallowing difficulty	2
Irritation of the mucous membrane	2
Respiratory signs	1
Urinary tract infection	1
Burn lesion	2
Deep liquid-filled blisters	2
Pigmentation	2
<b>Total</b>	<b>2</b>

**FIGURE 9: THE CLINICAL EXAMINATION, SIGNS AND SYMPTOMS AS OBSERVED BY THE TREATING PHYSICIAN OF THE TWO ADULT CASUALTIES**



**TABLE 7: LABORATORY AND RADIOLOGICAL EXAMS CONDUCTED BY “HOSPITAL 1” IN COUNTRY X FOR THE 2 ADULT CASUALTIES**

General blood analysis	2
General urine analysis	2
General blood culture	2
General urine culture	2
X-ray	2

3.26 The visual examination during the interview of the two adult casualties met by the FFM (18 days after the incident) demonstrated several burn lesions (first and second degree) and pigmentation, and the patients’ voices were hoarse. In addition, the wife presented a scar, most probably from recent caesarean surgery.

#### **Report of biomedical samples**

3.27 The FFM witnessed the collection, by hospital staff, of biomedical samples (blood and urine) from the two adult casualties met by the FFM. Blood was

separated in-country into plasma and cells, and then divided into three aliquots from each individual. Urine was also divided into three aliquots from each individual.

3.28 The samples were received at the OPCW Laboratory on 11 September 2015, and were unpacked and stored (under seal) in the secure archive. The samples were repackaged and transported to two partner laboratories on 21 and 24 September 2015 under escort of OPCW Laboratory chemists. This complete process was documented, and the chain of custody of all samples was maintained.

3.29 In total, there were three aliquots from each sample. No aliquots were given to any parties other than the laboratories. The first aliquot is safely stored in the secure archive in Rijswijk. The second and third aliquots were sent to two partner laboratories (laboratories noted as “lab 2” and “lab 3”).

3.30 The following table summarises the findings from the analyses of the biomedical samples.

**TABLE 8: SUMMARY OF THE ANALYSIS FROM THE BIOMEDICAL SAMPLES**

Sample Code	Sample Type	Findings
1047/B	Blood plasma	Indicators of sulfur mustard exposure: Serum albumin tripeptide adduct Derivative of released thiodiglycol
1058/B	Blood plasma	
1047/U	Urine	Indicators of sulfur mustard exposure: Derivative of thiodiglycol Derivative of sulfur mustard metabolites
1058/U	Urine	

3.31 The analyses of the two laboratories are consistent. The two laboratories confirmed the presence of indicators of sulfur mustard in the plasma samples for both victims. The laboratories also confirmed the presence of indicators of sulfur mustard exposure in urine samples for one of the victims. One of the designated laboratories indicated a negative result for urine concerning one victim.

#### **Certificate of death**

3.32 A certificate of death related to the baby, received from the family through an NGO, confirmed that the date of death was 4 September 2015 in hospital 3. The type of death was natural death caused primarily (directly) by a bacterial sepsis due to (secondary) chemical weapon poisoning. No autopsy was requested. The FFM did not receive any further information from hospital 3.

#### **Impact points**

3.33 The following figures show an aerial view of Marea and the alleged impact point of the munition that caused injury to the family.

FIGURE 10: AERIAL VIEW OF MAREA



FIGURE 11: LOCATION OF IMPACT POINT IN MAREA



## 4. DISCUSSION AND CONCLUSIONS

4.1 Based on monitoring of media reports by the Secretariat, the FFM was ready to mobilise very quickly after reports appeared in the media. This capability was critical to being able to meet patients whilst there was still a high potential for retrieving relevant biomedical samples. Thus, the casualties' testimony could be taken whilst it was relatively fresh in their memories and bio-markers in samples could be detected before the body had the chance to metabolise them.

4.2 On deployment, the team was able not only to meet alleged casualties but also to interview them and to witness the taking of both blood and urine samples. The credibility of these is further enhanced by the interview with the treating physician and supplemented by a member of hospital staff who encountered the casualties on initial medical referral, closer to the location and date of the alleged incident.

4.3 Due to the risks associated with visiting the alleged incident area and the apparent nature of the alleged chemical, the team was not able to obtain other samples, whether chemical, munition, or environmental. Furthermore, the interviews did not concentrate on means of deployment, particularly due to time constraints related to the health and care of the patients. Thus, with predominantly open-source information, the team could not establish a great degree of confidence regarding the means of deployment of chemical.

4.4 This investigation demonstrated:

- (a) an unusual prior event;
- (b) a number of afflicted persons with a similar disease or syndrome presenting at around the same time;
- (c) a number of cases of unexplained disease;
- (d) an illness occurring in an unusual setting within a community;
- (e) analyses of signs and symptoms; and
- (f) positive laboratory results.

4.5 The team deliberately deployed with a small footprint and at short notice to give the greatest surety of obtaining strong and certain evidence. Given the team size, the geographical spread of potential casualties and witnesses, and the practicalities in obtaining further samples (given the likelihood of them containing a Schedule 1 chemical), the focus was on prioritising this evidence rather than on trying to widen the scope to more casualties, witnesses, and/or to obtain more samples.

4.6 The team can confirm, therefore, with the utmost confidence that at least two people were exposed to sulfur mustard (Appendix 5) and were in the process of recovering from the exposure. Additionally, it is very likely that the effects of sulfur mustard resulted in the death of an infant.

**Appendix 1****FFM TEAM MEMBERS**

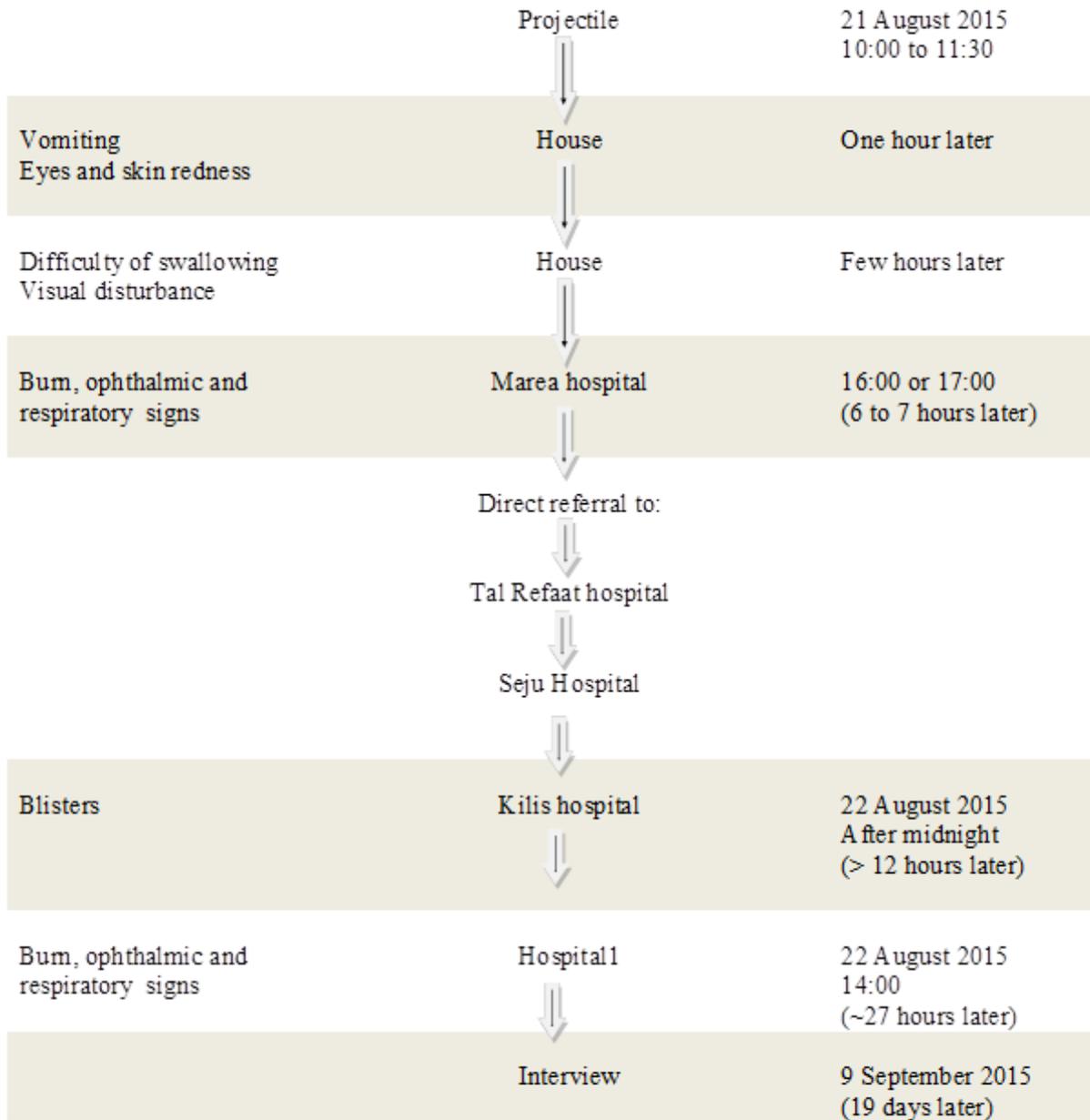
<b>Name</b>	<b>Role(s)</b>	<b>Speciality</b>
Inspector 1	Team Leader	CPT
Inspector 2	Deputy Team Leader. Interview team. Sample handling	AC
Inspector 3	Interview team. Logistics. Sample handling support	HSS
Inspector 4	Interview team coordinator	MD
MPC 1	HQ-based operational and planning support	MPC

**Appendix 2**

**TIMELINES**

**Mission Timelines**

<b>Date (all 2015)</b>	<b>Activity</b>	<b>Location</b>
21 August	Alleged incident	Not applicable to the team
22 August	TS aware of incident. Initial review of open source media	The Hague
25 – 27 August	Networking and liaison with potential enablers of a mission.	HQ
27 August	Team ready to deploy	HQ
3 – 10 September	Deployment. Included negotiations with family members and hospital staff, prior to interviews with patients	Country X
11 September to date	Interview transcription, evidence review, report writing, concurrent with separate mission.	HQ

**Patient Pathway**

### Appendix 3

#### REFERENCE DOCUMENTATION

6.	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
7.	QDOC/INS/WI/IAU05	Work Instruction for Conducting Interviews During an Investigation of Alleged Use
8.	QDOC/INS/SOP/IAU02	Standard Operating Procedure Investigation of Alleged Use (IAU) Operations
9.	QDOC/INS/SOP/GG011	Standard Operating Procedure for Managing Inspection Laptops and Other Confidentiality Support Materials
10.	QDOC/LAB/SOP/OSA2	Standard Operating Procedure for Off-Site Analysis of Authentic Samples
11.	QDOC/LAB/WI/CS01	Work Instruction for Handling of Authentic Samples from Inspection Sites and Packing Off-Site Samples at the OPCW Laboratory
12.	QDOC/LAB/WI/CS03	Work Instruction for Documentation, Chain of Custody and Confidentiality for Handling Off-Site Samples at the OPCW Laboratory
13.	QDOC/LAB/WI/OSA3	Work Instruction for Chain of Custody and Documentation for OPCW Samples On-Site
14.	QDOC/LAB/WI/OSA4	Work Instruction for Packing of Off-Site Samples



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## Appendix 5

### CHARACTERISTICS OF MUSTARD AGENTS

1. Mustard agents are usually classified as “vesicants” or “blistering agents” owing to the types of the tissue damage caused by these substances, resulting in burns and blisters to tissues with which they come in contact. The effect of mustard agent is delayed and the first symptoms do not occur until 2-24 hours after exposure.
2. In its pure state, mustard agent is colourless and almost odourless. At room temperature, mustard agent is a liquid with low volatility and is very stable during storage.
3. In the form of gas or liquid, mustard agent attacks the skin, eyes, respiratory track and gastro-intestinal tract. Internal organs may also be injured, mainly blood-generating organs. The delayed effect is a characteristic of mustard agent. It gives no immediate symptoms upon contact and consequently a delay of two to twenty-four hours may occur before pain is felt and the victim becomes aware of what has happened. By then cell damage would have already begun.
4. Acute mortality arising from exposure to mustard agent is low. The most common cause of death as a result of mustard agent poisoning is the complications after lung injury caused by inhalation of mustard agent.
5. There is no antidote which can affect the basic cause of mustard agent injury. Instead, efforts must be made to treat the symptoms. The most important response measure in the event of suspected or known exposure to mustard is to rapidly and thoroughly decontaminate the patient as soon as possible.