

**Security Council**

Distr.: General
8 February 2022

Original: English

**Letter dated 1 February 2022 from the Secretary-General
addressed to the President of the Security Council**

I have the honour to convey the attached communication, dated 28 January 2022, which I received from the Director-General of the Organisation for the Prohibition of Chemical Weapons (OPCW), transmitting the note from the OPCW Technical Secretariat entitled “Report of the OPCW Fact-Finding Mission in Syria regarding the incidents of the alleged use of chemicals as a weapon in Marea, Syrian Arab Republic, on 1 and 3 September 2015” (see annex).

I would be grateful if you could bring the present letter and its annex to the attention of the members of the Security Council.

(Signed) António **Guterres**



**Annex to the letter dated 1 February 2022 from the Secretary-General
addressed to the President of the Security Council**

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

I have the honour to transmit to you the note by the Technical Secretariat entitled
“Report of the OPCW Fact-Finding Mission in Syria regarding the incidents of the
alleged use of chemicals as a weapon in Marea, Syrian Arab Republic, on 1 and
3 September 2015” (see enclosure).

(Signed) Fernando **Arias**

Enclosure

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



OPCW

Technical Secretariat

S/2017/2022*
24 January 2022
Original: ENGLISH

NOTE BY THE TECHNICAL SECRETARIAT

**REPORT OF THE OPCW FACT-FINDING MISSION IN SYRIA
REGARDING THE INCIDENTS OF THE ALLEGED USE OF CHEMICALS
AS A WEAPON IN MAREA, SYRIAN ARAB REPUBLIC,
ON 1 AND 3 SEPTEMBER 2015**

1. SUMMARY

- 1.1 This report sets out the findings of the work of the Fact-Finding Mission (FFM) of the Organisation for the Prohibition of Chemical Weapons (OPCW) following its investigation into the alleged incidents in Marea, the Syrian Arab Republic, on 1 and 3 September 2015.
- 1.2 On 1 and 2 September 2015, public sources broadcasted information on an alleged use of sulfur mustard in Marea, a town in northern Aleppo Governorate of the Syrian Arab Republic.
- 1.3 On 1 September 2015, the town of Marea was subject to shelling with both conventional munitions and projectiles filled with chemicals that fell in various locations and neighbourhoods in Marea, mostly in residential areas close to the field hospital. In some of the targeted locations a black substance was observed, and in others, a yellow powder was observed.
- 1.4 While carrying out the activities of the deployment relevant to the incident of 21 August 2015 in Marea,¹ the FFM received information from a witness about two incidents that occurred on 1 and 3 September 2015,¹ allegedly involving the use of toxic chemicals as weapons.
- 1.5 Since the publication of the Note by the Technical Secretariat (hereinafter "the Secretariat") entitled "Report of the OPCW Fact-Finding Mission in Syria Regarding Alleged Incidents in Marea, Syrian Arab Republic, August 2015" (S/1320/2015)² on the alleged incident of Marea on 21 August 2015, the FFM remained active in searching for witnesses and evidence related to the incidents that took place in September 2015 in Marea.
- 1.6 Based on further inquiries, the FFM confirmed that two incidents occurred: one on 1 September 2015, and another on 3 September 2015. It was also confirmed that several witnesses were present at the sites of the alleged incidents on 1 September 2015, and that other witnesses were present in Marea on 3 September 2015, but not at the sites of the incidents.

* Reissued in English for technical reasons.

¹ In the Note by the Secretariat S/1320/2015 (dated 29 October 2015), incidents were reported to have occurred on 1 and 4 September 2015 based on initial testimonies.

² Same as footnote 1.

- 1.7 In the first days of September 2015, hospital records indicated approximately 50 admissions related to the alleged incidents.
- 1.8 The FFM obtained information regarding the incidents that took place in Marea on 1 and 3 September 2015, through the following:
 - (a) testimonies provided by treating medical personnel, first responders, casualties, and witnesses;
 - (b) hospital records;
 - (c) videos, photographs, and files collected during interviews and obtained from non-governmental organisations (NGOs); and
 - (d) environmental samples from several sites of the incidents.
- 1.9 Between 28 September 2021 and 7 October 2021, the FFM conducted interviews with 12 witnesses and was able to confirm the presence of 10 of these witnesses in Marea at the time of the incidents on 1 and 3 September 2015. The descriptions of events by these witnesses and supporting material obtained by the FFM were found to be consistent.
- 1.10 The witnesses interviewed described two substances involved in the incidents, both having a “very bad”, “unpleasant”, “disgusting”, and “pungent” odour: a black to brown oily liquid and a yellow powder. Reportedly, both substances dispersed from projectiles **upon impact. The FFM did not find evidence of the use of both substances simultaneously at any given location.**
- 1.11 Consistent testimonies provided by medical staff, casualties, and witnesses, and the acute onset of similar signs and symptoms in a large number of people at the same time and location, followed by the development of blisters in a number of casualties—approximately 50—just hours after exposure, are indicative of a toxidrome characteristic of exposure to a vesicant agent.
- 1.12 The analysis of samples collected from the splatter of a black substance that persisted to date in several contaminated locations in Marea revealed the presence of thiodiglycol and thiodiglycol sulfoxide.
- 1.13 Taking into consideration the time that elapsed between the incidents in September 2015 and the collection of samples in 2021, the description of the black substance by witnesses and its odour, and the development of blisters in a number of casualties, the presence of thiodiglycol and its oxidation product, all together allow the FFM to establish that these compounds are the degradation products of 1.A.04 scheduled chemicals.³ The FFM did not obtain samples from locations where witnesses had seen the yellow powder. Therefore, the FFM is not in a position to identify the chemical composition of this powder.
- 1.14 Regarding the alleged use of toxic chemicals as a weapon on 1 September 2015 in Marea, the Syrian Arab Republic, all information obtained and analysed by the FFM provides reasonable grounds to believe that a vesicant chemical substance from 1.A.04 scheduled chemicals under the Chemical Weapons Convention (hereinafter “the Convention”) was used as a weapon.

³ [Sulfur mustards \(1.A.04 schedule chemicals\).](#)

- 1.15 The other incident occurred during the night of 3 September 2015 and the affected individuals displayed signs and symptoms similar to the casualties of the incident on 1 September 2015. As the casualties from the incident on 3 September 2015 were not available to be interviewed, the results of analysis of all available data obtained up until the issuance of this report did not allow the FFM to establish whether or not the chemicals were used as a weapon in the incident that took place in Marea, the Syrian Arab Republic, on 3 September 2015.
- 1.16 The FFM is grateful to all States Parties, individuals, witnesses, and other organisations for supporting its activities.

2. INTRODUCTION

- 2.1 This document contains the findings and conclusions of the FFM following its investigation into the alleged use of toxic chemicals as a weapon in Marea, in the Syrian Arab Republic, on 1 and 3 September 2015. The FFM's activities were conducted in accordance with the decisions of the OPCW Executive Council (hereinafter "the Council") EC-M-48/DEC.1 (dated 4 February 2015) and EC-M-50/DEC.1 (dated 23 November 2015), as well as other relevant Council decisions and the Director-General's authority to seek to uphold at all times the object and purpose of the Convention as reinforced by United Nations Security Council resolutions 2118 (2013) and 2209 (2015), as applicable to this investigation.
- 2.2 The FFM's terms of reference were mutually agreed upon by the OPCW and the Syrian Arab Republic through the exchange of letters between the Director-General of the OPCW Secretariat and the Government of the Syrian Arab Republic, dated 1 and 10 May 2014, respectively (Annex to the Note by the Secretariat S/1255/2015*, dated 10 March 2015). The terms of reference of the FFM were endorsed by States Parties in Council decisions EC-M-48/DEC.1 and EC-M-50/DEC.1 with express support for the continued work of the FFM in order to study all available information relating to allegations of use of chemical weapons in the Syrian Arab Republic.
- 2.3 Both the Council and the United Nations Security Council have called upon the FFM to study all available information relating to allegations of use of chemical weapons in the Syrian Arab Republic, including information provided by the Syrian Arab Republic and others.

3. BACKGROUND

- 3.1 In 2015, several events took place in the town of Marea and its neighbouring towns and villages. In this section, events occurring between April 2015 and September 2015 are presented to provide an overview of the situational context in the region for the period before, during, and after the incidents. This sequence of events was reported in public sources and was not subject to analysis by the FFM.
- 3.2 Several of Marea's neighbouring towns and villages in north-eastern Aleppo Governorate are mentioned in this section. Figure 1 provides an overview of these locations on the map.

FIGURE 1: TOWNS AND VILLAGES NEAR MAREA



- 3.3 The town of Marea had not been under the control of the Syrian Government⁴ since the beginning of the conflict in the Syrian Arab Republic. Several armed groups are present in Marea: Liwa al-Tawhid (the Tawhid Brigade) being one of the first armed groups formed, the leadership of which is comprised of the locals of Marea. Other armed groups included Al-Jabha Shamiya (the Levant Front), Islamic Safoua factions, and Liwa Al-Mootassim (Al-Mootassim Brigade). These armed groups operated under Marea Operations Room of the Military Council.⁵ Jabhat Al-Nusra (Al-Nusra Front) was also present in Marea until 9 August 2015, when it announced its withdrawal from the northern Aleppo front and ceded villages and fighting positions to the Al-Jabha Shamiya.⁶

⁴ <https://syria.liveuamap.com/en/time/30.09.2021>.

⁵ <https://eldorar.net/node/68012>.

⁶ <https://www.atlanticcouncil.org/blogs/syriasource/a-potential-ground-component-for-the-isis-free-zone/>.

- 3.4 On 7 April 2015, two car bombs exploded—one in Marea and another in the outskirts of the town—as the Islamic State in Iraq and the Levant (ISIL) sought to expand its reach to northern Aleppo. Heavy confrontations took place between ISIL fighters on one side, and armed groups and Jabhat Al-Nusra on the other side.⁷
- 3.5 On 31 May 2015, ISIL launched another offensive into northern Aleppo and took control of the town of Souran in the district of Azaz^{8,9} and the nearby villages of Al-Touqali and Al-Ball. Thereby, ISIL advanced to approximately 10 kilometres from the Bab Al-Salam border.¹⁰
- 3.6 On the same day, a military source reported that units of Syrian Armed Forces had eliminated armed group fighters and destroyed their vehicles in Aleppo and its countryside.¹¹ Six people were killed and others were injured in the air raid on Marea.¹²
- 3.7 In June 2015, ISIL further mobilised south towards Marea, which is considered a strategic town, as it lies along a supply route for armed groups between Aleppo and the border with Turkey. On 1 June 2015, confrontations between armed groups and ISIL took place at the frontlines of Souran to the north of Marea and in Um-Housh to the south of Marea. Armed groups regained control over the villages of Al-Ball, Um-Housh and Um Kura, while ISIL continued shelling Marea and other villages to the north of Souran.¹³ From 3 June 2015, ISIL advances past the town of Souran stalled.^{14, 15}
- 3.8 On 11 August 2015, ISIL launched a new offensive against armed groups in Marea and its surroundings. Suicide bombers from ISIL detonated four car bombs. These attacks took place after the village of Um-Housh came again under the control of ISIL, and two days after Jabhat Al-Nusra withdrew from the frontlines in northern Aleppo.¹⁶
- 3.9 On 21 August 2015, over the course of approximately 90 minutes, Marea was targeted with around 50 projectiles. A spokesman for Al-Jabha Shamiya reported that at least half of the artillery projectiles that landed randomly on different parts of the town contained “mustard”. One projectile fell inside one of the rooms of a house where later the same day, a family of four suffered from symptoms related to chemical exposure. The hospital in Marea received more than 50 patients presenting with symptoms of chemical exposure, including coughing, vomiting, severe itching, and blisters.¹⁷

⁷ <https://www.ndtv.com/world-news/clashes-explosions-as-islamic-state-seeks-expansion-in-north-syria-monitor-753125>.

⁸ https://reliefweb.int/sites/reliefweb.int/files/resources/aleppo_update_june_10.pdf.

⁹ <https://www.reuters.com/article/us-mideast-crisis-syria-turkey-idUSKBN0OG0HL20150531>.

¹⁰ <https://www.al-monitor.com/originals/2015/06/aleppo-north-islamic-state-rebels-regime-raids-cooperation.html>.

¹¹ <https://syrianfreepress.wordpress.com/2015/06/02/saa-reports/>.

¹² <https://www.radioalkul.com>.

¹³ <https://www.radioalkul.com>.

¹⁴ <https://www.swissinfo.ch>.

¹⁵ <https://www.alarabiva.net>.

¹⁶ <https://www.businessinsider.com/r-islamic-state-attacks-syrian-rebels-near-turkish-border-2015-8?international=true&r=US&IR=T>.

¹⁷ <https://www.nytimes.com/2015/08/25/world/middleeast/isis-suspected-of-chemical-attack-in-syria.html>.

- 3.10 Over the course of August 2015, over 3,000 families fled the northern countryside of Aleppo as ISIL advanced and attacked their towns and villages. Most of the civilians in Marea fled fearing heavy confrontations (vehicle-borne improvised explosive devices (VBIED), shelling with mortars, and projectiles filled with toxic chemicals^{18, 19}). By the end of August 2015, the Fatah Halab Operations Room (Conquest of Aleppo Operations Room) declared many towns and villages in the north of Aleppo Governorate military zones due to confrontations at the frontlines with ISIL.^{20, 21}
- 3.11 Between 3 and 10 September 2015, the FFM gathered information and evidence related to the incident that occurred on 21 August 2015, in which the family of four was exposed to toxic chemicals. The Secretariat issued its report²² and concluded “with 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 an infant”. The incident was later investigated by the OPCW-United Nations Joint Investigative Mechanism (United Nations Security Council resolution 2235 (2015)). The Mechanism issued its conclusion on the attribution of responsibility for this incident.²³
- 3.12 Around noon on 1 September 2015, more than 30 projectiles targeted residential areas in Marea from surrounding locations under the control of ISIL. Approximately half of these projectiles were reportedly filled with toxic chemicals and emitted an odour. Local sources said that the town was filled with a strong, unpleasant, “sewage”-like odour, that “a number of projectiles did not explode, and the substance released was either a black liquid or a greenish powder”.^{24, 25} Around 20 people suffered from suffocation, redness of the eyes, and headaches, and were transferred to the field hospital in Marea, with their clothes smelling of the same odour.^{26, 27, 28, 29}
- 3.13 Before midnight on 3 September 2015, ISIL continued attacking positions of armed groups in Marea and its surroundings. Fierce confrontations took place on several axes around Marea, mainly on the Sandaf-Marea axis and continued during the early hours of the following day. In addition, armed groups and factions in Marea destroyed a VBIED before it reached its target in the town. Other sources reported that ISIL had also targeted Marea with projectiles filled with toxic chemicals during this attack. Seventeen fighters

¹⁸ <https://www.al-monitor.com/ar/contents/articles/originals/2015/09/syria-aleppo-displaced-isis-attacks.html>.

¹⁹ <https://www.aksalser.com>.

²⁰ <https://www.enabbaladi.net/archives/44522>.

²¹ <https://twitter.com/MemetAkca/status/636974646542381056?s=03>.

²² https://www.opcw.org/sites/default/files/documents/2018/11/s-1320-2015_e.pdf.

²³ https://www.securitycouncilreport.org/atf/cf/%7B65BFCF9B-6D27-4E9C-8CD3-CF6E4FF96FF9%7D/s_2016_738.pdf.

²⁴ https://syrianobserver.com/news/29028/isis_unleashes_chemical_weapons_town_marea_aleppo_province.html.

²⁵ https://sn4hr.org/public_html/wp-content/pdf/arabic/isis_insults_the_Security_Council.pdf.

²⁶ <https://www.alsouria.net>.

²⁷ <https://twitter.com/homsmrfoataL/status/638712354805383168?s=03>.

²⁸ <https://baladi-news.com>.

²⁹ <https://www.enabbaladi.net/archives/43641>.

from ISIL were killed and others captured, while armed groups counted 20 fighters killed during this offensive.^{30, 31, 32}

- 3.14 Throughout September and the following months in 2015, offensives conducted by ISIL and counter-offensives of armed groups continued in Marea and its surroundings.^{33, 34}

4. PRE-DEPLOYMENT ACTIVITIES AND MISSION TIMELINE

- 4.1 Information collected from public sources indicated that on 1 September 2015, an alleged use of toxic chemicals as a weapon took place in Marea in the Aleppo Governorate.
- 4.2 While carrying out the activities of the deployment relevant to the allegation of 21 August 2015 in Marea, the FFM was informed of two other incidents. According to the source of information, the incidents occurred on 1 and 3 September 2015,³⁵ and allegedly involved the use of toxic chemicals as weapons.
- 4.3 In light of the information revealed during the interviews conducted in September 2015 on the alleged use of a chemical as a weapon on 21 August 2015 in Marea, the FFM team further expanded its search of potential interviewees and possible evidence to include alleged incidents that occurred in September 2015.
- 4.4 While the FFM was informed of the incidents in September 2015, it focused its activities mainly on the incident of 21 August 2015, in accordance with the mission's mandate, as the main evidence the team was able to collect pertained to the incident of 21 August 2015. The FFM had access to two casualties, hospital personnel, and biomedical samples from casualties presenting with suspected exposure to sulfur mustard. No environmental samples or remnants were available at the time of the investigation of the incident in Marea on 21 August 2015.
- 4.5 In its report on the use of chemical weapons in Marea on 21 August 2015 (S/1320/2015), the FFM also mentioned incidents that took place in September of the same year, but did not issue any conclusions on these initial findings.
- 4.6 Between January and June 2021, the FFM was able to collect preliminary information on available witnesses, samples, and material related to the incidents of alleged use of toxic chemicals in Marea in September 2015.
- 4.7 Table 1 reflects the period of time during which mission activities took place. The activities started with the initial information received during the deployment of the FFM in September 2015 in relation to the incident of 21 August 2015, followed by an open-source search for additional information. The report drafting began in October 2021 and lasted to the date of publication of this report.

³⁰ <https://www.enabbaladi.net/archives/44046>.

³¹ <http://www.shaam.org>.

³² <https://24.ae/article/183929/>.

³³ <https://www.syriahr.com>.

³⁴ <https://www.zamanalwsl.net/news/article/64957>.

³⁵ In the Note by the Secretariat S/1320/2015, incidents were reported to have occurred on 1 and 4 September 2015 based on initial testimonies.

TABLE 1: MISSION TIMELINE

Date	Activities
7 September 2015	The FFM obtained first-hand information during an interview process on other incidents in September 2015 allegedly involving the use of toxic chemicals as a weapon.
After 7 September 2015	The FFM conducted open-source research.
September 2015 to January 2021	The FFM searched for witnesses, evidence, and material pertaining to the allegation.
January 2021 to June 2021	The FFM identified witnesses, evidence, and material pertaining to the allegation.
June 2021	The FFM obtained access to authentic digital material.
24 September 2021	The FFM collected environmental samples.
28 September to 7 October 2021	The FFM conducted 12 in-person interviews.
Mid-October 2021	The FFM began drafting its report.
October 2021	Off-site analysis of the collected samples conducted by OPCW designated laboratories.
October 2021	The FFM team analysed information and material gathered during the interviews.

5. MISSION ACTIVITIES

Methodological considerations

- 5.1 The FFM followed the same general methodological approach outlined in previous FFM reports, adhering to the most stringent protocols throughout its activities.
- 5.2 The FFM collected information related to the incidents in Marea, using its own equipment and ensuring the chain of custody and witness identity protection throughout its deployments in accordance with the OPCW standard operating procedures, work instructions, and guidelines.
- 5.3 Interviews were conducted by inspectors trained and proficient in interviewing techniques, following the procedures set out in the OPCW work instructions. Prior to commencing the interviews, the process was explained to the interviewees, with emphasis on the fact that with the consent of the interviewee, the interviews would be recorded using audio, video, or both. After confirming that the process had been understood, interviewees were requested to sign a consent form. The interview process used the free-recall approach, with follow-up questions used to elicit information of potential evidentiary value and to clarify aspects of the testimony.

- 5.4 Available open-source materials were used primarily for planning activities, but also for comparative purposes with material directly gathered by the FFM during the course of the investigation.
- 5.5 The FFM examined all the data collected, both individually and combined. The conclusions of this report are based on an analysis of all evidence taken as a whole: interviews, laboratory analysis of environmental samples, supporting material gathered during the interview process, and subsequent cross-reference and corroboration of the evidence.

Activities

- 5.6 The activities of the FFM were conducted in accordance with OPCW guidelines as well as standard operating procedures and work instructions as set out in Annex 1, and included the following:
 - (a) conducting and analysing interviews with medical staff, casualties, first responders, and witnesses of the alleged chemical incidents in Marea;
 - (b) reviewing and analysing photographs, videos, files, and records gathered by the FFM;
 - (c) conducting laboratory analysis of collected samples; and
 - (d) reviewing open-source material.
- 5.7 The FFM has pursued further available information in the possession of NGOs including and not limited to Chemical Violations Documentation Center of Syria (CVDCS) and Syria Civil Defence (SCD, also known as “White Helmets”); Aleppo Media Center (AMC); potential witnesses; as well as in-depth research into public information.

6. ACCESS TO THE SITE AND RELATED CONSIDERATIONS

- 6.1 The safety and security of individuals involved in any FFM deployment are of the utmost importance.
- 6.2 Considering the continuous military activities and the volatile situation in the surroundings of Marea at the time of the incidents, an FFM deployment to the site(s) without crossing confrontation lines was deemed not possible.
- 6.3 Up to the date of the issuance of this report, the town of Marea is still not under the control of the Government of the Syrian Arab Republic. The Free Syrian Army and other armed groups are, at this time, in control of Marea and the neighbouring villages located in the north, northwest, and northeast of Marea. Kurdish armed groups are also present along the western side of Marea.
- 6.4 Taking into consideration the aforementioned circumstances, a visit to the site(s) in Marea allegedly targeted with toxic chemicals in September 2015 was excluded for security and safety reasons.

7. FACTUAL FINDINGS

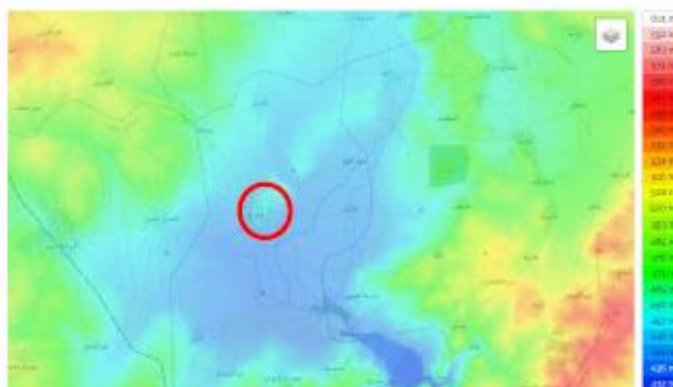
Incident site: Marea

- 7.1 The Aleppo Governorate is situated in northern Syria, bordering the Hama and Idlib Governorates to the south and south-west, respectively, the Al-Raqqa Governorate to the east, and Turkey to the north.

FIGURE 2: LOCATION OF THE ALEPPO GOVERNORATE IN SYRIA



- 7.2 Marea is a town in the northern part of the Aleppo Governorate. It is located 35 kilometres to the north of the city of Aleppo, and 25 kilometres to the south of the Syrian-Turkish border. Nearby towns include Tall Refaat to the west, Azaz to the north-west, and Al-Bab to the east (Figure 3).
- 7.3 According to the Syria Central Bureau of Statistics, Marea had a population of 16,904 in the 2004 census.
- 7.4 Since the beginning of the Syrian conflict, the town of Marea has not been under the control of the Syrian Government. Members of armed groups present in Marea are mostly locals of the town. At the time of the incidents in September 2015, ISIL was present in a number of towns and villages situated to the north, east, and south-east of Marea. Kurdish forces were present as well along the western side of Marea (i.e., Tall Refaat, Sheikh Issa). The incident on 1 September 2015 reportedly took place in residential areas in Marea. Over 100 projectiles fell on the town, among which approximately 20 were reported to be filled with toxic chemicals.
- 7.5 Limited information was reported in public sources regarding the incident that occurred on 3 September 2015 (Annex 1).

FIGURE 3: LOCATION OF MAREA IN THE ALEPPO GOVERNORATE**FIGURE 4: TOPOGRAPHY OF MAREA AND THE SURROUNDING VILLAGES**

- 7.6 Figure 4 is a presentation of the topography of Marea and its surrounding villages. The whole landscape can be described as a plain with no significant elevations in or around the town.
- 7.7 The FFM reviewed the meteorological conditions for both dates of the alleged incidents in September 2015 in Marea based on publicly available sources. Only meteorological conditions on 1 September 2015 are shown in Table 2³⁶ as an example. The FFM is aware that these meteorological data may slightly vary from a public source to another. Most sources refer to the main city in a Governorate—Aleppo city in this case. Therefore, data are more indicative of a general forecast in the area than a precise account of the exact weather conditions at the time of the incident.

TABLE 2: METEOROLOGICAL CONDITIONS IN MAREA

Tuesday, 1 September 2015								
Max: 35°C Min: 21°C Sunrise: 06:02 AM Sunset: 07:00 PM								
Moonrise: 08:49 AM Moonset: 08:53 PM Phase: Full Moon Illumination: 97 %								
Time	Temperature	Wind (km/h)	Gust (km/h)	Rain	Humidity %	Cloud %	Pressure (mb)	Visibility
00:00	22	12 from WNW	19	0.0 mm	78	4	1008	Excellent
03:00	21	9 from WNW	16	0.0 mm	81	15	1008	Excellent
06:00	27	10 from WNW	12	0.0 mm	49	0	1008	Excellent
09:00	33	11 from W	12	0.0 mm	24	1	1007	Excellent
12:00	35	5 from W	17	0.0 mm	19	1	1006	Excellent
15:00	32	18 from W	22	0.0 mm	26	1	1006	Excellent
18:00	26	13 from W	20	0.0 mm	52	1	1007	Excellent
21:00	24	2 from WNW	18	0.0 mm	66	86	1008	Excellent

Collected informationInterviews

- 7.8 In fulfilment of its mandate to examine all available information relating to allegations of use of chemical weapons, the FFM conducted in-person interviews with witnesses who consented to be interviewed.
- 7.9 Interviews were conducted by inspectors trained and proficient in interviewing techniques, following the strict procedures set out in the OPCW's working instructions. To guarantee the independence of the interview process, only the witness and the FFM personnel were present in the room during the interviews.
- 7.10 Between 28 September 2021 and 7 October 2021, the FFM conducted 12 interviews. A breakdown of the profiles of interviewees is provided in Table 3 below. Of the 12 interviewees, two were medical staff, one was sampler, and nine were witnesses. The identity of every witness is verified before signing the consent form prior to the interview.

TABLE 3: PROFILES OF INTERVIEWEES

	Interviewees	Primary Casualties	Female	Male
Medical support staff/Nurse	2	0	0	12
Witness	9	2		
Sampler	1	0		
Total	12	2	0	12

- 7.11 The following is a composite summary of the statements from witnesses interviewed by the FFM.
- 7.12 All witnesses stated that the town of Marea was besieged from three sides: north, east, and south. According to their recollection, ISIL was present in neighbouring towns and villages in these three directions. The only access to the town was from the west, through the city of Azaz.
- 7.13 At the time of the incident, almost 90% of the civilians and internally displaced people living in Marea had fled the town to camps and neighbouring villages. Fighters, originally from Marea, were present in the town and at confrontation lines. Only a few families remained in Marea.
- 7.14 According to witness testimonies, at approximately noon on 1 September 2015, the town of Marea was subjected to shelling with both conventional munitions and projectiles filled with chemicals. Several witnesses indicated that projectiles were fired from the eastern side of Marea where most villages were under the control of ISIL.
- 7.15 When interviewed by the FFM, a number of witnesses recalled that on 1 September 2015, approximately 20 projectiles filled with chemicals fell in various locations and neighbourhoods in Marea, mostly in residential areas close to the field hospital as per their recollection. Few projectiles fell in empty areas or in agricultural areas.
- 7.16 Figure 5 represents a compilation of the locations reported by witnesses in relation to the incidents on 1 and 3 September 2015. The red markings on Figure 5 indicate projectiles filled with toxic chemicals in general, according to witnesses. The yellow markings indicate locations where the yellow powder was observed, and the black and white markings indicate locations where the black oily liquid was observed.

FIGURE 5: LOCATIONS WHERE PROJECTILES FILLED WITH CHEMICALS WERE REPORTED



■ *Projectiles with toxic chemicals* ■ *Yellow powder* ⊙ *Black liquid*

- 7.17 Several witnesses stated that projectiles were fired by Gvozdika³⁷ artillery, mortars, and tanks. One witness mentioned that he saw “122” marked on one of the munitions, in reference to the calibre.
- 7.18 According to witnesses, two types of substances were observed. Some projectiles released a black oily liquid, while other projectiles released a yellow powder.
- 7.19 Several witnesses mentioned that upon impact, the projectiles did not explode and released a black liquid similar to tar or used engine oil. Other witnesses stated that the splatter of the black substance on the walls or in the streets had a diameter of 1.5 to 2 metres. The quantity of the black liquid leaked from a projectile was estimated by one witness to be in the range of 1.5 to 2 litres. A number of witnesses stated that the black liquid was mustard, or that they had been told it was mustard.
- 7.20 Other witnesses described a yellow powder at impact points. One witness visited locations where projectiles fell on 1 September 2015 and indicated three locations where he saw the yellow substance (Figure 5). Two other locations were shown where the witness saw the black oily substance (Figure 5).

³⁷

Gvozdika is a well-known term used for self-propelled howitzers in general.

- 7.21 Witnesses recounted that they tried to wash the black substance at several impact locations and that it was very hard to remove with water. Other witnesses stated that they cleaned the contaminated walls in their houses when they returned, two or three months after the incident. The black substance persisted, and they had to scrub the walls and paint them. In some other locations, witnesses reported that the owners of impacted houses carried out construction work and covered contaminated walls and structures.
- 7.22 Other witnesses described projectiles filled with a greenish yellow powder that spread after the impact of the munition. A witness estimated the diameter of the yellow substance spread at 2 metres, with the yellow powder being more concentrated the closer it got to the impact point.
- 7.23 The powder spread and remained suspended in the air for a period of time after the impact of the projectile.
- 7.24 Both the black liquid and the yellow powder were described by witnesses as having a bad, pungent, and/or disgusting smell. Other witnesses explained that the smell could not be tolerated or caused nausea and vomiting. Several witnesses described the smell as very similar to garlic or rotten garlic.
- 7.25 Witnesses recalled that the odour spread across the town on the day of the incident on 1 September 2015. Several witnesses reported that the smell persisted for days after the incident for both types of chemical substances.
- 7.26 First responders stated that casualties presented with symptoms including suffocation, redness of the eyes, runny nose, vomiting, and severe burns. They also stated that the burns would result in blisters at a later stage.
- 7.27 Affected casualties were transported to the field hospital in Marea, where a decontamination tent had been installed after the chemical incident of 21 August 2015. Casualties were undressed and washed with water prior to entering the hospital for further treatment. Their contaminated clothes were disposed of in plastic bags and burned later.
- 7.28 One witness provided information, photographs, and a video of a person who was affected while moving a projectile that leaked a black substance onto his pants. The casualty came to the field hospital seeking treatment as he displayed redness on his thigh, which hours later developed into blisters.
- 7.29 One casualty, who was also a first responder, explained to the FFM that he came into contact with the black substance, which penetrated his clothes. The casualty suffered from skin irritation in the area that came into contact with the substance, including redness, and severe itchiness. The casualty mentioned that blisters appeared hours later in the same spots.
- 7.30 One medical staff reported to the FFM that another incident occurred after sunset on 3 September 2015. The incident was smaller in scale than the incidents on 21 August 2015 and 1 September 2015. The witness provided hospital records of casualties.

- 7.31 Eight casualties were reported in relation to the incident on 3 September 2015. Most casualties had mild symptoms, including runny nose, lacrimation, and itchiness. No skin burns or blisters were observed.
- 7.32 The same medical staff estimated that only two projectiles were filled with chemical substances. One projectile landed in a northern residential neighbourhood in Marea. The witness did not see any of the munitions that landed on 3 September 2015.
- 7.33 Interviewed rescuers indicated that projectiles filled with chemicals were removed from impact locations and buried at random sites to prevent further exposure.
- 7.34 According to the testimonies gathered, the weather at the time of the incidents was hot with clear visibility, with no clouds or wind.

Samples

- 7.35 Due to the circumstances detailed in Section 7 of this report, the FFM was not present during the collection of environmental samples.
- 7.36 According to witness accounts, the black substance persisted even after washing with water in several locations, and the splatter of the black substance could be still seen as at the date the samples were collected, on walls in several houses, as well as in the streets.
- 7.37 The FFM verified this information and sought opportunities to collect samples from the splatter that could provide information about the substance used in the incidents on 1 and 3 September 2015.
- 7.38 However, not many residents in Marea allowed sampling; in many instances, any attempt to collect a valuable sample from these points would have caused damage to their properties.
- 7.39 Samples were collected in Marea from a variety of incident locations by SCD. The collection and the sealing of the samples were documented using video and still photography, as well as Global Positioning System (GPS) data. The documentation and digital photo/video files provided, subsequently assessed through metadata and geolocation, enabled the FFM to corroborate the sampling locations as part of the sites of the incidents. Figure 6 includes photographs and descriptions of several sampling points.
- 7.40 No samples were collected from locations where witnesses stated they had seen the yellow powder. Therefore, the FFM is not in a position to identify the chemical composition of this powder.

FIGURE 6: SAMPLING POINTS IN MAREA

A: Splatter of black substance on an inside wall	B: Swab from black substance from an inside wall
	
C: Sample of plaster from an inside wall	D: Black substance stain on an outside wall
	
E: Swab from a black substance stain on an outside wall	F: Sampling of asphalt with a black substance stain
	

- 7.41 On 24 September 2021, the FFM received samples, including the samples visible in Figure 6 (Annex 3, Table A3.3). The FFM also received information and details about the sampling points.
- 7.42 The FFM verified the seals on sample containers during the handover procedure, applied OPCW seals to the samples to ensure the chain of custody, and packed them for transportation. On 25 September 2021, the samples were transferred to the OPCW Laboratory (Table 4).

- 7.43 Two OPCW designated laboratories analysed the samples; the scope of analysis covered scheduled chemicals under the Convention, precursors and degradation products, and the presence of explosives.

TABLE 4: LIST OF SAMPLES, THEIR CODES, AND DESCRIPTIONS

No.	Sample Code	Sample Description
1	SLS14F1	Asphalt sample
2	WS06F2	Cotton swab from outside wall
3	WB07	Blank cotton swab
4	WB11	Blank isopropanol wipe (70%)
5	SLS14F2	Asphalt sample
6	WS10	Blank – combination of isopropanol wipe and cotton swab
7	SLS12	Plaster from outside wall
8	SLS13	Plaster from inside wall where WS08 sample swab was taken
9	WS06F1	Wet wipe swab taken with a similar kit to the one used in WB05
10	WB05	Blank – Wet wipe kit unused
11	WS08	Wet wipe taken from inside wall with a similar kit to the one used in WB05
12	WS09	Cotton swab from inside wall (same location as WS08)

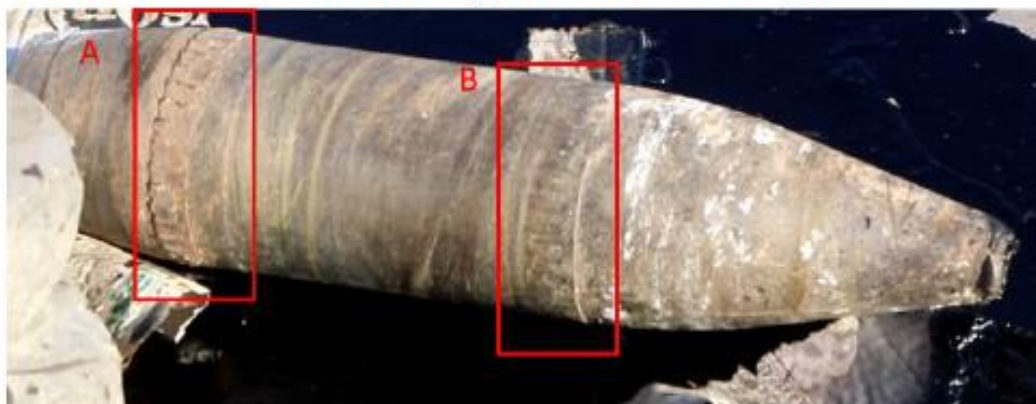
- 7.44 The results of these analyses showed that samples SLS13 and WS06F1 contain thiodiglycol and thiodiglycol sulfoxide, which is an oxidation product of thiodiglycol.
- 7.45 Thiodiglycol is a precursor of scheduled chemicals and is listed under 2.B.13 in the list of scheduled chemicals under the Convention. It is also a degradation product of 1.A.04 scheduled chemicals listed in the Convention.
- 7.46 Samples SLS13 and WS06F1 were collected at two different locations in Marea, according to GPS data and photographs.
- 7.47 The analysis of the other samples listed in Table 4 did not provide for the identification of any compounds according to the scope of the analysis.

The munition and impact locations

- 7.48 On 19 June 2021, the FFM obtained videos of one artillery shell used in the incident of 1 September 2015 and confirmed through metadata, geolocation, and identification of the witness who was present and made video recordings, that the videos were recorded in Marea on the afternoon of 1 September 2015.

FIGURE 7: ARTILLERY SHELL USED ON 1 SEPTEMBER 2015 IN MAREA

- 7.49 The impact point was on a flat roof of a residential house in Marea. Videos show a dark coloured artillery shell surrounded by a black liquid (Figure 7). Witnesses stated that the munition was “half a metre or slightly longer”.
- 7.50 The observed design of the munition matches with that of a military grade artillery shell. The FFM was not able to examine the munition to confirm the calibre.
- 7.51 There is no evidence that there was a well-defined impact point on the roof or an explosion or associated damage related to the aforementioned munition.

FIGURE 8: ROTATING BAND (A) AND BOURRELET (B)

- 7.52 The condition of the rotating band (Figure 8-A) and bourrelet (Figure 8-B) indicate that the projectile had been fired.

FIGURE 9: THE PROJECTILE FROM VARIOUS ANGLES

- 7.53 There is no fuse visible on the projectile. The top appears to be capped as visible in Figure 9-A. Figure 9-B shows the base of the projectile, still undamaged.
- 7.54 The roof of the building is visible in Figure 9-C, with the black liquid spread around the munition, most likely from its top.
- 7.55 The FFM also obtained video recordings filmed on 2 September 2015 showing an additional location where, allegedly, projectiles filled with toxic chemicals had made impact (Figure 10).

FIGURE 10: AN ADDITIONAL LOCATION

- 7.56 The munitions are not visible in the videos; however, it is possible to see what appears to be the splatter on the walls of the house under construction (Figure 10). According to witnesses, the munitions were present in the house and were retrieved and disposed of before the video was taken.
- 7.57 The exact location of the house has been identified and confirmed by witnesses. However, the FFM did not receive any samples from this location because the house had been renovated and any attempts to collect a valuable sample from this point would have been impossible without causing damage.

Epidemiology and toxicology

- 7.58 The FFM interviewed medical personnel, first responders, witnesses, and casualties. The FFM also analysed hospital records, videos, and photographic evidence.

Background of the field hospital

- 7.59 The field hospital in Marea became operational on 21 September 2012. The hospital comprises a four-bed emergency room where patient triage is conducted, an X-ray imaging room, a laboratory, a staff break room, two operation rooms, two wards, and one computer tomography (CT) scan room.
- 7.60 When the confrontation lines became close to the hospital, doctors, operating room, and laboratory personnel were transferred to another, safer, hospital. Only emergency room nurses and evacuation guards stayed at the field hospital. During ISIL attempts to take control over Marea in late August 2015, the hospital remained closed to civilians and reopened on 2 September 2015.

Casualty distribution

- 7.61 Hospital records from the field hospital indicate that a total of 51 casualties were admitted from 3 to 5 September 2015. All were diagnosed with “chemical irritation.” Of these 51 casualties, 45 were male, and six were female. Forty were adults and 11 were children. The breakdown for the individual days on which the various victims were admitted is as follows.
- (a) 3 September 2015: 22 casualties, 21 male and one female, 19 adults, and three children;
 - (b) 4 September 2015: 16 casualties, all male, 15 adults, and one child; and
 - (c) 5 September 2015: 13 casualties, eight male and five female, six adults, and seven children.
- 7.62 Casualties came from most neighbourhoods in Marea, and the targeting appeared random to hospital staff. Since Marea was on the frontlines, most children and women were already displaced outside Marea.

Decontamination and initial treatment

- 7.63 After the incident on 21 August 2015, the field hospital received and installed a decontamination tent in which disrobing, securing contaminated clothing, washing, and dressing or covering with towels before moving casualties to the emergency room were

performed. Two hospital staff wearing protective coveralls, gloves, and masks removed the contaminated clothes from the casualties. Clothing was secured in black plastic bags and put in a special bin. Casualties were then washed with water; no decontamination solution was used. Casualties were given towels and disposable gowns, and sent to the emergency room.

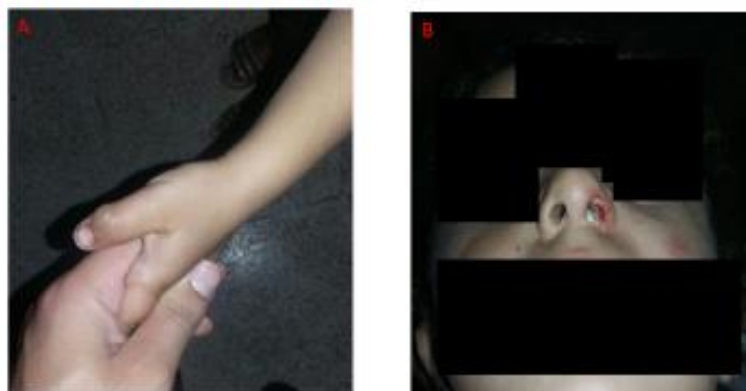
- 7.64 Casualties arrived at the hospital via both Civil Defence vehicles and personal means. No ambulance service was available at the hospital.
- 7.65 Four rescuers were injured while responding to the incident. Their symptoms included loss of consciousness, lacrimation, runny nose, shortness of breath, headache, blistering, and severe burns.

Signs, symptoms, and triage

- 7.66 Casualties were triaged in the emergency room as follows:
 - (a) MILD: lacrimation (tearing) only, or pruritus (itchiness) only;
 - (b) MODERATE: displaying two or three symptoms at the same time; and
 - (c) SEVERE: shortness of breath, rhinorrhoea (runny nose), pruritus, erythema (red skin), burns or blisters, vomiting, or the presence of all signs and symptoms together.
- 7.67 Staff reported being accustomed to treating trauma, but these casualties did not present traumatic injuries; they were similar to the casualties received in August 2015 following an incident involving a chemical agent. The casualties from incidents that occurred on 21 August 2015, and 1 and 3 September 2015 presented with redness of the eyes and skin, nausea, runny nose, burns, and blisters.
- 7.68 There were reportedly two substances that casualties were exposed to: a black liquid and a yellow powder. During the initial stage of triage in the emergency room, hospital staff could not distinguish between those casualties reported to be affected with the yellow powder and those affected with the black liquid.
- 7.69 Severe cases were reported to be at the site of the incident when it occurred. Individuals who went to impacted areas after the incidents were mildly affected.
- 7.70 After being in contact with the substance, casualties displayed itchiness and redness of the skin. It took from several hours to a day for blisters to develop. The fluid in the blisters of the patients looked darker, yellower, and different from blisters caused by hot water or oil burns. The conditions of the casualties lasted three to four days.
- 7.71 Medical staff reported that one casualty had burns (Figure 11-A) followed by blisters (Figure 11-B) on a leg after carrying an unexploded ordnance that leaked a black liquid onto the leg. The casualty was brought to the hospital several times for treatment.
- 7.72 One casualty, who is also a first responder, when interviewed by the FFM, stated that he came into contact with the black substance, which penetrated his clothes. The casualty suffered from skin irritation in the area that came into contact with the substance, including redness, and strong itchiness. Blisters appeared hours later.

FIGURE 11: CASUALTY AFFECTED ON THE THIGHS

- 7.73 Other casualties were affected by vapours of the substance; a child, exposed on 1 September 2015, suffered from blisters on the hand (Figure 12-A), a runny nose, and irritation of the nostrils (Figure 12-B). The child was referred to the hospital for treatment on 3 September 2015, according to the field hospital admission log and the treating physician.

FIGURE 12: EXPOSED CHILD

- 7.74 Another casualty experienced the shelling on 1 September 2015, but was not exposed at the time. The casualty returned home on 2 September 2015 to clean the house. On 3 September 2015, the same person developed blisters and pain and went to the hospital for treatment.
- 7.75 At least two families were affected by the yellow powder, and two casualties were identified as being affected by the black liquid, which resulted in burns and blisters on their legs.

Treatment

- 7.76 Emergency room staff used the following treatment protocol for the different casualty categories:
- (a) MILD: Lacrimation was treated with saline eye wash. For pruritus and allergic reaction, the treatment was an injection of antihistamine³⁸ and corticosteroids.³⁹
 - (b) MODERATE: Treatment was administered according to symptoms.
 - (c) SEVERE: Shortness of breath was treated with hydrocortisone and oxygen. Patients with blisters were administered burn treatment and were bandaged. Nausea and vomiting were treated with an antiemetic.⁴⁰
- 7.77 Burns and blisters were washed and cleaned with antiseptics, burn cream was applied, and patients presenting with these conditions were bandaged. Casualties were not allowed to burst or remove the skin from the blisters or the liquid. For the first one or two days, blisters would burst spontaneously, and the fluid inside would saturate the bandage. For three or four days, up to one week, bandages were changed without removing the skin of the blister.
- 7.78 Mild casualties were treated according to the capacities of the field hospital in the emergency room and were released within two to three hours or the following day. Those casualties presenting with shortness of breath remained hospitalised.
- 7.79 For the incident that took place on 3 September 2015, there was a maximum of eight mild casualties. Symptoms included runny nose, lacrimation, itching, and possibly one casualty experienced shortness of breath. A number of casualties arrived at the hospital during the night and were admitted on 4 September 2015 according to the records reviewed by the FFM.

Analysis of digital files collected by the FFM

- 7.80 The FFM obtained from witnesses videos and still photographs relevant to the incidents.
- 7.81 The FFM analysed the videos and photographs to ascertain their authenticity and assess their validity as corroborative information. The analysis involved, *inter alia*, metadata, geolocation, witness accounts, and the signs and symptoms of possible chemical exposure.
- 7.82 The team collected a total of 52 photographs, 30 videos, one Excel file, and three links. Of the collected photographs and videos, 34 had metadata consistent with witness accounts.
- 7.83 The remaining 18 photographs registered inaccurate times and dates. However, the content of the photographs corroborated witness accounts.

³⁸ Antihistamines are administered to relieve the symptoms of runny nose, watery eyes, and itching of the nose and throat.

³⁹ Corticosteroids are used to treat inflammation in the airways. Corticosteroids are a class of drug that lowers inflammation in the body. They are used to ease swelling, itching, redness, and allergic reactions. They are often used to treat conditions such as asthma.

⁴⁰ Antiemetics are used to reduce nausea and vomiting, but can also help relieve allergic conditions such as rashes, itching, and runny nose. They also have sedative and analgesic properties.

8. CONCLUSIONS

- 8.1 The conclusions of the FFM on any given allegation are the result of the combination, consistency, and corroboration of evidence gathered as a whole throughout the investigation, and are not based on isolated evidentiary elements. This report sets out the findings of the FFM's investigation into the alleged incidents in Marea, the Syrian Arab Republic, on 1 and 3 September 2015.
- 8.2 While carrying out the activities of its deployment relevant to the allegation of 21 August 2015 in Marea, the FFM became aware of two incidents that occurred on 1 and 3 September 2015, which allegedly involved the use of toxic chemicals as weapons.
- 8.3 The FFM obtained information about the incidents that took place in Marea on 1 and 3 September 2015 through the following:
 - (a) testimonies provided by treating medical personnel, first responders, casualties, and witnesses;
 - (b) hospital records;
 - (c) videos, photographs, and files collected during interviews and obtained from NGOs; and
 - (d) environmental samples from several locations associated with the incidents.
- 8.4 The FFM confirmed that two incidents occurred: one on 1 September 2015 and another on 3 September 2015; several witnesses were present at the sites of the incident on 1 September 2015; and other witnesses were present in Marea on 3 September 2015, but not at the site of the incident.
- 8.5 Between 28 September 2021 and 7 October 2021, the FFM conducted interviews with 12 witnesses and was able to confirm the presence of 10 of these witnesses in Marea at the time of the incidents on 1 and 3 September 2015. Descriptions of the events by these witnesses and supporting material obtained by the FFM, including hospital records, were consistent.
- 8.6 The witnesses interviewed described two substances involved in the incidents, both having a "very bad", "unpleasant", "disgusting", and "pungent" odour: a black to brown oily liquid and a yellow powder. Reportedly, both substances dispersed from projectiles upon impact. The FFM did not find evidence of the use of both substances simultaneously at any given location.
- 8.7 In the first days of September 2015, hospital records indicated approximately 50 admissions related to the incidents. Consistent testimonies provided by medical staff, casualties, and witnesses, and the acute onset of similar signs and symptoms in a large number of people at the same time and location, followed by the development of blisters in a number of casualties—approximately 50—just hours after exposure are indicative of a toxidrome characteristic of exposure to a vesicant agent.

- 8.8 The analysis of samples collected from the splatter of a black substance that remains to date in several contaminated locations in Marea revealed the presence of thiodiglycol and thiodiglycol sulfoxide.
- 8.9 Taking into consideration the time that elapsed between the incidents in September 2015 and the collection of samples in 2021, the description of the black substance by witnesses and its odour, the development of blisters in a number of casualties, and the presence of thiodiglycol and its oxidation product, all together allow the FFM to establish that these compounds are the degradation products of 1.A.04 scheduled chemicals.⁴¹ The FFM did not obtain samples from locations where witnesses had seen the yellow powder. Therefore, the FFM is not in a position to identify the chemical composition of this powder.
- 8.10 Regarding the alleged use of toxic chemicals as a weapon on 1 September 2015 in Marea, the Syrian Arab Republic, all information obtained and analysed by the FFM provides reasonable grounds to believe that a vesicant chemical substance from 1.A.04 scheduled chemicals to the Convention was used as a weapon.
- 8.11 The other incident occurred during the night of 3 September 2015 and the affected individuals displayed signs and symptoms similar to the casualties of the incident on 1 September 2015. As the casualties from the incident on 3 September 2015 were not available to be interviewed, the results of analysis of all available data obtained up until the issuance of this report did not allow the FFM to establish whether or not the chemicals were used as a weapon in the incident that took a place in Marea, the Syrian Arab Republic, on 3 September 2015.
- 8.12 According to operating paragraphs 10 and 12 of the decision of the Conference of the States Parties entitled “Addressing the Threat from Chemical Weapons Use”, C-SS-4/DEC.3 (dated 27 June 2018), “[t]he Secretariat shall preserve and provide information to the investigation mechanism established by the United Nations General Assembly in resolution 71/248 (2016), as well as to any relevant investigatory entities established under the auspices of the United Nations”.

Annexes (English only):

- Annex 1: Reference Documentation
- Annex 2: Open Sources
- Annex 3: Information Collected by the FFM

⁴¹ Sulfur mustards (1.A.04 schedule chemicals).

Annex 1

REFERENCE DOCUMENTATION

	Document Reference ⁴²	Full Title of Document
1	QDOC/INS/SOP/IAU01	Standard Operating Procedure for Evidence Collection, Documentation, Chain-Of-Custody and Preservation During an Investigation of Alleged Use of Chemical Weapons
2	QDOC/INS/WI/IAU05	Work Instruction for Conducting Interviews During an Investigation of Alleged Use
3	QDOC/INS/SOP/IAU02	Standard Operating Procedure Investigation of Alleged Use (IAU) Operations
4	QDOC/INS/SOP/GG011	Standard Operating Procedure for Managing Inspection Laptops and Other Confidentiality Support Materials
5	QDOC/LAB/SOP/OSA2	Standard Operating Procedure for Off-Site Analysis of Authentic Samples
6	QDOC/LAB/WI/PT04	Work Instruction for the Reporting of the Results of the OPCW Proficiency Tests
7	QDOC/LAB/WI/CS01	Work Instruction for Handling of Authentic Samples from Inspection Sites and Packing Off-Site Samples at the OPCW Laboratory
8	QDOC/LAB/WI/CS03	Work Instruction FOR Documentation, Chain of Custody and Confidentiality for Handling Off-Site Samples at the OPCW Laboratory
9	QDOC/LAB/WI/OSA3	Work Instruction for Chain of Custody and Documentation for OPCW Samples On-Site
10	QDOC/LAB/WI/OSA4	Work Instruction for Packing of Off-Site Samples

⁴²

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

Annex 2

OPEN SOURCES⁴³

Open-Source Internet Links Related to the Incident in Marea in September 2015	
1.	https://twitter.com/rwabemedia/status/638815378811002880?t=0LrVuOptAfEYz5kv rYeRgg&s=03
2.	https://twitter.com/SoutRaya/status/639016718057275392?t=ckZQe2DIDgqBdDewb KngBxKl42uynv7gTze6zTAy09A&s=03
3.	https://twitter.com/WaseelaTV/status/638997500460986368?t=MdM-NqjjQJ1E54hdMeEZxA&s=03
4.	https://www.twitlonger.com/show/n_1sncncl?s=03
5.	https://twitter.com/amera_alarab/status/638966726823022592?t=VE_OVaMRoUohb k9iIUc45g&s=03

⁴³ Links were active as of August 2016.

Annex 3

INFORMATION COLLECTED BY THE FFM

The tables below summarise the list of physical evidence collected from various sources by the FFM. It is split into electronic evidence stored in electronic media storage devices such as USB sticks and micro-SD cards, hard-copy evidence, and samples. Electronic files include audio-visual captions, still images, and documents/records. Hard-copy files consist of various documents, including drawings made by witnesses.

TABLE A3.1: ELECTRONIC DATA COLLECTED BY THE FACT-FINDING MISSION

Entry number	Assigned Code		
1	1575		
File names			
mare011021.xlsx	garmin 4k\virb0073.thm	4m5a9768.jpg	iphone\img_6894.heic
garmin 4k\viber2021.mp4	garmin 4k\virb0074.glv	4m5a9769.jpg	iphone\img_6895.heic
garmin 4k\viber202107.mp4	garmin 4k\virb0074.mp4	4m5a9770.jpg	iphone\img_6896.heic
garmin 4k\virb00442021.mp4	garmin 4k\virb0074.thm	video_6553635_dji_3 5_mp4_4091044399_ 408000_20218717443 4_video_original.mp4	iphone\img_6897.heic
garmin 4k\virb0041.glv	4m5a9755.mov	video_6553636_dji_3 6_mp4_4090137398_ 408000_20218717512 2_video_original.mp4	iphone\img_6898.heic
garmin 4k\virb0041.mp4	4m5a9759.mov	video_6553637_dji_3 7_mp4_1306668022_ 130000_20218717581 2_video_original.mp4	iphone\img_6899.heic
garmin 4k\virb0041.thm	4m5a9756.mov	iphone\img_6727.heic	iphone\img_6920.heic
garmin 4k\virb0042.glv	4m5a9763.mov	iphone\img_6728.heic	iphone\img_6921.heic
garmin 4k\virb0042.mp4	4m5a9757.mov	iphone\img_6729.heic	iphone\img_6922.heic
garmin 4k\virb0042.thm	4m5a9758.mov	iphone\img_6730.heic	iphone\img_6923.heic
garmin 4k\virb0043.glv	4m5a9772.mov	iphone\img_6731.heic	iphone\img_6925.heic
garmin 4k\virb0043.mp4	4m5a9760.jpg	iphone\img_6887.heic	iphone\img_6931.heic
garmin 4k\virb0043.thm	4m5a9761.jpg	iphone\img_6888.heic	iphone\img_6932.mov
garmin 4k\virb0044.glv	4m5a9765.mov	iphone\img_6889.heic	iphone\img_6933.heic
garmin 4k\virb0044.mp4	4m5a9762.mov	iphone\img_6890.heic	iphone\img_6934.heic
garmin 4k\virb0044.thm	4m5a9790.jpg	iphone\img_6891.heic	iphone\img_6935.mov
garmin 4k\virb0073.glv	4m5a9766.jpg	iphone\img_6892.heic	iphone\img_6936.mov
garmin 4k\virb0073.mp4	4m5a9767.jpg	iphone\img_6893.heic	

Entry number	Assigned Code		
2	1213		
File names			
img-20210714-wa0069.jpg	img-20210714-wa0075.jpg	img-20210714-wa0081.jpg	
img-20210714-wa0070.jpg	img-20210714-wa0076.jpg	img-20210714-wa0082.jpg	
img-20210714-wa0071.jpg	img-20210714-wa0077.jpg	img-20210714-wa0083.jpg	
img-20210714-wa0072.jpg	img-20210714-wa0078.jpg	img-20210714-wa0084.jpg	
img-20210714-wa0073.jpg	img-20210714-wa0079.jpg	img-20210714-wa0085.jpg	
img-20210714-wa0074.jpg	img-20210714-wa0080.jpg	img-20210714-wa0086.jpg	
links.docx			

TABLE A3.2: HARD COPIES OF DATA COLLECTED BY THE FACT-FINDING MISSION

None

TABLE A3.3: LIST OF SAMPLES COLLECTED OR RECEIVED BY THE FACT-FINDING MISSION

No.	Sample Description	Evidence Reference Number	
1	Asphalt sample	20210924157514	Handed over by SCD
2	Cotton swab from outside wall	20210924157505	Handed over by SCD
3	Blank cotton swab	20210924157507	Handed over by SCD
4	Blank isopropanol wipe (70%)	20210924157511	Handed over by SCD
5	Asphalt sample	20210924157515	Handed over by SCD
6	Blank – combination of isopropanol wipe and cotton swab	20210924157510	Handed over by SCD
7	Plaster from outside wall	20210924157512	Handed over by SCD
8	Plaster from inside wall where WS08 sample swab was taken	20210924157513	Handed over by SCD
9	Wet wipe swab taken with a similar kit to the one used in WB05	20210924157504	Handed over by SCD
10	Blank – Wet wipe kit unused	20210924157506	Handed over by SCD
11	Wet wipe taken from inside wall with a similar kit to the one used in WB05	20210924157508	Handed over by SCD
12	Cotton swab from inside wall (same location as WS08)	20210924157509	Handed over by SCD