

**Table of ceasefire violations as of 17 November 2019<sup>9</sup>**

SMM position	Event location	Means	No.	Observation	Description	Weapon	Date, time
SMM camera in Berezove (government-controlled, 31km SW of Donetsk)	2-4km SE	Recorded	1	Projectile	WNW to ESE	N/K	15-Nov, 21:41
	2-4km ESE	Recorded	1	Projectile	NNE to SSW	N/K	15-Nov, 21:59
	2-4km ESE	Recorded	1	Projectile	NNE to SSW	N/K	15-Nov, 22:04
	2-4km ESE	Recorded	1	Projectile	NNE to SSW	N/K	15-Nov, 22:06
	2-4km ESE	Recorded	1	Projectile	NNE to SSW	N/K	15-Nov, 22:07
	2-4km SE	Recorded	1	Projectile	SW to NE	N/K	15-Nov, 22:13
	2-4km SE	Recorded		Explosion	Uncountable and impact	N/K	15-Nov, 22:13
	2-4km SE	Recorded	1	Projectile	SW to NE	N/K	15-Nov, 22:13
	2-4km SE	Recorded	2	Projectile	SW to NE	N/K	15-Nov, 22:14
	2-4km SE	Recorded		Explosion	Uncountable and impact	N/K	15-Nov, 22:14
	2-4km SE	Recorded	1	Projectile	W to E	N/K	15-Nov, 22:14
	2-4km ESE	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 22:14
	2-4km SE	Recorded	2	Projectile	W to E	N/K	15-Nov, 22:15
	2-4km SE	Recorded	2	Projectile	SW to NE	N/K	16-Nov, 00:44
	2-4km SE	Recorded	1	Explosion		N/K	16-Nov, 01:48
SMM camera in Chermalyk (government-controlled, 77km S of Donetsk)	2-7km SSE	Recorded	1	Projectile	SW to NE	N/K	15-Nov, 19:37
	2-7km SSE	Recorded	1	Projectile	NE to SW	N/K	15-Nov, 19:42
	2-7km SSE	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 19:42
SMM camera at Donetsk Filtration Station (15km N of Donetsk)	0.7-1km SSW	Recorded	1	Projectile	E to W	N/K	15-Nov, 18:39
	1-2km SSW	Recorded	1	Illumination flare	In vertical flight	N/K	15-Nov, 18:39
	0.7-1km SSW	Recorded	1	Projectile	E to W	N/K	15-Nov, 19:41
	200-500m SSW	Recorded	2	Projectile	W to E	N/K	15-Nov, 21:34
	200-500m SSW	Recorded	1	Projectile	W to E	N/K	15-Nov, 21:54
	200-500m SSW	Recorded	1	Muzzle flash		N/K	15-Nov, 21:54
	1-2km SSW	Recorded	1	Projectile	WNW to ESE	N/K	16-Nov, 01:56
SMM camera 1.5km NE of Hnutove (government-controlled, 90km S of Donetsk)	3-5km E	Recorded		Explosion	Uncountable	N/K	15-Nov, 18:37
	3-5km E	Recorded	1	Projectile	N to S	N/K	15-Nov, 18:37
	4-8km SE	Recorded	19	Projectile	NE to SW	N/K	15-Nov, 18:54
	4-8km SE	Recorded	4	Projectile	SW to NE	N/K	15-Nov, 18:54
	3-5km E	Recorded	2	Muzzle flash		N/K	15-Nov, 18:54
	4-8km SE	Recorded	4	Projectile	SW to NE	N/K	15-Nov, 18:55
	4-8km SE	Recorded	7	Projectile	NE to SW	N/K	15-Nov, 18:55
	4-8km SE	Recorded	20	Projectile	SW to NE	N/K	15-Nov, 18:56
	4-8km SE	Recorded	3	Projectile	NE to SW	N/K	15-Nov, 18:56
	4-8km SE	Recorded	3	Projectile	SW to NE	N/K	15-Nov, 18:57
	4-8km E	Recorded	2	Projectile	N to S	N/K	15-Nov, 19:21
	4-8km E	Recorded	6	Projectile	N to S	N/K	15-Nov, 19:22
	4-8km E	Recorded	1	Illumination flare	In vertical flight	N/K	15-Nov, 19:22
	3-5km E	Recorded	1	Projectile	N to S	N/K	15-Nov, 19:27
	3-5km E	Recorded	3	Projectile	N to S	N/K	15-Nov, 19:32
	3-5km E	Recorded	4	Explosion	Undetermined	N/K	15-Nov, 19:32
	3-5km E	Recorded	3	Explosion	Undetermined	N/K	15-Nov, 19:37
3-5km E	Recorded	2	Projectile	S to N	N/K	15-Nov, 19:37	

<sup>9</sup> The table only includes ceasefire violations directly observed by the SMM and it may include those also assessed to be live-fire exercises, controlled detonations, etc. Details provided – in terms of distance, direction, weapons-type, etc. – are based on assessments provided by monitors on the ground, and are not always necessarily precise. When information is not known (indicated with an “N/K”), the SMM was unable to ascertain such information due to distance, weather conditions and/or other considerations. Ceasefire violations recorded by more than one patrol and assessed to be the same are entered only once.

	3-5km E	Recorded	1	Illumination flare	In vertical flight	N/K	15-Nov, 19:38
	3-5km E	Recorded	1	Projectile	N to S	N/K	15-Nov, 19:43
	3-5km E	Recorded	1	Projectile	N to S	N/K	15-Nov, 19:47
	2-4km SE	Recorded	3	Projectile	SSW to NNE	N/K	15-Nov, 21:29
	2-4km SE	Recorded	2	Projectile	NNE to SSW	N/K	15-Nov, 21:29
	2-4km SE	Recorded	1	Projectile	SW to NE	N/K	15-Nov, 21:56
	2-4km ESE	Recorded	1	Explosion		N/K	15-Nov, 22:08
	2-4km ESE	Recorded	1	Projectile	NW to SE	N/K	15-Nov, 22:08
	2-4km SE	Recorded	5	Projectile	N to S	N/K	15-Nov, 22:16
	2-4km SE	Recorded	1	Projectile	NNE to SSW	N/K	15-Nov, 22:17
	3-5km ESE	Recorded	6	Projectile	SSW to NNE	N/K	15-Nov, 22:19
	3-5km ESE	Recorded	3	Muzzle flash		N/K	15-Nov, 22:20
	3-5km ESE	Recorded	3	Projectile	NNE to SSW	N/K	15-Nov, 22:20
	3-5km ESE	Recorded	3	Projectile	SW to NE	N/K	15-Nov, 22:22
	2-4km SE	Recorded	1	Projectile	NNE to SSW	N/K	16-Nov, 02:53
	2-4km SE	Recorded	1	Projectile	In vertical flight	N/K	16-Nov, 02:53
	2-4km ESE	Recorded	11	Projectile	SSW to NNE	N/K	16-Nov, 03:31
SMM camera E of Lomakyne (government-controlled, 90km S of Donetsk)	4-6km E	Recorded	3	Explosion	Undetermined	N/K	15-Nov, 19:37
	4-6km E	Recorded	2	Projectile	NNW to SSE	N/K	15-Nov, 19:37
	2-4km E	Recorded	1	Projectile	N to S	N/K	15-Nov, 21:56
	3-5km E	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 22:08
	3-5km E	Recorded		Projectile	E to W, uncountable	N/K	15-Nov, 22:09
SMM camera at entry-exit checkpoint in Maiorsk (government-controlled, 45km NE of Donetsk)	2-4km E	Recorded	3	Projectile	N to S	N/K	15-Nov, 21:52
	2-4km E	Recorded	1	Projectile	N to S	N/K	15-Nov, 22:08
	2-4km E	Recorded	1	Projectile	N to S	N/K	15-Nov, 22:25
	1-3km ENE	Recorded	13	Projectile	N to S	N/K	15-Nov, 22:32
SMM camera at entry-exit checkpoint in Marinka (government-controlled, 23km SW of Donetsk)	3-5km NE	Recorded	1	Projectile	W to E	N/K	15-Nov, 19:39
	3-5km NE	Recorded	1	Projectile	W to E	N/K	15-Nov, 19:43
	3-5km NE	Recorded	1	Projectile	W to E	N/K	15-Nov, 19:47
SMM camera at entry-exit checkpoint in Pyshchevyk (government-controlled, 84km S of Donetsk)	2-4km ESE	Recorded	1	Projectile	S to N	N/K	16-Nov, 00:28
SMM camera 1km SW of Shyrokyne (government-controlled, 100km S of Donetsk)	2-7km N	Recorded	2	Explosion	Undetermined	N/K	15-Nov, 18:39
	2-7km N	Recorded	1	Projectile	W to E	N/K	15-Nov, 18:39
	2-7km N	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 19:32
	2-7km N	Recorded	4	Explosion	Undetermined	N/K	15-Nov, 19:37
	2-7km N	Recorded	2	Projectile	W to E	N/K	15-Nov, 19:37
	2-7km N	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 19:42
	2-7km N	Recorded	4	Explosion	Undetermined	N/K	15-Nov, 19:43
	2-7km N	Recorded	2	Projectile	SSE to NNW	N/K	15-Nov, 19:43
	3-5km NNE	Recorded	17	Projectile	E to W	N/K	15-Nov, 20:48
	2-4km N	Recorded	4	Projectile	E to W	N/K	15-Nov, 20:50
	2-4km N	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 20:52
	2-4km N	Recorded	15	Projectile	E to W	N/K	15-Nov, 20:52
	2-4km N	Recorded	4	Projectile	W to E	N/K	15-Nov, 20:54
	2-4km N	Recorded	3	Projectile	W to E	N/K	15-Nov, 21:06
	2-4km N	Recorded	1	Projectile	E to W	N/K	15-Nov, 21:26
2-4km N	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 21:26	

	2-4km N	Recorded	1	Explosion	Undetermined	N/K	15-Nov, 21:56
	2-4km N	Recorded	2	Explosion	Undetermined	N/K	15-Nov, 22:09
	2-4km N	Recorded	3	Projectile	E to W	N/K	15-Nov, 22:34
	3-5km N	Recorded	6	Projectile	E to W	N/K	15-Nov, 23:44
	3-5km N	Recorded	11	Projectile	E to W	N/K	16-Nov, 01:05
	2-4km NNE	Recorded	2	Projectile	E to W	N/K	16-Nov, 03:35
	2-4km NNE	Recorded	4	Projectile	E to W	N/K	16-Nov, 03:39
SE part of Avdiivka (government-controlled, 17km N of Donetsk)	2-3km SSE	Heard	10	Shot		Small arms	16-Nov, 09:07
	2-3km SSE	Heard	6	Burst		Small arms	16-Nov, 09:21-09:25
	2-3km SSE	Heard	10	Shot		HMG	16-Nov, 09:45
	2km SSE	Heard	10	Burst		HMG	16-Nov, 10:20-10:30
	2km SSE	Heard	6	Shot		IFV	16-Nov, 10:20-10:30
	2-3km SSE	Heard	10	Shot		HMG	16-Nov, 11:20
Krasnohorivka (government-controlled, 21km W of Donetsk)	2-3km NE	Heard		Shot	Uncountable, overlapping	HMG	16-Nov, 11:42-11:49
	2-3km E	Heard	8	Explosion	Undetermined	N/K	16-Nov, 11:42-11:49
	2-3km NE	Heard		Shot	Uncountable, overlapping	HMG	16-Nov, 11:49-11:52
1.8km N of Petrivske (non-government-controlled, 41km S of Donetsk)	1-2km SSW	Heard	5	Shot	Assessed as outside the disengagement area	Small arms	16-Nov, 10:36
2.8km SW of Vesele (non-government-controlled, 9km NW of Donetsk)	3-4km WSW	Heard	2	Explosion	Undetermined	N/K	16-Nov, 11:42-11:45
About 1km NW of the railway station in Yasynuvata (non-government-controlled, 16km NE of Donetsk)	2km WSW	Heard	5	Burst		Small arms	16-Nov, 09:05
	3-5km WSW	Heard	1	Explosion	Undetermined	N/K	16-Nov, 09:09
	2km WSW	Heard	3	Burst		Small arms	16-Nov, 09:20
	2km WSW	Heard	37	Burst		Small arms	16-Nov, 09:24-09:40
	2-3km WSW	Heard	6	Burst		HMG	16-Nov, 09:45
	2-3km WSW	Heard	4	Burst		HMG	16-Nov, 09:57
	3-4km W	Heard	1	Explosion	Undetermined	N/K	16-Nov, 13:00
1km NNW of Pyshevyk (government-controlled, 25km NE of Mariupol)	N/K SSE	Heard	2	Explosion	Undetermined	N/K	16-Nov, 10:27
Svitlodarsk (government-controlled, 57km NE of Donetsk)	3-4km SSE	Heard	5	Burst		HMG	15-Nov, 19:00
	3-4km SSE	Heard	10	Burst		HMG	15-Nov, 19:30
	3-4km SSE	Heard	7	Explosion	Undetermined	N/K	15-Nov, 20:25-20:26
	3-4km SSE	Heard	10	Burst	Undetermined	N/K	15-Nov, 20:25-20:26
	4-5km SSE	Heard	15	Burst	Undetermined	N/K	15-Nov, 20:36-20:40
	3-4km SSE	Heard	3	Explosion	Undetermined	N/K	15-Nov, 20:39-20:41
	4-5km SE	Heard	25	Burst		HMG	15-Nov, 21:30-21:35
	4-5km SE	Heard	10	Explosion	Undetermined	N/K	15-Nov, 21:30-21:35

	3-4km SE	Heard	10	Burst		HMG	15-Nov, 22:05-22:07
	3-4km SE	Heard	6	Explosion	Undetermined	N/K	15-Nov, 22:05-22:07
	4-5km SE	Heard	27	Burst		HMG	15-Nov, 22:40-22:45
	4-5km SE	Heard	15	Explosion	Undetermined	N/K	15-Nov, 22:40-22:45
	4-5km SSE	Heard	10	Burst		HMG	15-Nov, 23:10-23:12
	4-5km SSE	Heard	7	Explosion	Undetermined	N/K	15-Nov, 23:10-23:12
	3-4km SSE	Heard	15	Burst		HMG	15-Nov, 23:30-23:33
	3-4km SSE	Heard	7	Explosion	Undetermined	N/K	15-Nov, 23:30-23:33
	3-4km SE	Heard	17	Burst		HMG	15-Nov, 23:40-23:45
	3-4km SE	Heard	5	Explosion	Undetermined	N/K	15-Nov, 23:40-23:45
	4-5km SE	Heard	20	Burst		HMG	15-Nov, 23:50-23:55
	4-5km SE	Heard	5	Explosion	Undetermined	N/K	15-Nov, 23:50-23:55
	3-4km SE	Heard	30	Burst		HMG	15-Nov, 23:57-00:00
	3-4km SE	Heard	15	Explosion		N/K	15-Nov, 23:57-00:00
	3-4km SSE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 07:42
	3-4km SSE	Heard	50	Burst		HMG	16-Nov, 14:50-15:00
	3-4km SSE	Heard	10	Explosion	Undetermined	N/K	16-Nov, 14:50-15:00
	4-5km SSE	Heard	5	Explosion	Undetermined	N/K	16-Nov, 15:57
	4-5km SSE	Heard	5	Explosion	Undetermined	N/K	16-Nov, 16:08
	4-5km SSE	Heard	10	Burst		HMG	16-Nov, 17:35
	4-5km SSE	Heard	2	Explosion	Undetermined	N/K	16-Nov, 17:35
	4-5km SE	Heard	10	Explosion	Undetermined	N/K	16-Nov, 18:00-18:15
	4-5km SE	Heard	15	Burst		HMG	16-Nov, 18:00-18:15
Horlivka (non-government-controlled, 39km NE of Donetsk)	2-3km WSW	Heard	3	Burst		Small arms	15-Nov, 19:44
	4-5km W	Heard	2	Explosion	Undetermined	N/K	16-Nov, 16:35
About 500m NE of Kamianka (government-controlled, 20km N of Donetsk)	2-4km SE	Heard	12	Burst		HMG	16-Nov, 09:05
	2-3km S	Heard	5	Shot		Small arms	16-Nov, 09:06
	3-4km S	Heard	3	Explosion	Undetermined	N/K	16-Nov, 09:08
	3-4km S	Heard	3	Explosion	Undetermined	N/K	16-Nov, 09:21
	2-3km SE	Heard	9	Burst		HMG	16-Nov, 09:24
	2-3km SE	Heard	22	Burst		HMG	16-Nov, 09:38
	2-3km SE	Heard	8	Burst		HMG	16-Nov, 09:47
	2-4km SE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 10:17
	2-3km SE	Heard	14	Burst		HMG	16-Nov, 10:20
	2-3km S	Heard	26	Burst		HMG	16-Nov, 10:24-10:25
	2-3km S	Heard	12	Burst		HMG	16-Nov, 10:59
	2-3km S	Heard	10	Burst		HMG	16-Nov, 11:19
	3-4km SSE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 11:29
	3-4km NE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 11:20

Pivnichne (government-controlled, 44km NE of Donetsk)	3-4km NE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 11:37
Kurdiumivka (government-controlled, 54km N of Donetsk)	3-4km SE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 11:20
	3-4km SE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 11:37
	3-4km SE	Heard	3	Explosion	Undetermined	N/K	16-Nov, 11:38
	3-4km SE	Heard	4	Explosion	Undetermined	N/K	16-Nov, 11:58
SMM camera in Kriakivka (government-controlled, 38km NW of Luhansk)	2-4km SSW	Recorded	2	Projectile	WNW to ESE	N/K	15-Nov, 19:49
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:18
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:20
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:22
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:25
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:27
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:30
	2-4km SSW	Recorded	4	Projectile	WNW to ESE	N/K	16-Nov, 02:34
	2-4km SSW	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 02:34
	2-4km SSW	Recorded	2	Projectile	WNW to ESE	N/K	16-Nov, 02:35
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:37
	2-4km SSW	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 02:39
	2-4km SSW	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 02:40
	2-4km SSW	Recorded	7	Projectile	WNW to ESE	N/K	16-Nov, 02:40
	2-4km SSW	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 02:41
	2-4km SSW	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 02:42
	2-4km SSW	Recorded	4	Explosion	Undetermined	N/K	16-Nov, 02:43
	2-4km SSW	Recorded	5	Explosion	Undetermined	N/K	16-Nov, 02:44
	2-4km SSW	Recorded	3	Explosion	Undetermined	N/K	16-Nov, 02:45
	2-4km SSW	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 02:47
2-4km SSW	Recorded	3	Explosion	Undetermined	N/K	16-Nov, 02:48	
SMM camera in Zolote (government-controlled, 60km W of Luhansk)	2-4km E	Recorded	3	Projectile	NNW to SSE (assessed as outside the disengagement area)	N/K	15-Nov, 20:39
N edge of Popasna (government-controlled, 69km W of Luhansk)	5-7km SE	Heard	38	Shot and burst	Assessed as outside the Zolote disengagement area	HMG	15-Nov, 20:47-22:16
	8-10km NE	Heard	5	Explosion	Undetermined	N/K	15-Nov, 20:47-22:16
	5-7km SE	Heard	39	Burst	Assessed as outside the Zolote disengagement area	HMG	15-Nov, 20:47-22:16
	5-7km SE	Heard	10	Shot and burst	Assessed as outside the Zolote disengagement area	HMG	15-Nov, 20:47-22:16
	5-7km SE	Heard	13	Explosion	Undetermined (assessed as outside the Zolote disengagement area)	N/K	15-Nov, 20:47-22:16
	5-7km SE	Heard	12	Shot	Assessed as outside the Zolote disengagement area	N/K	15-Nov, 20:47-22:16



E edge of Popasna (government-controlled, 69km W of Luhansk)	2-3km W	Heard	4	Explosion	Outgoing	N/K	16-Nov, 13:46-13:53
Kadiivka (formerly Stakhanov, non-government-controlled, 50km W of Luhansk)	10-17km SW	Heard	14	Explosion	Undetermined	N/K	15-Nov, 22:12-23:40
	1km WSW	Heard	4	Shot		Small arms	15-Nov, 22:12-23:40
	10-17km SW	Heard	3	Explosion	Undetermined	N/K	15-Nov, 22:12-23:40
	10-17km SW	Heard	7	Explosion	Undetermined	N/K	16-Nov, 00:19-02:33
	10-17km SW	Heard	2	Explosion	Undetermined	N/K	16-Nov, 00:19-02:33
	10-17km SW	Heard	2	Explosion	Undetermined	N/K	16-Nov, 00:19-02:33
1km N of Kalynove-Borshchuvate (non-government-controlled, 23km SW of Luhansk)	2-4km NW	Heard	4	Explosion	Undetermined (assessed as outside the Zolote disengagement area)	N/K	16-Nov, 13:44-13:51
	2-4km NNW	Heard	2	Burst	Assessed as outside the Zolote disengagement area	Small arms	16-Nov, 13:44-13:51
1.7km SW of Molodizhne (non-government-controlled, 63km NW of Luhansk)	2-4km NNE	Heard	1	Explosion	Undetermined (assessed as outside the Zolote disengagement area)	N/K	16-Nov, 14:04
W edge of Pervomaisk (non-government-controlled, 58km W of Luhansk)	2-4km WSW	Heard	4	Shot		Small arms	16-Nov, 14:40-15:00
	2-4km WSW	Heard	5	Burst		Small arms	16-Nov, 14:40-15:03
	2-4km WSW	Heard	1	Explosion	Undetermined	N/K	16-Nov, 14:40
	10-12km SW	Heard	1	Explosion	Undetermined	N/K	16-Nov, 14:46
SMM camera in Avdiivka (government-controlled, 17km N of Donetsk)	3-5km SE	Recorded	1	Illumination flare	NNW to SSE	N/K	16-Nov, 18:28
SMM camera in Chermalyk (government-controlled, 77km S of Donetsk)	2-7km SE	Recorded	6	Projectile	WSW to ENE	N/K	16-Nov, 18:12
	2-7km SE	Recorded	5	Projectile	ENE to WSW	N/K	16-Nov, 18:12
	2-7km SE	Recorded	2	Projectile	ENE to WSW	N/K	16-Nov, 18:14
	2-7km SE	Recorded	1	Projectile	WNW to ESE	N/K	16-Nov, 18:41
	2-7km SE	Recorded	1	Projectile	WSW to ENE	N/K	16-Nov, 18:42
	2-7km SE	Recorded	3	Projectile	ENE to WSW	N/K	16-Nov, 18:43
	2-7km SE	Recorded	1	Projectile	WNW to ESE	N/K	16-Nov, 18:46
	2-7km SE	Recorded	1	Projectile	ENE to WSW	N/K	16-Nov, 18:54
	2-7km SE	Recorded	8	Projectile	ENE to WSW	N/K	16-Nov, 18:56
	2-7km SE	Recorded	4	Projectile	ENE to WSW	N/K	16-Nov, 18:57
	2-7km SE	Recorded	1	Projectile	WNW to ESE	N/K	16-Nov, 19:06
	2-7km SE	Recorded	4	Muzzle flash		N/K	16-Nov, 19:07
	2-7km SE	Recorded	2	Projectile	WNW to ESE	N/K	16-Nov, 19:07
	2-7km SE	Recorded	6	Projectile	WSW to ENE	N/K	16-Nov, 19:10
	2-7km SE	Recorded	1	Muzzle flash		N/K	16-Nov, 19:10
	2-7km SE	Recorded	9	Projectile	ENE to WSW	N/K	16-Nov, 19:15
	2-7km SE	Recorded	13	Projectile	ENE to WSW	N/K	16-Nov, 19:16
	2-7km SE	Recorded	1	Projectile	WNW to ESE	N/K	16-Nov, 19:17

	2-7km SE	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 19:18
	2-7km SE	Recorded	1	Projectile	NNE to SSW	N/K	16-Nov, 19:18
	2-7km SE	Recorded	2	Projectile	WSW to ENE	N/K	16-Nov, 19:37
	2-7km SE	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 19:37
	2-7km SE	Recorded	1	Projectile	ENE to WSW	N/K	16-Nov, 19:38
	2-7km SE	Recorded	1	Projectile	WSW to ENE	N/K	16-Nov, 19:39
	2-7km SE	Recorded	1	Projectile	WSW to ENE	N/K	16-Nov, 19:41
	2-7km SE	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 19:41
	3-5km SE	Recorded	6	Projectile	NE to SW	N/K	16-Nov, 20:43
	3-5km SE	Recorded	2	Projectile	NE to SW	N/K	16-Nov, 20:44
	3-5km SE	Recorded	2	Projectile	NE to SW	N/K	16-Nov, 20:45
	3-5km SE	Recorded	7	Projectile	NE to SW	N/K	16-Nov, 20:46
	3-5km SE	Recorded	14	Projectile	NE to SW	N/K	16-Nov, 20:47
	3-5km SE	Recorded	12	Projectile	NE to SW	N/K	16-Nov, 20:50
	3-5km SE	Recorded	6	Projectile	NE to SW	N/K	16-Nov, 20:51
	3-5km SE	Recorded	5	Projectile	NE to SW	N/K	16-Nov, 20:52
	3-5km SSE	Recorded	1	Projectile	NE to SW	N/K	16-Nov, 20:58
	3-5km SE	Recorded	5	Projectile	NE to SW	N/K	16-Nov, 20:59
	3-5km SE	Recorded	18	Projectile	NE to SW	N/K	16-Nov, 21:00
	3-5km SE	Recorded	3	Projectile	NE to SW	N/K	16-Nov, 21:01
	3-5km SE	Recorded	3	Projectile	NE to SW	N/K	16-Nov, 21:02
	3-5km SE	Recorded	24	Projectile	NE to SW	N/K	16-Nov, 21:04
	3-5km SE	Recorded	5	Projectile	NE to SW	N/K	16-Nov, 21:05
	3-5km SE	Recorded	10	Projectile	NE to SW	N/K	16-Nov, 21:06
	3-5km SE	Recorded	1	Projectile	NE to SW	N/K	16-Nov, 21:07
	3-5km SE	Recorded	1	Projectile	SW to NE	N/K	16-Nov, 21:11
	3-5km SSE	Recorded	1	Projectile	SW to NE	N/K	16-Nov, 21:15
	3-5km SE	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 21:15
	3-5km SE	Recorded	1	Projectile	NE to SW	N/K	16-Nov, 21:18
	3-5km SE	Recorded	5	Projectile	NE to SW	N/K	16-Nov, 21:21
	3-5km SE	Recorded	4	Projectile	NE to SW	N/K	16-Nov, 21:22
	3-5km SE	Recorded	2	Projectile	NE to SW	N/K	16-Nov, 21:23
	3-5km SE	Recorded	12	Projectile	NE to SW	N/K	16-Nov, 21:26
	3-5km SE	Recorded	2	Muzzle flash	Undetermined	N/K	16-Nov, 21:26
	3-5km SE	Recorded	6	Projectile	NE to SW	N/K	16-Nov, 21:27
	3-5km SE	Recorded	8	Projectile	In vertical flight	N/K	17-Nov, 17:37
SMM camera at Donetsk Filtration Station (15km N of Donetsk)	0.7-2km S	Recorded	10	Projectile	E to W	N/K	16-Nov, 17:21
	0.7-2km S	Recorded	19	Explosion	Undetermined	N/K	16-Nov, 17:34
	0.7-2km SSW	Recorded	3	Explosion	Undetermined	N/K	16-Nov, 17:35
	0.7-2km S	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 18:23
	1-2km S	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 21:11
	1-3km SSW	Recorded	1	Projectile	W to E	N/K	16-Nov, 21:26
	1-2km SSW	Recorded	1	Projectile	In vertical flight	N/K	16-Nov, 21:33
	1-2km S	Recorded	2	Muzzle flash		N/K	16-Nov, 23:55
	1-2km S	Recorded	1	Explosion	Undetermined	N/K	17-Nov, 05:17
	1-2km SSE	Recorded	1	Explosion	Undetermined	N/K	17-Nov, 05:17
	1-2km SSW	Recorded	8	Explosion	Undetermined	N/K	17-Nov, 05:43
	1-2km SSE	Recorded	1	Explosion	Undetermined	N/K	17-Nov, 05:43
SMM camera 1.5km NE of Hnutove (government-controlled, 90km S of Donetsk)	2-4km E	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 18:23
	2-4km E	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 18:32
	2-4km E	Recorded	4	Projectile	N to S	N/K	16-Nov, 18:32
	2-4km E	Recorded	4	Projectile	N to S	N/K	16-Nov, 18:40
	2-4km E	Recorded	4	Projectile	SSW to NNE	N/K	16-Nov, 18:40
	2-4km E	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 18:48
	2-4km E	Recorded	4	Projectile	SSW to NNE	N/K	16-Nov, 18:54
	2-4km E	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 18:54
	2-4km E	Recorded	3	Explosion	Undetermined	N/K	16-Nov, 18:55
	2-4km E	Recorded	2	Projectile	SSW to NNE	N/K	16-Nov, 18:55

	2-4km E	Recorded	1	Projectile	NNE to SSW	N/K	16-Nov, 18:55
	2-4km E	Recorded	5	Projectile	SSW to NNE	N/K	16-Nov, 18:56
	2-4km E	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 18:56
	2-4km E	Recorded	2	Projectile	NNE to SSW	N/K	16-Nov, 18:56
	2-4km E	Recorded	6	Explosion	Undetermined	N/K	16-Nov, 19:10
	2-4km ESE	Recorded	1	Projectile	SSW to NNE	N/K	16-Nov, 19:25
	2-4km SE	Recorded	8	Projectile	SSW to NNE	N/K	16-Nov, 19:28
	2-4km ESE	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 19:28
	3-5km E	Recorded	8	Projectile	NNE to SSW	N/K	16-Nov, 20:00
	3-5km E	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 20:00
	3-5km E	Recorded	1	Projectile	NNE to SSW	N/K	16-Nov, 20:01
	3-5km ESE	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 20:02
	3-5km E	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 20:14
	3-5km E	Recorded	5	Explosion	Undetermined	N/K	16-Nov, 20:28
	3-5km E	Recorded	5	Projectile	NNE to SSW	N/K	16-Nov, 20:30
	3-5km ESE	Recorded	4	Projectile	SSW to NNE	N/K	16-Nov, 20:31
	3-5km ESE	Recorded	5	Projectile	SSW to NNE	N/K	16-Nov, 20:32
	3-5km E	Recorded	3	Explosion	Undetermined	N/K	16-Nov, 20:35
	3-5km ESE	Recorded	6	Projectile	SSW to NNE	N/K	16-Nov, 21:21
	3-5km E	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 21:43
	3-5km ESE	Recorded	1	Projectile	SSW to NNE	N/K	16-Nov, 21:59
	3-5km ESE	Recorded	7	Projectile	SSW to NNE	N/K	16-Nov, 22:00
	3-5km E	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 22:07
	2-4km E	Recorded	1	Explosion	Undetermined	N/K	17-Nov, 00:00
	2-4km SE	Recorded	6	Projectile	SSW to NNE	N/K	17-Nov, 00:52
	2-4km ESE	Recorded	1	Projectile	SSW to NNE	N/K	17-Nov, 01:06
	2-4km SE	Recorded	2	Projectile	SSW to NNE	N/K	17-Nov, 01:14
	2-4km SE	Recorded	9	Projectile	NNE to SSW	N/K	17-Nov, 01:15
	2-4km ESE	Recorded	4	Projectile	SSW to NNE	N/K	17-Nov, 01:52
	3-5km E	Recorded	1	Explosion	Undetermined	N/K	17-Nov, 02:16
	3-5km ESE	Recorded	7	Projectile	SSW to NNE	N/K	17-Nov, 02:21
	3-5km ESE	Recorded	2	Projectile	SSW to NNE	N/K	17-Nov, 02:37
	3-5km ESE	Recorded	1	Projectile	SSW to NNE	N/K	17-Nov, 02:40
	3-5km ESE	Recorded	3	Projectile	SSW to NNE	N/K	17-Nov, 02:50
	3-5km ESE	Recorded	8	Projectile	WSW to ENE	N/K	17-Nov, 03:04
	3-5km ESE	Recorded	8	Projectile	SSW to NNE	N/K	17-Nov, 03:43
	3-5km ESE	Recorded	4	Projectile	SSW to NNE	N/K	17-Nov, 03:51
	3-5km ESE	Recorded	1	Projectile	SSW to NNE	N/K	17-Nov, 03:53
	2-4km ESE	Recorded	7	Projectile	WSW to ENE	N/K	17-Nov, 05:01
	3-5km SE	Recorded	1	Projectile	SSW to NNE	N/K	17-Nov, 05:19
	2-4km ESE	Recorded	2	Projectile	SSW to NNE	N/K	17-Nov, 05:23
	2-4km ESE	Recorded	17	Projectile	SSW to NNE	N/K	17-Nov, 05:25
	3-5km ESE	Recorded	14	Projectile	SSW to NNE	N/K	17-Nov, 17:16
	3-5km ESE	Recorded	10	Projectile	SSW to NNE	N/K	17-Nov, 17:23
	3-5km ESE	Recorded	1	Projectile	SSW to NNE	N/K	17-Nov, 18:12
	3-5km ESE	Recorded	4	Projectile	SSW to NNE	N/K	17-Nov, 18:13
SMM camera E of Lomakyne (government-controlled, 90km S of Donetsk)	2-4km E	Recorded	1	Projectile	S to N	N/K	16-Nov, 18:23
	2-4km E	Recorded	1	Explosion	In air	N/K	16-Nov, 18:23
	2-4km	Recorded	1	Projectile	NW to SE	N/K	16-Nov, 18:29
	2-4km E	Recorded	2	Projectile	S to N	N/K	16-Nov, 18:32
	2-5km E	Recorded	1	Projectile	W to E	N/K	16-Nov, 18:32
	2-4km E	Recorded	1	Muzzle flash		N/K	16-Nov, 18:34
	2-4km E	Recorded	7	Projectile	S to N	N/K	16-Nov, 18:40
	2-4km ENE	Recorded	1	Projectile	N to S	N/K	16-Nov, 18:41
	2-4km E	Recorded	3	Projectile	S to N	N/K	16-Nov, 18:54
	2-4km E	Recorded	1	Muzzle flash		N/K	16-Nov, 18:54
	2-4km E	Recorded	4	Projectile	S to N	N/K	16-Nov, 18:55
	2-4km E	Recorded	7	Projectile	S to N	N/K	16-Nov, 18:56



	2-4km ENE	Recorded	1	Projectile	N to S	N/K	16-Nov, 19:07	
	2-4km ENE	Recorded	1	Projectile	WNW to ESE	N/K	16-Nov, 19:36	
	2-4km ENE	Recorded	1	Projectile	WNW to ESE	N/K	16-Nov, 19:37	
	2-4km ENE	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 19:37	
SMM camera at entry-exit checkpoint in Marinka (government-controlled, 23km SW of Donetsk)	2-4km NNE	Recorded	2	Projectile	SE to NW	N/K	16-Nov, 16:57	
	2-4km NNE	Recorded	2	Projectile	In vertical flight	N/K	16-Nov, 16:57	
SMM camera 1km SW of Shyrokyne (government-controlled, 100km S of Donetsk)	2-7km N	Recorded	8	Projectile	E to W	N/K	16-Nov, 16:54	
	2-7km N	Recorded	2	Projectile	W to E	N/K	16-Nov, 18:19	
	2-7km N	Recorded	1	Illumination flare	In vertical flight	N/K	16-Nov, 18:40	
	2-7km N	Recorded	4	Projectile	E to W	N/K	16-Nov, 18:40	
	2-7km N	Recorded	2	Projectile	E to W	N/K	16-Nov, 18:54	
	2-7km N	Recorded	2	Projectile	E to W	N/K	16-Nov, 18:55	
	2-7km N	Recorded	4	Projectile	E to W	N/K	16-Nov, 18:56	
	2-7km N	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 19:18	
	2-7km N	Recorded	1	Projectile	E to W	N/K	16-Nov, 19:18	
	2-7km N	Recorded	3	Explosion	Undetermined	N/K	16-Nov, 19:37	
	2-4km N	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 21:14	
	2-4km N	Recorded	1	Projectile	W to E	N/K	16-Nov, 21:14	
	2-4km N	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 21:15	
	2-4km N	Recorded	1	Projectile	W to E	N/K	16-Nov, 21:15	
	2-4km N	Recorded	16	Projectile	E to W	N/K	16-Nov, 21:22	
	2-4km NNE	Recorded	1	Explosion	Undetermined	N/K	16-Nov, 21:35	
	3-5km N	Recorded	2	Projectile	E to W	N/K	16-Nov, 21:48	
	3-5km N	Recorded	3	Projectile	SW to NE	N/K	16-Nov, 21:50	
	3-5km N	Recorded	11	Projectile	E to W	N/K	16-Nov, 21:57	
	3-5km N	Recorded	2	Projectile	E to W	N/K	16-Nov, 22:03	
	3-5km N	Recorded	6	Projectile	SW to NE	N/K	16-Nov, 22:04	
	3-5km N	Recorded	2	Explosion	Undetermined	N/K	16-Nov, 22:07	
	3-5km N	Recorded	1	Projectile	ESE to WNW	N/K	16-Nov, 22:17	
	3-5km N	Recorded	5	Projectile	SW to NE	N/K	16-Nov, 23:26	
	3-5km N	Recorded	2	Projectile	E to W	N/K	16-Nov, 23:40	
	3-5km N	Recorded	1	Projectile	SW to NE	N/K	16-Nov, 23:40	
	2-4km N	Recorded	6	Projectile	SW to NE (in vertical flight)	N/K	17-Nov, 02:21	
		3-6km N	Recorded	1	Explosion	Undetermined	N/K	17-Nov, 18:03
		2-6km N	Recorded	6	Projectile	E to W	N/K	17-Nov, 18:16
	About 700m ESE of Kruta Balka (non-government-controlled, 16km N of Donetsk)	3-4km NW	Heard	12	Burst		HMG	17-Nov, 10:51-11:05
About 1km NW of the railway station in Yasynuvata (non-government-controlled, 16km NE of Donetsk)	2-3km N	Heard	2	Shot		Small arms	17-Nov, 12:17	
	5-6km NW	Heard	2	Explosion	Undetermined	N/K	17-Nov, 12:20	
	2km SE	Heard	2	Shot		Small arms	17-Nov, 13:00	
Staromykhailivka (non-government-controlled, 15km W of Donetsk)	0.8-1km W	Heard and saw	8	Shot	Undetermined	IFV	17-Nov, 11:24-11:26	
Krasnohorivka (government-controlled, 21km W of Donetsk)	1km E	Heard	8	Burst		Cannon (30mm)	17-Nov, 11:23-11:45	
	1km E	Heard	14	Burst		HMG	17-Nov, 11:23-11:45	

	1km E	Heard	5	Explosion	Undetermined	N/K	17-Nov, 11:23-11:45
	1km E	Heard	11	Explosion	Undetermined	AGL	17-Nov, 11:23-11:45
SE edge of Avdiivka (government-controlled, 17km N of Donetsk)	3-4km SE	Heard	5	Explosion	Undetermined	N/K	17-Nov, 09:50
1.3km NE of Bohdanivka (government-controlled, 41km SW of Donetsk)	2-3km NNE	Heard	28	Shot	Assessed as outside the Petrivske disengagement area	Small arms	17-Nov, 12:29-12:38
About 1km NE of Kulykove (non-government-controlled, 87km S of Donetsk)	2-3km W	Heard	2	Explosion	Undetermined	N/K	17-Nov, 13:13
Svitlodarsk (government-controlled, 57km NE of Donetsk)	3-4km SSE	Heard	10	Burst		HMG	16-Nov, 20:34-20:36
	3-4km SE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 20:36
	3-4km SE	Heard	2	Explosion	Undetermined	N/K	16-Nov, 20:38
	3-4km SE	Heard	15	Burst		HMG	16-Nov, 20:38-20:40
	3-4km SE	Heard	5	Explosion	Undetermined	N/K	16-Nov, 21:05
	4-5km SW	Heard	10	Burst		HMG	16-Nov, 21:10
	3-4km SE	Heard	5	Burst		HMG	16-Nov, 22:11
	3-4km SE	Heard	2	Burst		HMG	16-Nov, 22:43
	3-4km SE	Heard	3	Explosion	Undetermined	N/K	16-Nov, 22:52
	3-4km SE	Heard	1	Explosion	Undetermined	N/K	16-Nov, 23:17
	3-4km SE	Heard	5	Explosion	Undetermined	N/K	16-Nov, 23:30-23:35
	3-4km SE	Heard	5	Burst		HMG	16-Nov, 23:30-23:35
	3-4km SE	Heard	2	Explosion	Undetermined	N/K	16-Nov, 23:40
	3-4km SE	Heard	6	Explosion	Undetermined	N/K	16-Nov, 23:45-23:47
	3-4km SE	Heard	3	Explosion	Undetermined	N/K	16-Nov, 23:50
	3-4km SE	Heard	2	burst		HMG	16-Nov, 23:51
	3-4km SE	Heard	2	Explosion	Undetermined	N/K	17-Nov, 10:37
	3-4km SE	Heard	1	Explosion	Undetermined	N/K	17-Nov, 14:40
	3-4km SE	Heard	25	Burst		HMG	17-Nov, 14:42-14:45
	3-4km SE	Heard	8	Explosion	Undetermined	N/K	17-Nov, 14:50
6-7km SE	Heard	43	Explosion	Undetermined	N/K	17-Nov, 15:02-15:07	
3-5km NE	Heard	42	Burst		HMG	17-Nov, 15:16-15:21	
Horlivka (non-government-controlled, 39km NE of Donetsk)	4-5km W	Heard	23	Explosion	Undetermined	N/K	17-Nov, 14:35-14:38
	4-5km W	Heard	45	Explosion	Undetermined	N/K	17-Nov, 14:40
	4-5km W	Heard	38	Burst		HMG	17-Nov, 14:48-15:00
	4-5km W	Heard	27	Explosion	Undetermined	N/K	17-Nov, 15:02-15:10
	4-5km W	Heard	31	Burst		HMG	17-Nov, 15:12-15:15
	1-3km SW	Heard	21	Burst		Small arms	17-Nov, 16:32
Tarasivka (government-	4-6km S	Heard	2	Explosion	Undetermined	N/K	17-Nov, 11:45

controlled, 43km NW of Donetsk)							
SMM camera in Kriakivka (government-controlled, 38km NW of Luhansk)	2-4km SW	Recorded	7	Projectile	WNW to ESE	N/K	16-Nov, 21:10
	2-4km SW	Recorded	3	Projectile	WNW to ESE	N/K	16-Nov, 21:11
N edge of Popasna (government-controlled, 69km W of Luhansk)	3-4km E	Heard	2	Burst	Assessed as outside the Zolote disengagement area	HMG	16-Nov, 18:12-18:22
	3-4km E	Heard	5	Shot	Assessed as outside the Zolote disengagement area	IFV	16-Nov, 18:12-18:22
SE outskirts of Popasna (government-controlled, 69km W of Luhansk)	3-4km SE	Heard	71	Explosion	Undetermined	N/K	17-Nov, 13:33-13:45
S edge of disengagement area near Zolote (government-controlled, 60km W of Luhansk)	2-4km ESE	Heard	7	Shot	Assessed as outside the disengagement area	Small arms	17-Nov, 10:24-10:35
	4-6km SW	Heard	4	Explosion	Undetermined (assessed as outside the disengagement area)	N/K	17-Nov, 12:11-12:17
Zolote-3/ Stakhanovets (government-controlled, 61km NW of Luhansk)	2-3km SSE	Heard	2	Explosion	Undetermined (unable to assess whether inside or outside the Zolote disengagement area)	N/K	17-Nov, 12:11-12:13
Zolote-1/ Soniachnyi (government-controlled, 61km NW of Luhansk)	4-5km SSW	Heard	2	Explosion	Undetermined (assessed as outside the Zolote disengagement area)	N/K	17-Nov, 13:27-13:28
600m NW of Kalynove-Borshchuvate (non-government-controlled, 61km W of Luhansk)	1.5-2km S	Heard	97	Explosion	Undetermined	N/K	17-Nov, 13:35-13:52