Microseismic Monitoring Report
Sulphur Mines Salt Dome – Louisiana (US)
Borehole and Surface Seismic Arrays

Michael Reese 1/14/2026

Report Period: December 2025

Reference: 2634399-SUL-MR-251201

Report Review: Michael Reese – Baker Hughes LBPG #1428

LBPG review using results from Baker Hughes and Nanometrics Inc.

This review is based solely on microseismic monitoring results provided in the Baker Hughes December 2025 monthly report from the Baker Hughes microseismic team. The report results were passed through the Baker Hughes QA/QC microseismic processing workflows for accuracy and repeatability. No other information, data or observations from the Sulfur Mines Salt Dome operations were provided to support Baker Hughes report results for this PG review. Interpretation of the events is performed by Sulphur Mines Salt Dome. Details of processing and events are provided in the Baker Hughes December 2025 report (appended to this cover letter).

Seismic monitoring and data processing at Sulphur Mines Salt Dome combines the borehole and surface seismic arrays data for microseismic event processing. This includes the follow:

- Nanometrics operates and performs seismic processing for the surface seismic array using broadband network stations.
- Baker Hughes accesses the real time surface array waveform data and integrates it into the borehole waveform data for processing the microseismic location and magnitude.
- Baker Hughes provides event locations and magnitudes for all seismic events at Sulphur Mines Salt Dome using the combined borehole arrays and surface array waveform data.

Alert Level Status: Low (Green)

There was no seismic event with a magnitude >0.5 in the AOI and less than 30 MEQ per day in AOI with magnitudes > -1, thus maintaining the defined alert level status at Low (green).

With the borehole arrays, activity was steady with 123 detections / 44 located events were observed in December 2025 compared to 118 detections / 52 located events observed in November 2025. There were 30 events reported in the AOI. Within AOI caverns: AOI-PPG-06 (7 events), AOI-PPG-07 (3 events), AOI-PPG-02 (5 events), AOI-LGS-02 (4 events), AOI-PPG-16 (2 events), AOI-PPG-04 (2 events) AOI Caprock (6 events), and AOI-Flank (1 event). There were 14 events outside the AOI with Flank (10 events), Caprock (1 event), PPG-06 (2 events), and PPG-16 (1 event). The maximum magnitude of -0.32 (mean -1.51) was reported in AOI-PPG-02 (2620 ft.). No rockfall detections observed. The depths of all observed events from 950 ft to 5220 ft.

Baker Hughes

MICROSEISMIC MONITORING MONTHLY REPORT: December 2025

Sulphur Mines Salt Dome – Louisiana (US)

2634299-SUL-MR-251201

Client / Site	Sulphur Mines Salt Dome
Recipient	Joshua Bradley (Westlake) Coleman Hale (Lonquist) Andrew Jupe (Altcom)
Reference	2634299-SUL-MR-251201
Period ***from***	2025/12/01
to	2025/12/31

Revision history

Version	Date	Issued by	Verified by	Approved by	Description
1.0	2026/01/14	E. FORTIER	G. REGIS	JM. EMBRY	Monthly report

Acronyms

Acronym	Signification
N/A	Not Applicable
PGV	Peak Ground Velocity
AOI	Area Of Interest

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Summary

Network & IT status	**System Uptime**	100 % - Borehole arrays 100 % - Surface Network
	Digitizers connectivity	Continuous, with no acquisition stops

	Sensors / Noise level	• **Borehole arrays**: 100 %
		  ○ **PPG-6** (6 levels)→ noise level: 5 to 20 nm/s (RMS) except sensors PPG-6.1Z with 60 nm/s
		  ○ **PPG-2** (6 levels) → noise level: 5 to 30 nm/s (RMS) except sensors PPG-2.3 [40; 300nm/s] and PPG-2.6 [20; 70 nm/s]
		• **Surface receivers**: 100 %
		  ○ 6 sensors (3-axis) → N/A

Seismic activity	**BOREHOLE ARRAY**	
	Detections	123
	(of which) Located	44
	Max magnitude	-0.3
	Max PGV	0.0369 mm/s
	Min depth	950 ft
	Max depth	5,220 ft
	Number of alerts in the month	**0 – No alert triggered in December 2025**

PGV = Peak Ground Velocity – Maximum vibration measured on the sensors (mm/s)

Introduction

I. Alert Level Status

During December 2025 the alert level status was: Low (Green). Alert level criteria are listed in Appendix 1.

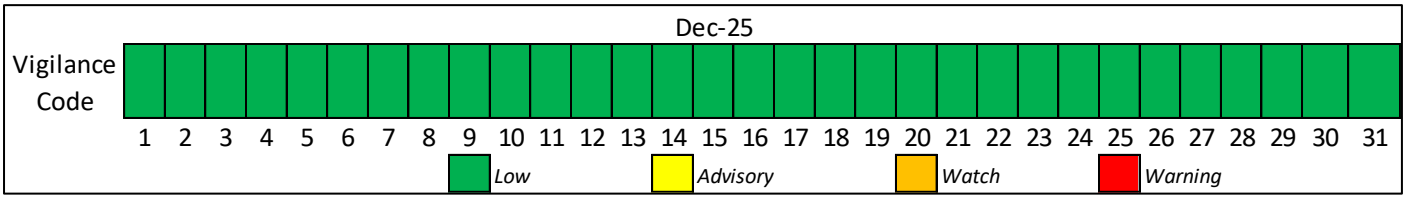

Figure 1: Alert status level during December 2025.

II. Seismic Network

Microseismic monitoring in Sulphur Mine Salt Dome is executed by:

- **Two borehole arrays**
  - Baker Hughes Microseismic Services group operates and processes data of the borehole seismic arrays located in PPG Well No. 006-X and PPG Well No. 020. The seismic array locations are shown in Figure 2, and the coordinates are listed in the Appendix 2. The borehole arrays were fully functional in December 2025.
- **A surface network, composed by 6 Broadband Trillium**
  - Nanometrics operates the surface broadband array, while Baker Hughes processes the data. The broadband station locations are shown in Figure 2 and listed in Appendix 2.

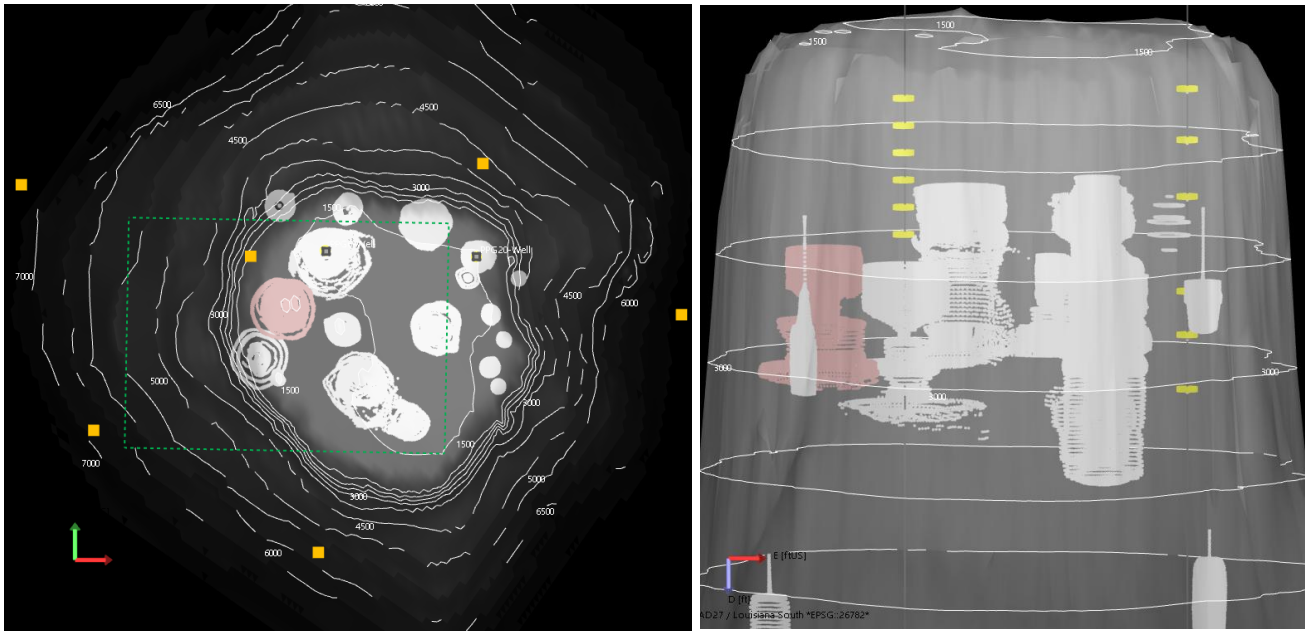

Figure 2: Map (left) and West-East cross section (looking from the South) of the Sulphur Mines Salt Dome. The salt boundary is indicated by gray contour lines. The wellbores with the borehole array sensors are marked by yellow dots for PPG No. 006X and PPG No. 020. Cavern 7 is represented with a red sonar survey. The proposed AOI is indicated on the map view by the green square. The surface network is indicated by the orange squares.

Microseismic activity during reporting period

- In December 2025, 123 seismic events have been detected by the borehole arrays, **44** events had waveforms with sufficient signal to noise ratio to compute their location and magnitude.
  Amongst the 44 located events:
  - 30 are located inside the AOI (Area of Interest) and distributed as follows (Figure 4):
    - 7 events associated with the cavern PPG-06.
    - 3 events associated with the cavern PPG-07.
    - 4 events associated with the cavern LGS-02.
    - 2 events associated with the cavern PPG-16.
    - 5 events associated with the cavern PPG-02.
    - 2 events associated with the cavern PPG-04.
    - 6 events in the cap-rock.
    - 1 event located on the flank.
  - 14 events are located outside the AOI and distributed as follows:
    - 2 events associated with the cavern PPG-06.
    - 1 event associated with the cavern PPG-16.
    - 1 event on the cap-rock.
    - 10 events on the flank of the salt dome.

- The maximum magnitude during this period was -0.3, that occurred on 2025/12/13 16:20:33 (CST), on the cavern AOI-PPG-02.
- No rockfall event has been detected in December 2025.

The catalog of the located events is presented in Appendix 3.

I. Distribution of the microseismic event

The histogram below shows the number of the located and non-located events during December 2025.

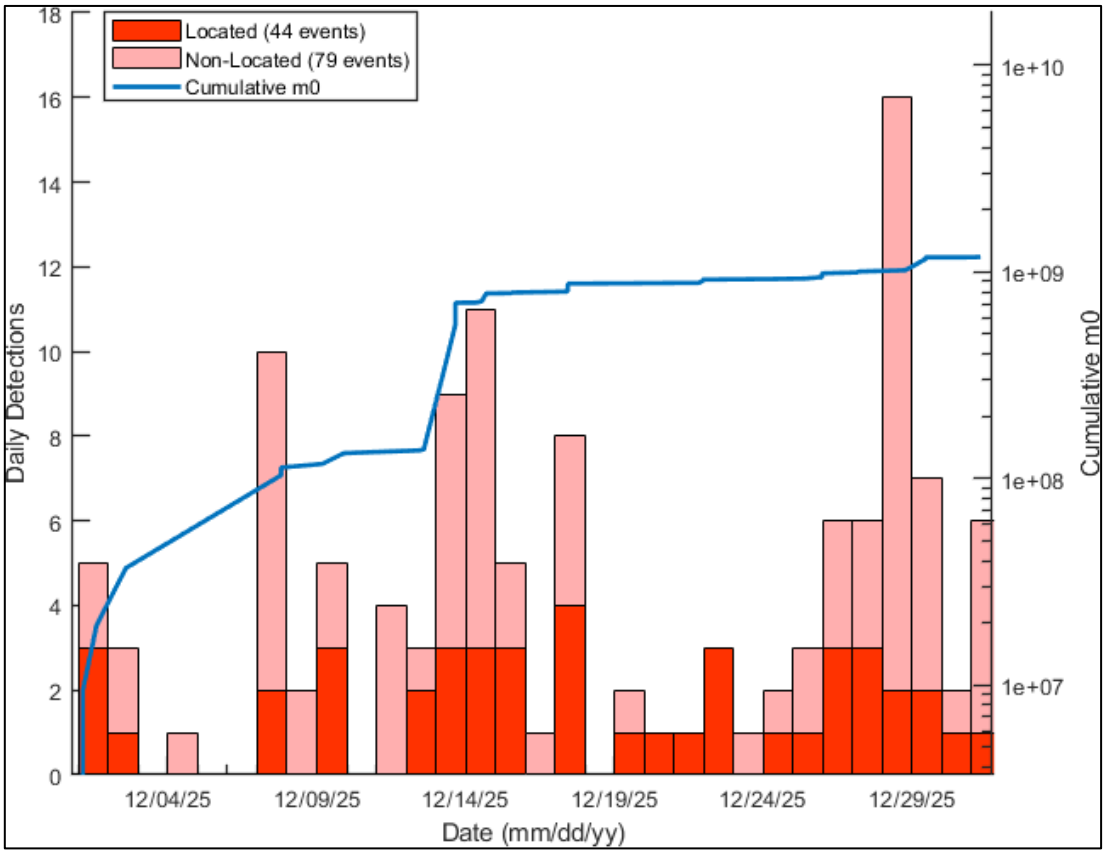

Figure 3: Daily distribution of all events during December 2025. Dark color represents the located events while light one shows the not located events. Blue line represents the cumulative seismic moment Mo for the located events.

Figure 4 shows the distribution of the events by area. In December 2025, the seismicity occurred mainly in the caverns PPG-06 (10 cumulated events) & PPG-02 (5 events) and on the flank (11 events) & Cap Rock (7 events).

According with Figure 5, which shows the cumulated seismic energy with respect to the areas, the main release of seismic energy occurred on PPG-02 (with the Mw = -0.3 event).

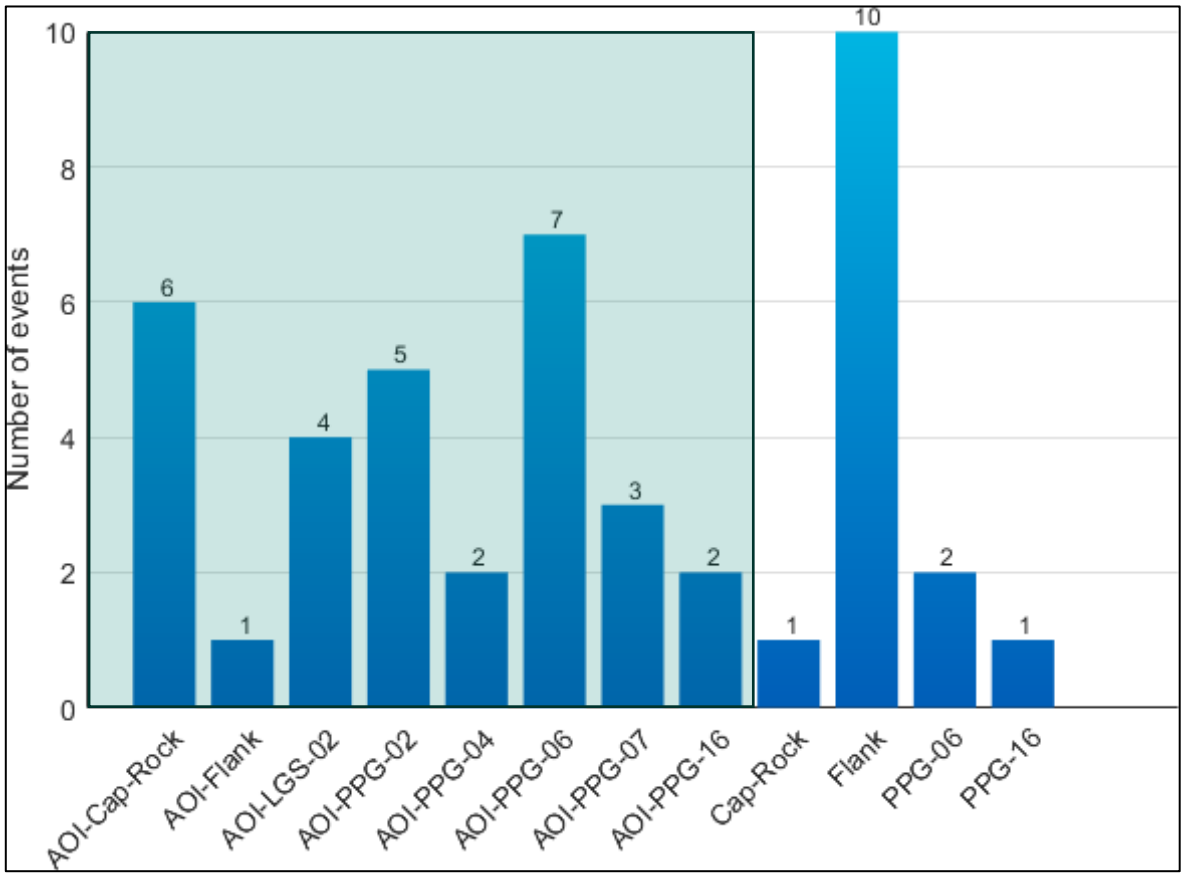

Figure 4: Events distribution by associated cavern. The green rectangle indicates the events in the AOI.

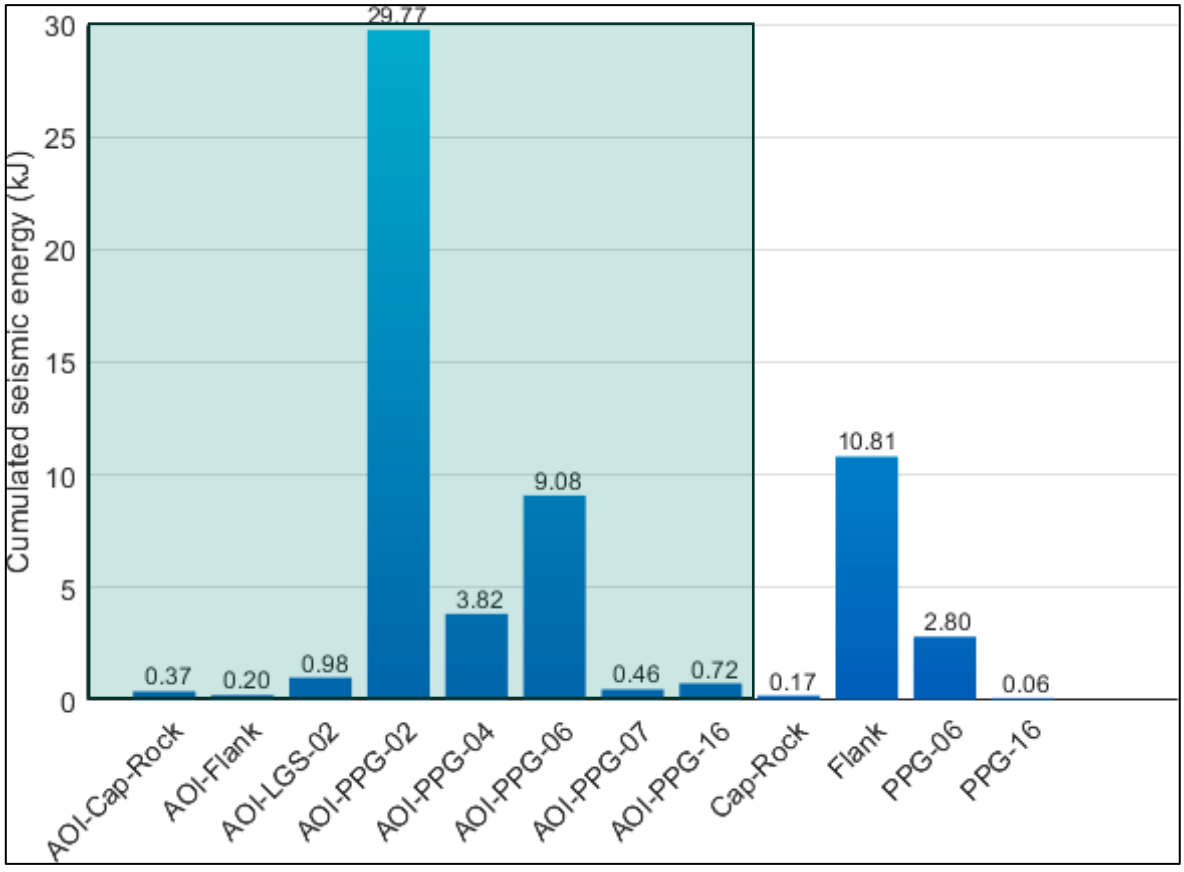

Figure 5: Events energy distribution by cavern. The green rectangle indicates the events in the AOI.

Event Location

The location maps are presented in the report as:

- All events location: inside and outside the AOI (Figure 6 and Figure 7).
- Events located in the AOI (Figure 8, Figure 9, Figure 10).

I. All events' location (inside and outside AOI)

The figures below show the events' location using the borehole arrays.

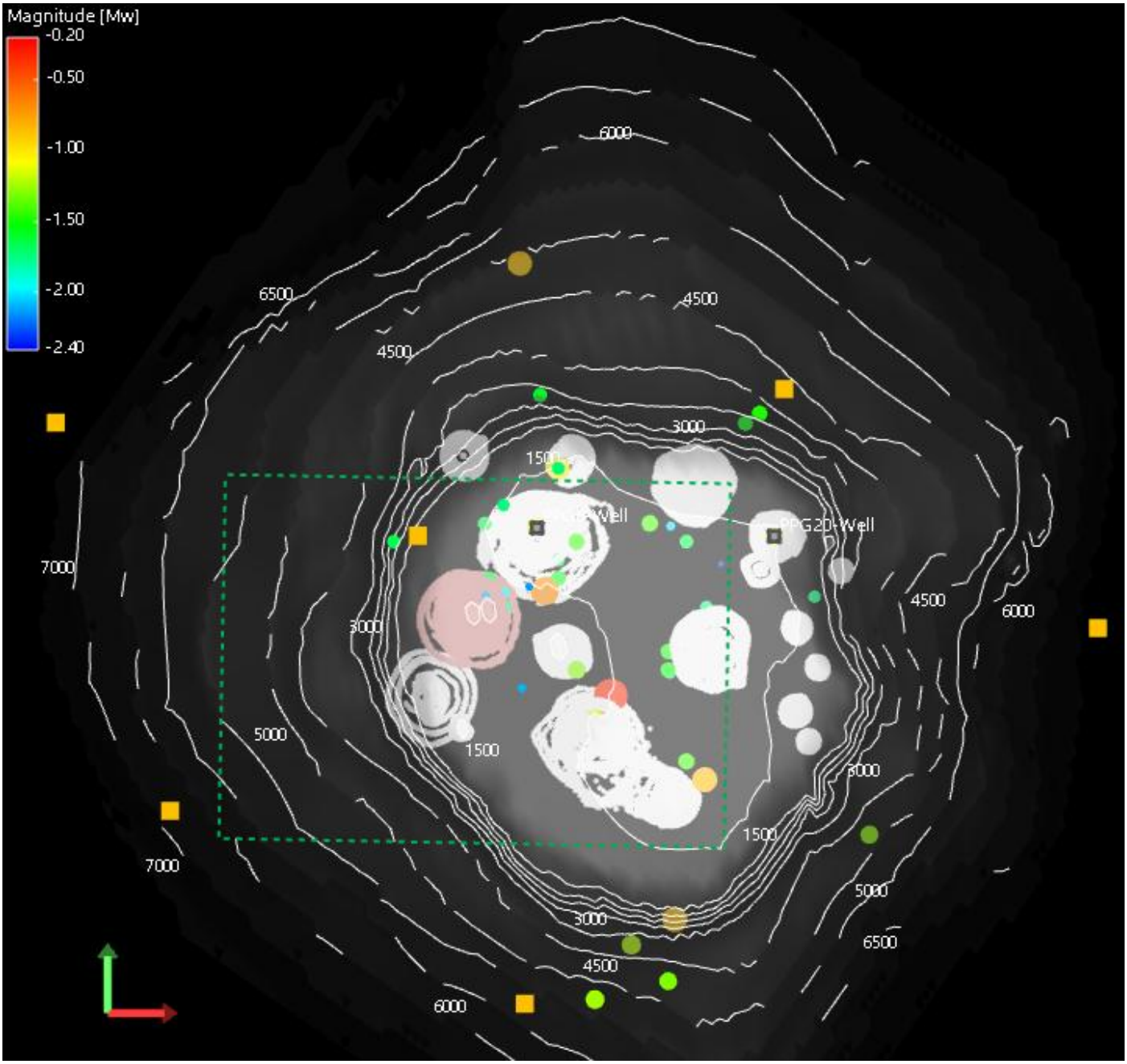

Figure 6: Map of the located events in December 2025. The events are colored, from blue to red, and sized by magnitude; the green rectangle represents the AOI, the orange squares represent the surface stations.

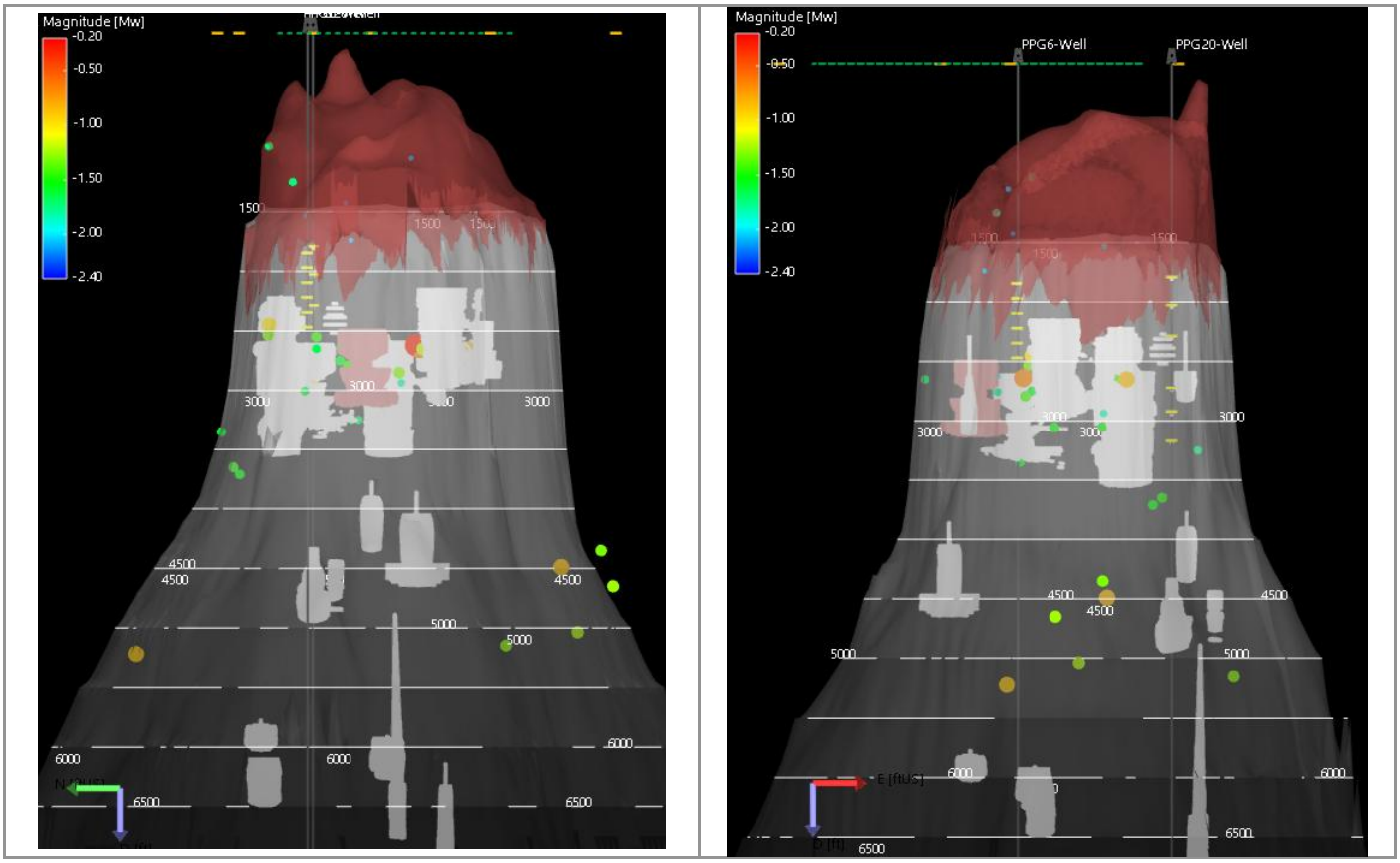

Figure 7: Cross sections W-E (right) looking from the South, and N-S (left), looking from the West. The events are colored, from blue to red, and sized by magnitude.

II. Event Locations in AOI

The figures below show the location of the events inside the AOI.

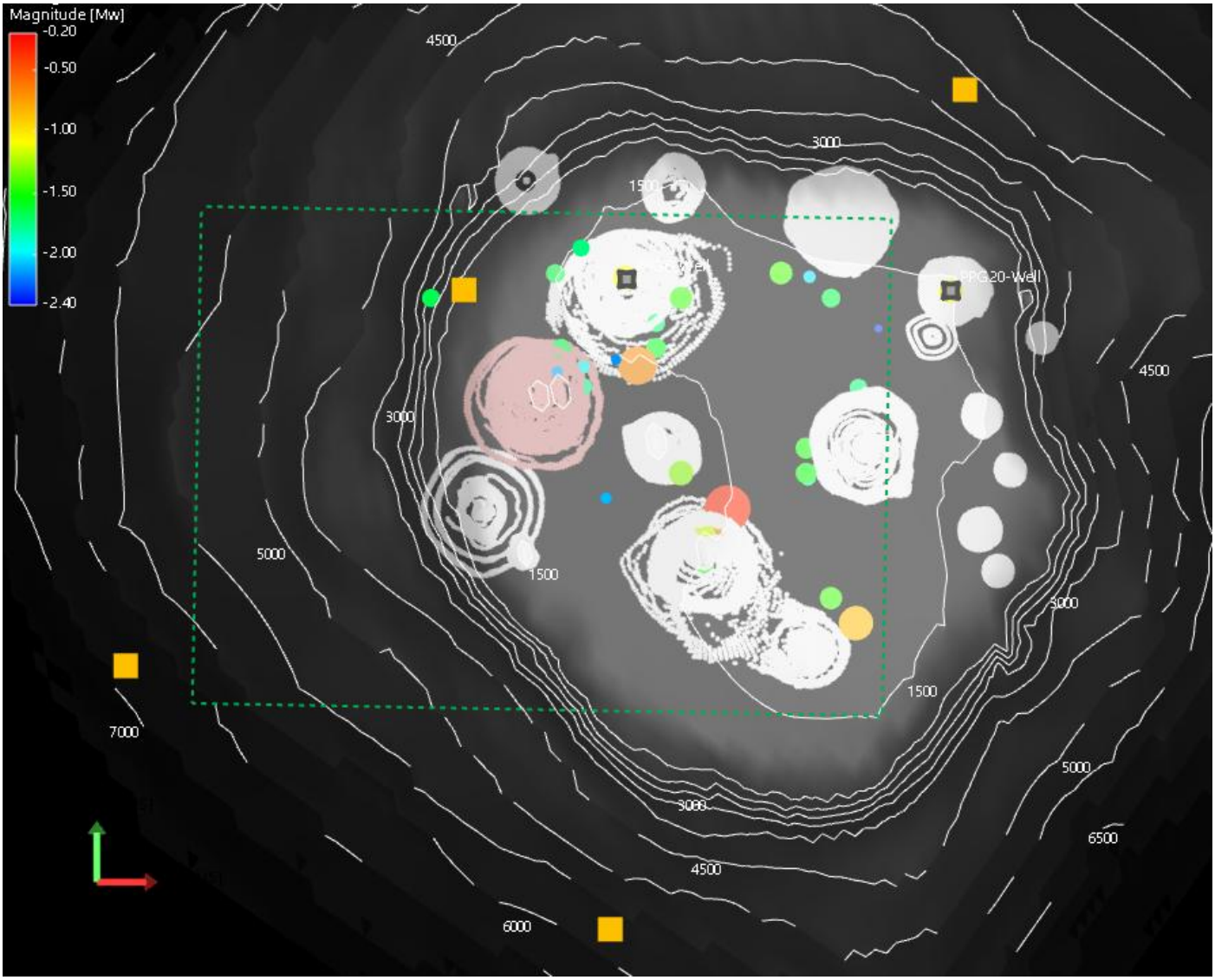

Figure 8: Map of the located events inside the AOI in December 2025. The events are colored, from blue to red, and sized by magnitude; the green rectangle represents the AOI, the orange squares represent the surface stations.

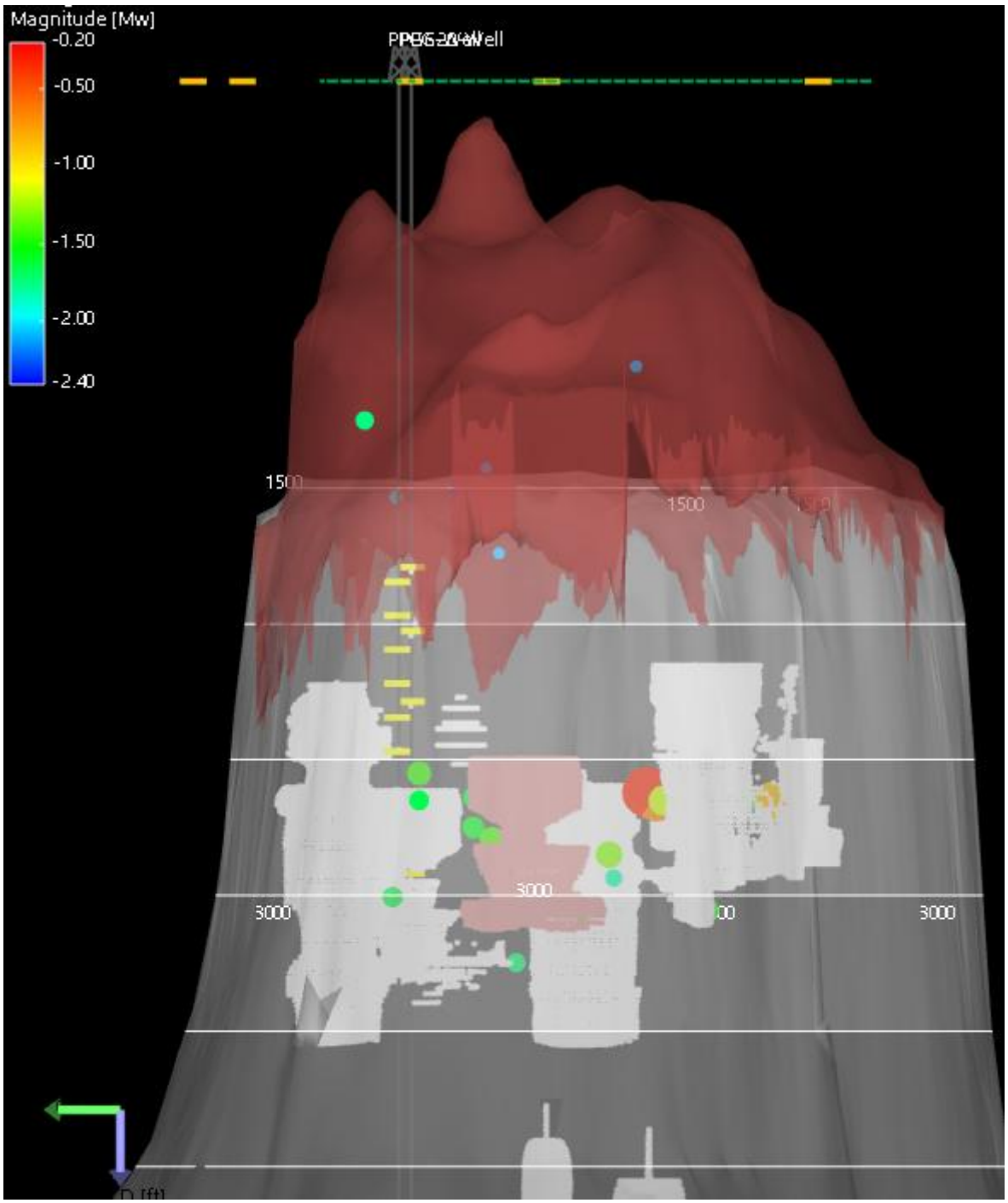

Figure 9: Cross sections N-S (looking from West) of the located events. The events are colored, from blue to red, and sized by magnitude.

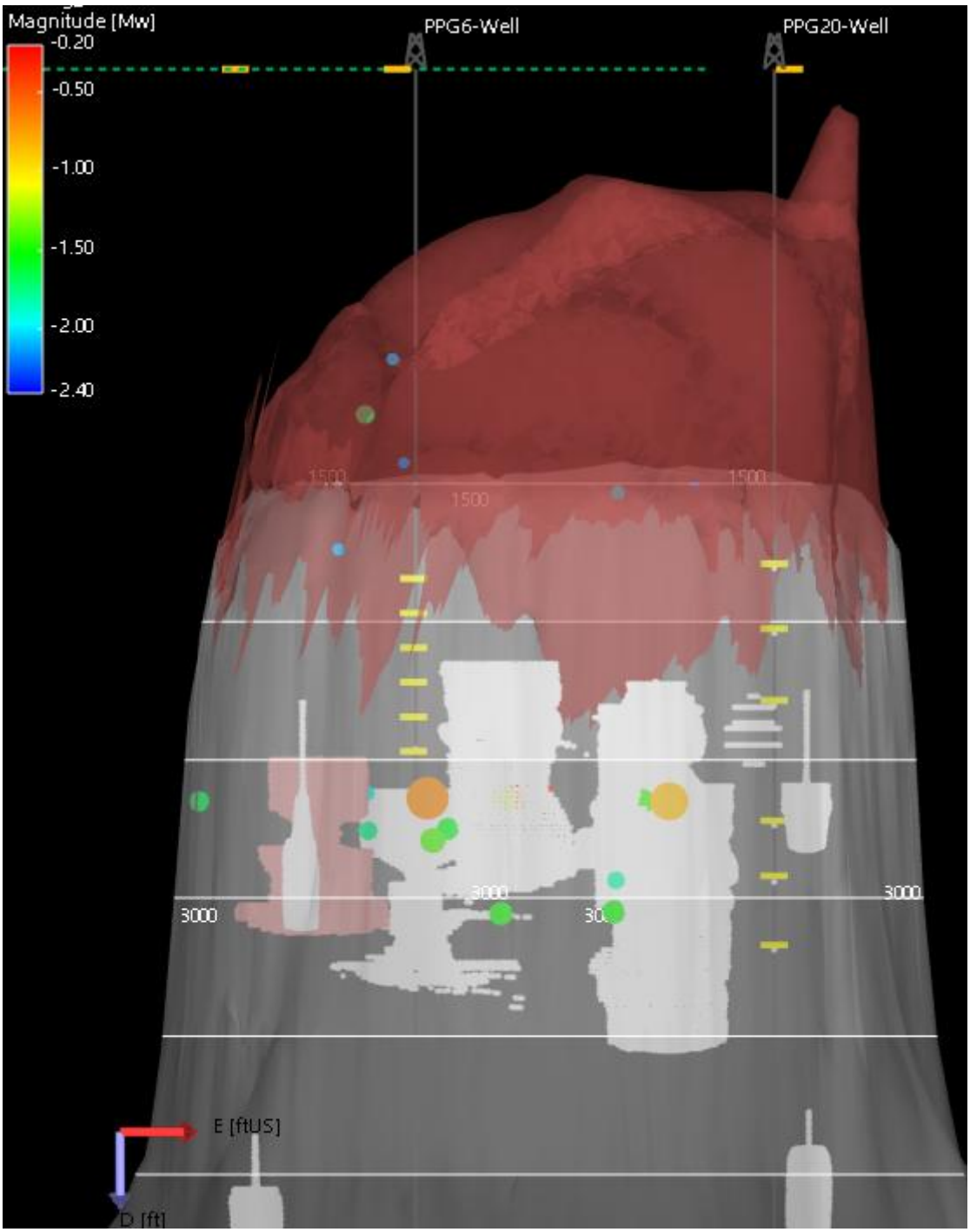

Figure 10: Cross sections W-E (looking from south) of the located events. The events are colored, from blue to red, and sized by magnitude.

Magnitude and depth distribution

The figure below shows the distribution of the moment magnitudes in December 2025. The values vary between -2.3 and -0.3, median value is -1.51.

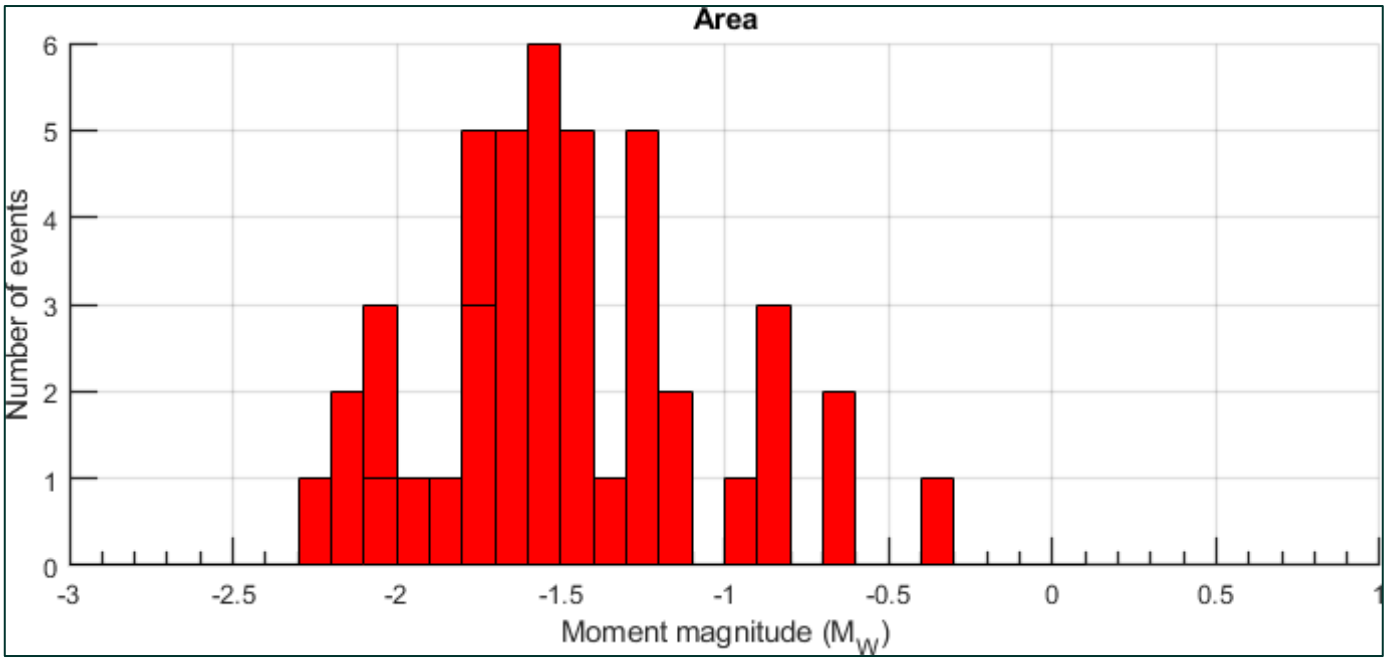

Figure 11: Distribution of magnitudes (Mw) for located events in December 2025.

The figure below shows the depth distribution in December 2025 for all the located events.
Events are located between 950 ft and 5,220 ft. It is possible to distinguish 3 main groups:

- The first one between 950 ft and 1,739 ft - above the caverns depth and associated with events located in the Cap-Rock,
- A second one between 2,450 ft and 3,248 ft - associated with events located at depth of the caverns,
- A third between 3,250 ft and 5,220 ft - associated with events located at the flank depth.

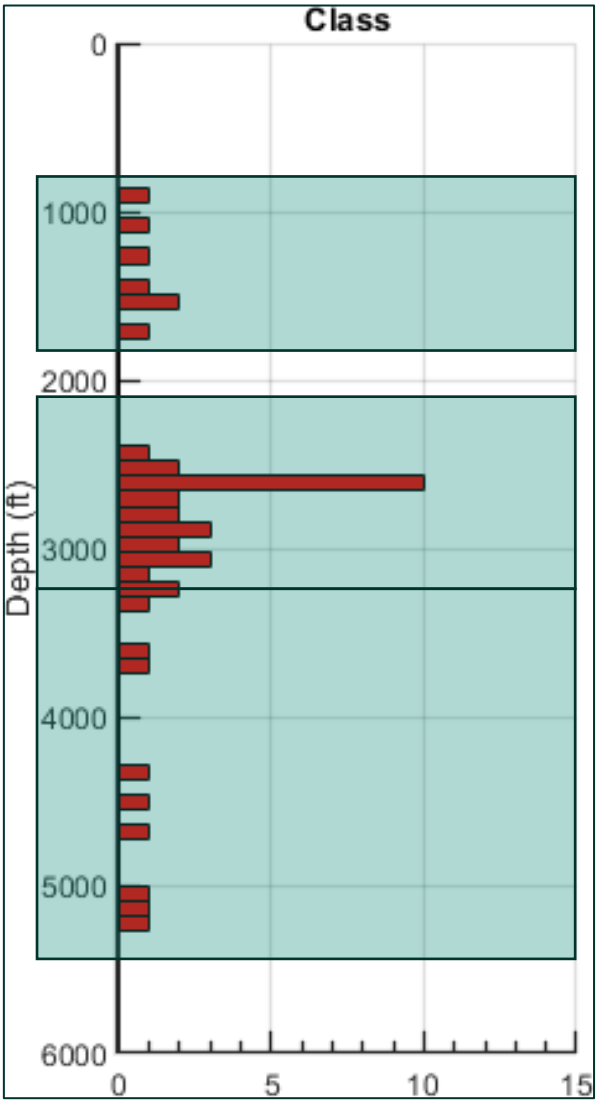

Figure 12: Distribution of the depths for all the events located events in December 2025.

Microseismic history from the beginning of the acquisition

I. History of detections.

In December 2025, the total number of detections (located and not-located events) was similar with respect to the previous month (123 detected events in December 2025 compared with 118 detected events in November).
The number of located events slightly decreased in December 2025 (44 located events) with respect to November (52 located events).

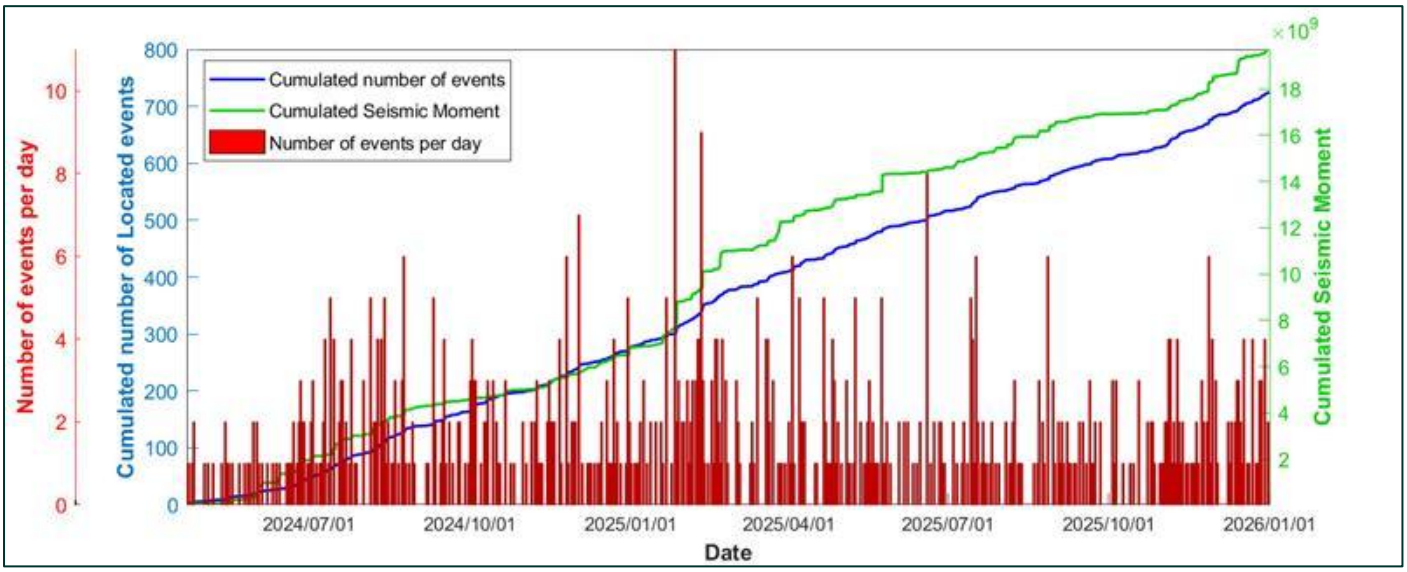

Figure 13: Distribution of the located microseismic events since the beginning of the acquisition on 04/21/2024. Blue line represents the cumulated number of located events. Green line represents the cumulated seismic moment Mo.

II. Historical magnitude distribution.

Figure 14 shows the moment magnitude distribution since the beginning of the acquisition. Dark color bars present the current monthly period and light red color bars present the distribution since the beginning of the acquisition (April 21, 2024).

Since the beginning of the acquisition events magnitude are between -2.6 and -0.2 (for 725 located events). The median value of the magnitude since the beginning of the acquisition is -1.47.

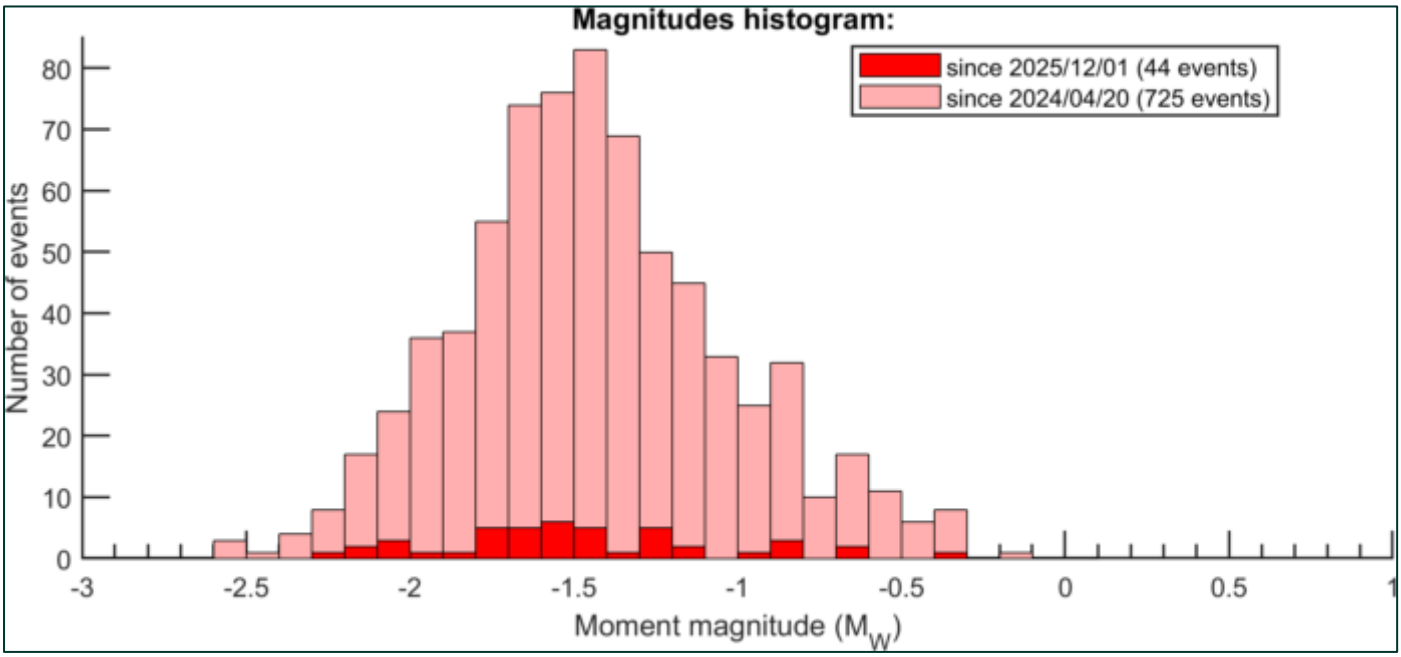

Figure 14: Distribution of magnitude (Mw) for located events. Dark color bars present the current monthly period (December 2025) and light color bars present the distribution since the beginning of the acquisition (from April 21,2024).

III. History of the event locations.

History in Cap-Rock and on the Flank

The figure below shows the map and cross section of all the events located in the cap-rock and in the salt flank since April 21, 2024.

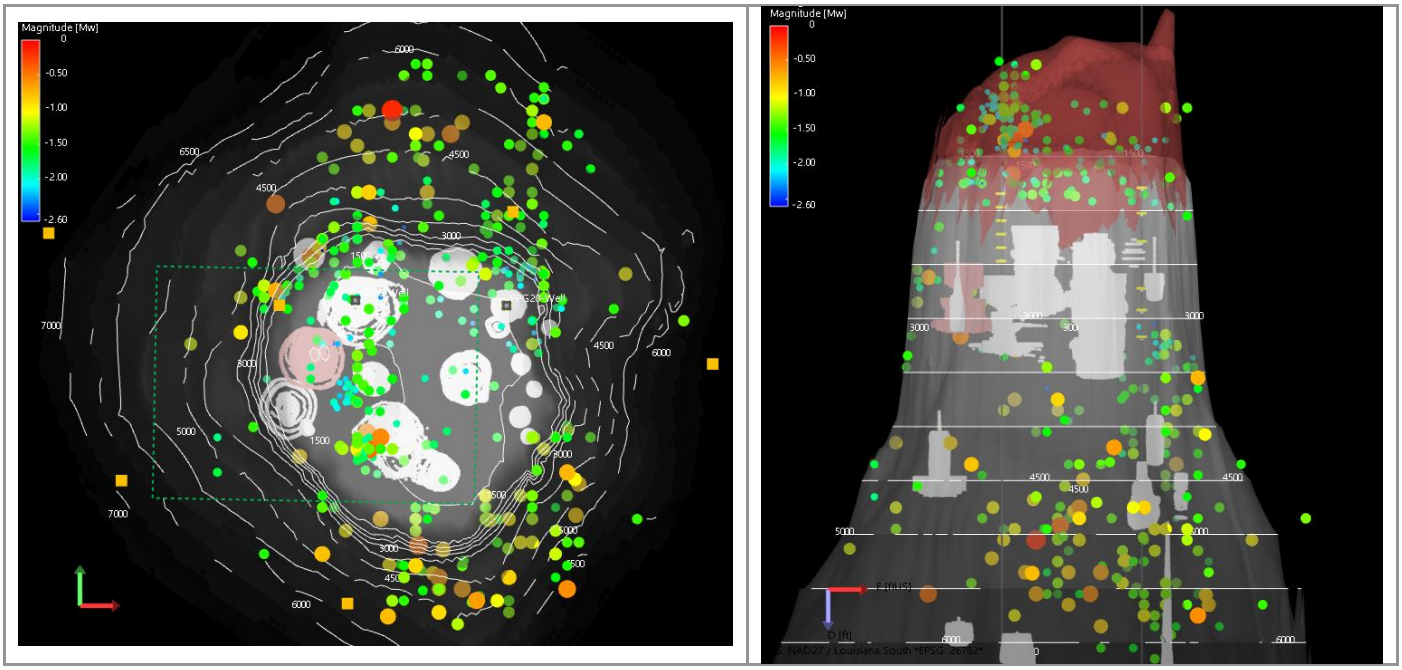

Figure 15: Map view (left) and W-E side view (right) of the cumulative seismicity recorded since the beginning of the acquisition, located in the Cap Rock (red formation) and on the Flank. Green rectangle represents the AOI area. The events are colored, from blue to red, and sized by magnitude.

History around the caverns

The figures below show the history of the events associated with the caverns since the beginning of the acquisition (April 21, 2024).

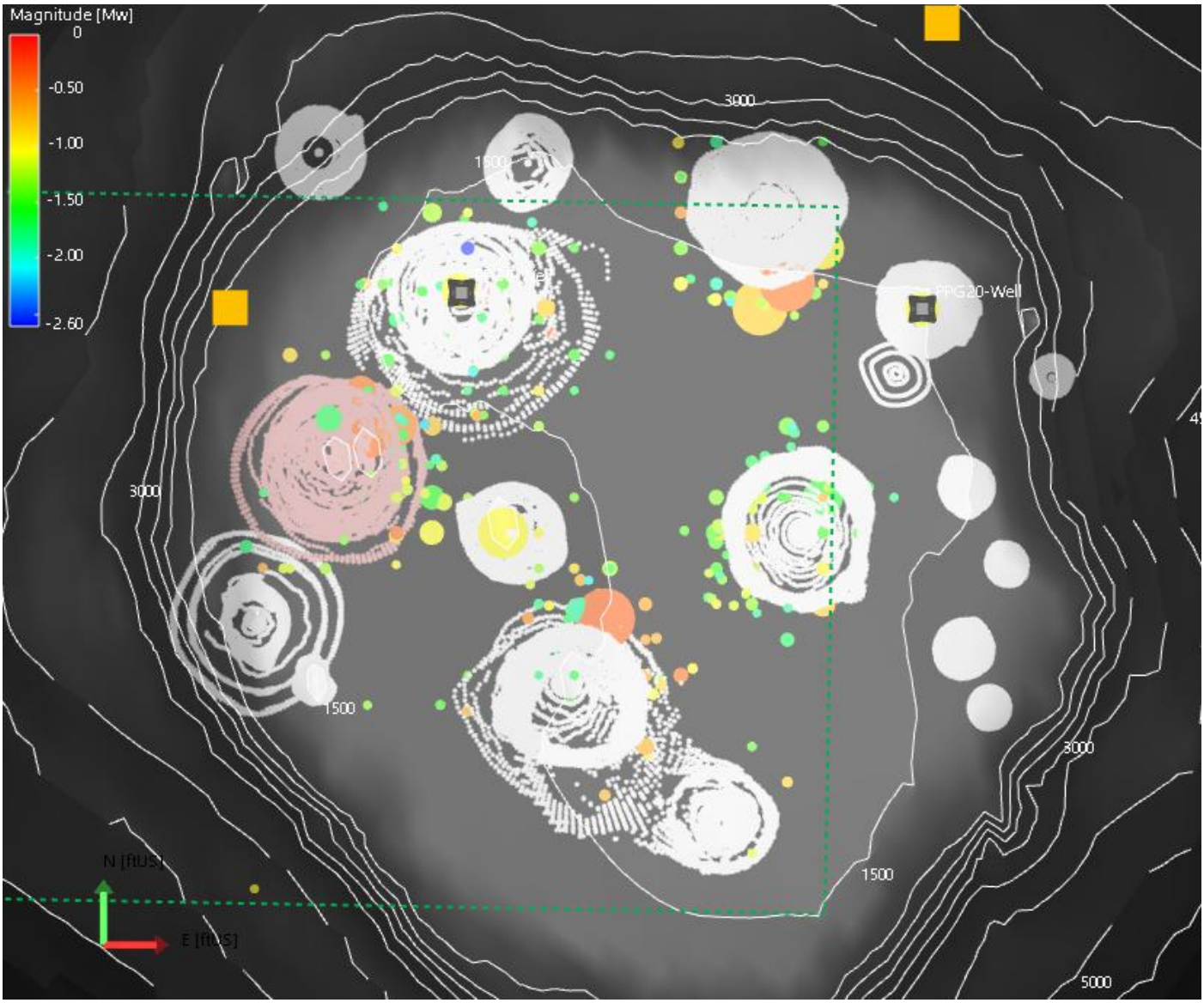

Figure 16: Map view of the events located in proximity to the caverns since the beginning of the acquisition (April 21, 2024). The events are colored, from blue to red, and sized by magnitude.

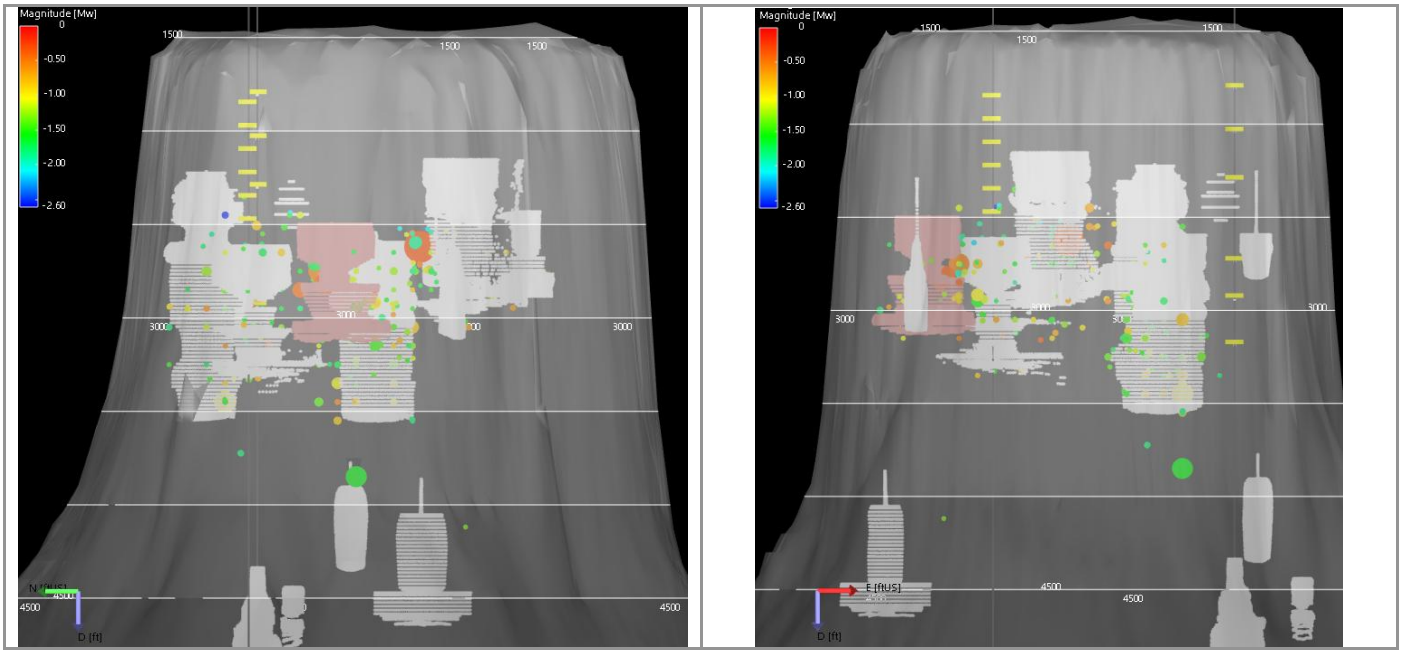

Figure 17: Cross sections W–E (right), looking from the South; and N–S (left), looking from the West of the events located close to the caverns since the beginning of the acquisition. The events are colored, from blue to red, and sized by magnitude.

APPENDIX 1 – Alert level criteria

Proposed Microseismic Alert Level Criteria and Response for Sulphur Mines Dome.

Alert Status	Criteria	Response
Low (GREEN)	No events with magnitude ≥0.5 in AOI and/or Less than 30 MEQ per day in AOI with magnitudes ≥ -1	Once per week data processing, with previous monthly microseismic activity summary in the AOI is provided by the 15th of the following month to LDNR IMD.
Advisory (YELLOW)	Event with magnitude ≥0.5 and <1.0 in AOI and/or Count of MEQ per day ≥30 and <40 in AOI with magnitudes ≥ -1	Daily data processing M-F. Weekly reporting is provided LNDR IMD with activity summary from the previous week. Status remains active until seismic levels within the AOI reach "low"(green) level for 1 day.
Watch (ORANGE)	Event with magnitude ≥1 and <1.5 in AOI and/or Count of MEQ ≥40 and <50 with magnitudes ≥ -1 in AOI	Seven days per week data processing, 2x week reporting with activity for the previous days is provided via email and text message notifications to IMD. Status remains active until seismic levels within the AOI reach Advisory or Low criteria for 2 consecutive days.
Warning (RED)	Event with magnitude ≥1.5 in the AOI and/or Count of MEQ ≥50 with magnitudes ≥ -1 in the AOI	Seven days per week data processing, daily reporting with online meetings with stake holders as needed. The warning status level remains active until seismicity levels within the AOI reach a lower status level for 2 consecutive days.

APPENDIX 2 – Network Coordinates

Borehole arrays coordinates:

Wellbore	Sensor	TVD SS	Easting (ft)	Northing (ft)
PPG 6x	Tool 1	1844	1343141	583425
PPG 6x	Tool 2	1969	1343141	583425
PPG 6x	Tool 3	2094	1343141	583425
PPG 6x	Tool 4	2219	1343141	583425
PPG 6x	Tool 5	2344	1343141	583425
PPG 6x	Tool 6	2469	1343141	583425
PPG 20	Tool 1	1790	1344445	583372
PPG 20	Tool 2	2025	1344445	583372
PPG 20	Tool 3	2285	1344445	583372
PPG 20	Tool 4	2720	1344445	583372
PPG 20	Tool 5	2920	1344445	583372
PPG 20	Tool 6	3170	1344445	583372

Surface network coordinates:

Station	LAT WGS84	LON WGS84	Date start	Date end
Temp_1a	30.2575	-93.4123	1/30/2023	2/9/2023
Temp_1b	30.2534	-93.4135	2/9/2023	4/3/2023
Temp_2a	30.2570	-93.4097	1/30/2023	2/9/2023
Temp_2b	30.2555	-93.4132	2/9/2023	2/27/2023
Temp_2c	30.2547	-93.4138	2/27/2023	4/5/2023
Temp_3a	30.2533	-93.4091	1/30/2023	2/9/2023
Temp_3b	30.2563	-93.4146	2/9/2023	4/5/2023
Temp_4a	30.2486	-93.4123	1/30/2023	2/27/2023
Temp_4b	30.2507	-93.4121	2/27/2023	3/8/2023
Temp_4c	30.2506	-93.4100	3/8/2023	3/15/2023
Temp_4d	30.2503	-93.4119	3/15/2023	est 4/3/2023
Temp_5a	30.2502	-93.4156	1/30/2023	2/27/2023
Temp_5b	30.2507	-93.4153	2/27/2023	3/15/2023
Temp_5c	30.2504	-93.4140	3/15/2023	est 4/3/2023
Temp_6a	30.2532	-93.4166	1/30/2023	3/15/2023
Temp_6b	30.2529	-93.4161	3/15/2023	4/4/2023
Temp_7a	30.2547	-93.4161	1/30/2023	4/3/2023
Semi Perm S01	30.2453	-93.4073	4/4/2023	
Semi Perm S02	30.2571	-93.4098	4/6/2023	
Semi Perm S03	30.2536	-93.4091	4/6/2023	
Semi Perm S04	30.2470	-93.4213	4/5/2023	5/12/2023
Semi Perm S04_1	30.2506	-93.4204	5/12/2023	
Semi Perm S05	30.2564	-93.4224	4/5/2023	
Semi Perm S06	30.2532	-93.4167	4/5/2023	
Semi Perm S07	30.2547	-93.4162	4/5/2023	
SUL01 trillium	30.2452	-93.4071	9/20/2023	3/12/2024
	LAT NAD 83	LON NAD 83		
SUL02 trillium	30.2570	-93.4098	9/13/2023	
SUL03 trillium	30.2505	-93.4203	9/12/2023	
SUL04 trillium	30.2563	-93.4224	9/12/2023	
SUL05 trillium	30.2547	-93.4161	9/13/2023	
SUL06 trillium	30.2535	-93.4043	3/12/2024	
SUL07 trillium	30.2477	-93.4141	3/12/2024	

Seismic Station locations and operational dates at Sulphur Mines Dome (to November 1, 2024).

Temporary Station locations and start and end dates provided by Westlake.

Trillium Station locations provided by Nanometrics and Westlake (Trillium SUL 02-07).

APPENDIX 3 - Catalogue of located events

#	Event origin time CST (UTC-5/-6)	Easting (ft)	Northing (ft)	Depth (ft)	ΔEasting (ft)	ΔNorthing (ft)	ΔDepth (ft)	Mw	Area
1	12/01/2025 03:20:35.712	1343266	583244	2750	395	786	633	-1.69	AOI-PPG-06
2	12/01/2025 03:21:49.441	1343266	583144	2750	419	825	684	-1.56	AOI-PPG-06
3	12/01/2025 14:25:42.860	1343211	583075	2792	449	877	722	-1.40	AOI-PPG-06
4	12/02/2025 14:03:24.045	1343466	580844	4650	955	3503	1703	-1.24	Flank
5	12/07/2025 19:30:53.338	1344066	582044	2650	333	1677	830	-0.85	AOI-PPG-04
6	12/07/2025 19:31:28.549	1343966	582144	2650	438	1636	1336	-1.42	AOI-PPG-04
7	12/09/2025 04:38:09.209	1342886	583143	2638	352	787	460	-1.62	AOI-PPG-07
8	12/09/2025 21:35:34.646	1343366	582644	2850	395	1250	1378	-1.29	AOI-PPG-02
9	12/09/2025 23:59:45.737	1344156	583222	1503	238	753	656	-2.29	AOI-Cap-Rock
10	12/12/2025 10:45:05.194	1342366	583344	2650	332	846	711	-1.66	AOI-Flank
11	12/12/2025 14:48:45.916	1343880	583429	1532	236	788	684	-2.01	AOI-Cap-Rock
12	12/13/2025 16:20:33.254	1343552	582503	2620	288	1373	667	-0.32	AOI-PPG-02
13	12/13/2025 16:20:57.314	1343545	582471	2650	309	1447	593	-0.65	AOI-PPG-02
14	12/13/2025 16:21:11.003	1343466	582444	2650	319	1415	669	-1.17	AOI-PPG-02
15	12/14/2025 08:59:44.610	1342870	583050	1739	414	901	556	-2.10	AOI-Cap-Rock
16	12/14/2025 13:31:44.721	1343366	583344	2550	344	676	554	-1.43	AOI-PPG-06
17	12/14/2025 17:12:19.024	1343902	581280	4490	1039	2863	2175	-0.85	Flank

#	Event origin time CST (UTC-5/-6)	Easting (ft)	Northing (ft)	Depth (ft)	△Easting (ft)	△Northing (ft)	△Depth (ft)	Mw	Area
18	12/15/2025 13:35:04.319	1344076	582986	3248	343	913	533	-1.71	AOI-LGS-02
19	12/15/2025 13:40:59.244	1343166	584144	3350	534	1533	985	-1.59	Flank
20	12/15/2025 22:14:06.191	1344166	583744	3150	434	856	761	-2.01	PPG-16
21	12/17/2025 10:57:47.013	1343457	582281	3056	869	1537	1460	-1.50	AOI-PPG-02
22	12/17/2025 11:06:35.565	1343055	584863	5220	775	2630	974	-0.88	Flank
23	12/17/2025 11:17:26.451	1344288	583990	3710	488	1270	696	-1.53	Flank
24	12/17/2025 11:17:33.070	1344366	584044	3650	491	1256	697	-1.47	Flank
25	12/19/2025 14:19:33.658	1342966	583544	1250	428	863	481	-1.74	AOI-Cap-Rock
26	12/20/2025 05:47:54.115	1342973	583068	2621	384	739	682	-1.94	AOI-PPG-07
27	12/21/2025 20:56:57.574	1342977	582989	2757	374	901	505	-1.76	AOI-PPG-07
28	12/22/2025 00:08:04.921	1343665	581142	5038	1019	3279	2110	-1.21	Flank
29	12/22/2025 00:08:19.603	1343866	580944	4350	1043	3209	2242	-1.30	Flank
30	12/22/2025 14:55:51.026	1343066	582544	1050	436	1461	592	-2.08	AOI-Cap-Rock
31	12/24/2025 09:19:33.144	1343966	583344	3050	310	721	569	-1.64	AOI-PPG-16
32	12/25/2025 10:14:25.338	1342863	583442	3006	407	960	505	-1.63	AOI-PPG-06
33	12/26/2025 00:25:56.490	1343242	583751	2533	322	753	660	-1.29	PPG-06
34	12/26/2025 00:26:03.615	1343266	583744	2450	318	724	643	-0.99	PPG-06
35	12/26/2025 08:50:36.161	1344666	583044	3250	366	650	477	-1.73	Flank

#	Event origin time CST (UTC-5/-6)	Easting (ft)	Northing (ft)	Depth (ft)	△Easting (ft)	△Northing (ft)	△Depth (ft)	Mw	Area
36	12/27/2025 05:19:20.991	1343866	582644	2850	514	1127	1088	-1.52	AOI-LGS-02
37	12/27/2025 05:19:50.000	1343874	582626	2936	498	1122	1053	-1.81	AOI-LGS-02
38	12/27/2025 05:20:31.240	1343866	582744	3050	481	1088	1027	-1.50	AOI-LGS-02
39	12/28/2025 19:38:14.403	1344966	581744	5150	928	2482	1662	-1.28	Flank
40	12/28/2025 21:01:11.277	1343766	583444	2850	255	569	386	-1.40	AOI-PPG-16
41	12/29/2025 12:01:53.812	1343192	583074	2639	385	764	500	-0.67	AOI-PPG-06
42	12/29/2025 12:01:59.918	1343187	583079	2644	356	778	530	-1.15	AOI-PPG-06
43	12/30/2025 21:37:06.628	1343106	583097	1425	505	809	452	-2.14	AOI-Cap-Rock
44	12/31/2025 08:28:49.912	1343266	583744	950	357	1268	614	-1.71	Cap-Rock