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Surface Seismic Monitoring Report
Sulphur Mines Salt Dome
Semi-Permanent Seismic Array

Report Period : May 1-15, 2023

Report Date: May 18, 2023

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Sulphur Mines Dome Seismic Monitoring Summary:

- All seven semi-permanent seismic stations are currently operating normally.
- No seismic detections were observed from May 1-15, 2023. The array was triggered by lightning strikes, but no seismic events were observed on any of the seismic stations.
- The semi-permanent stations detection threshold ranges from magnitude ~ -0.5 to 0.5 depending on the time of day.
- Station 4 was moved to a new location on May 12 and now has a lower background noise level.

Semi-Permanent Array Status

All seven semi-permanent seismic stations were operational during the first half of May 2023. The locations of the semi-permanent seismic stations are shown in Figure 1 and the Appendix Table 1 lists the station locations. Jarpe Data Solutions (JDS) continues to provide event-detection and location information.

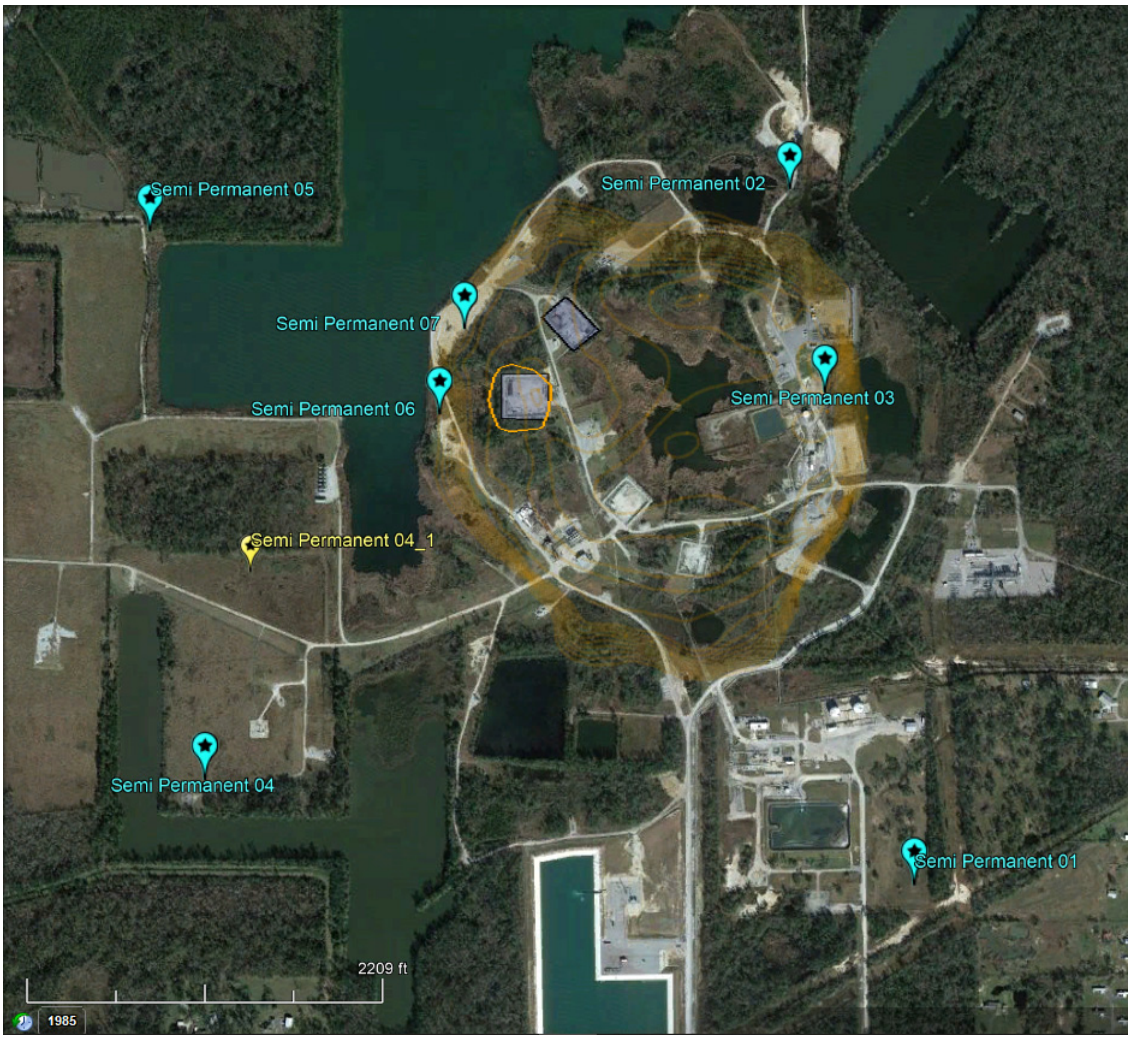

Figure 1. Google map image showing the semi-permanent seismic recording station locations near and at the Sulphur Mines Salt Dome. The semi-permanent stations magnitude detection threshold varies for each station with time (Figure 2).

- The lowest noise / lowest magnitude threshold stations are stations 5 and and 7, with periods of detectability below magnitude -0.5.
- Station 4 was moved to a new location on May 12. The first few days of noise records since the move shows the magnitude detectability of the station has greatly improved and appears to be on the order of magnitude -0.5 to 0 (Figure 2).
- The cultural noise in the area adversely affects the detection thresholds on all the stations from time to time (Figure 2). The detection threshold of the network ranges day to day from magnitude ~ -0.5 to 0.5 depending on the time of day and the noise levels on the various seismic stations. (Figure 2).

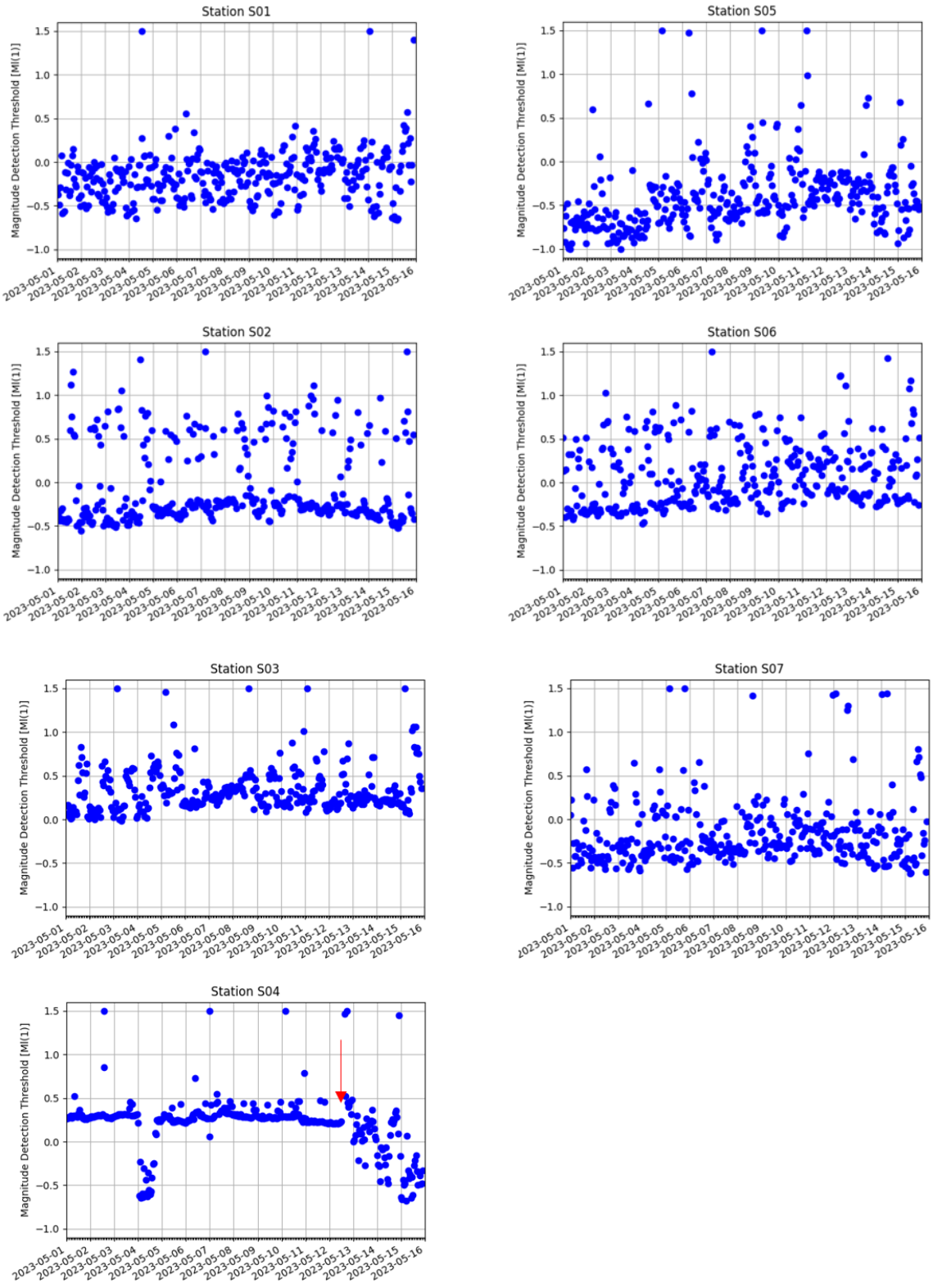

Figure 2. Detection thresholds from each semi-permanent station from May 1-15, 2023. The red arrow on station 4 shows the date of the station move (May 12, 2023). The threshold is based on a theoretical seismic event located 1 km (3280 ft) from the station.

Appendix

Table 1. Seismic Station locations and operational dates at Sulphur Mines Dome (to May 12, 2023). Temporary Station locations and start and end dates provided by Westlake.

Station	LAT WGS84	LON WGS84	Date start	Date end
1a	30.257519	-93.412295	1/30/2023	2/9/2023
1b	30.253427	-93.413504	2/9/2023	4/3/2023
2a	30.257004	-93.409735	1/30/2023	2/9/2023
2b	30.255468	-93.413201	2/9/2023	2/27/2023
2c	30.254707	-93.413785	2/27/2023	4/5/2023
3a	30.253309	-93.409116	1/30/2023	2/9/2023
3b	30.256257	-93.414608	2/9/2023	4/5/2023
4a	30.248590	-93.412296	1/30/2023	2/27/2023
4b	30.250684	-93.412051	2/27/2023	3/8/2023
4c	30.250632	-93.410027	3/8/2023	3/15/2023
4d	30.250303	-93.411914	3/15/2023	est 4/3/2023
5a	30.250159	-93.415560	1/30/2023	2/27/2023
5b	30.250672	-93.415279	2/27/2023	3/15/2023
5c	30.250352	-93.413960	3/15/2023	est 4/3/2023
6a	30.253187	-93.416629	1/30/2023	3/15/2023
6b	30.252864	-93.416142	3/15/2023	4/4/2023
7a	30.254665	-93.416147	1/30/2023	4/3/2023
Semi Perm S01	30.24525	-93.40734	4/4/2023	
Semi Perm S02	30.25707	-93.40979	4/6/2023	
Semi Perm S03	30.25362	-93.40910	4/6/2023	
Semi Perm S04	30.24704	-93.42130	4/5/2023	5/12/2023
Semi Perm S04_1	30.25056	-93.42040	5/12/2023	
Semi Perm S05	30.25635	-93.42238	4/5/2023	
Semi Perm S06	30.25324	-93.41668	4/5/2023	
Semi Perm S07	30.25469	-93.41619	4/5/2023	