



Plan to monitor microseismicity  
at Sulphur Mines Salt Dome:  
Modifications to the  
Broadband Seismic Array  
(LDNR Compliance Order No. IMD 2022-027)



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## Broadband Array Installation

Five broadband seismometers were operational September 13, 2023 at Sulphur Mines salt dome. The seismic array is operated and processed by Nanometrics; the sensors are Nanometrics Trillium Compact 20 second seismometers. (Figure 1, Table 1).



Figure 1. Google Earth map image showing the broadband station locations near and at the Sulphur Mines Salt Dome.

### ***Request to modify seismic array.***

We are requesting permission to modify the seismic array to optimize the monitoring effort by: 1) moving station SUL01 west of its current location, and 2) adding a new broadband sensor, SUL06 on the east side of the monitoring area.

Broadband station SUL01 is consistently the noisiest station in the array since the array has been operational. We are proposing moving the station about 2400 feet to the east of the current location (Figure 2) in an attempt to lower the background noise level.



In addition, we propose an additional station is added to help with azimuthal sensor coverage in the area by adding a new broadband station SUL06. The proposed sensor location is on the east side of Sulphur Mines salt dome (Figure 2).

The proposed new station locations shown in Figure 2 are approximate as we are currently investigating permitting the sites and checking on local ground conditions, etc.

Depending on when IMD DNR permission is given for the proposed changes and landowner permission is received, we hope to have the seismic array modification started in early December 2023 and operational shortly after the installations are complete.



Figure 2. 3. Google Earth map image showing the broadband station locations near and at the Sulphur Mines Salt Dome. The proposed new location for station SUL01 and new station SUL06 are shown with green symbols.

Table 1. Sulphur Mines Salt Dome Seismic Station Locations

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	5/12/2023
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	
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	