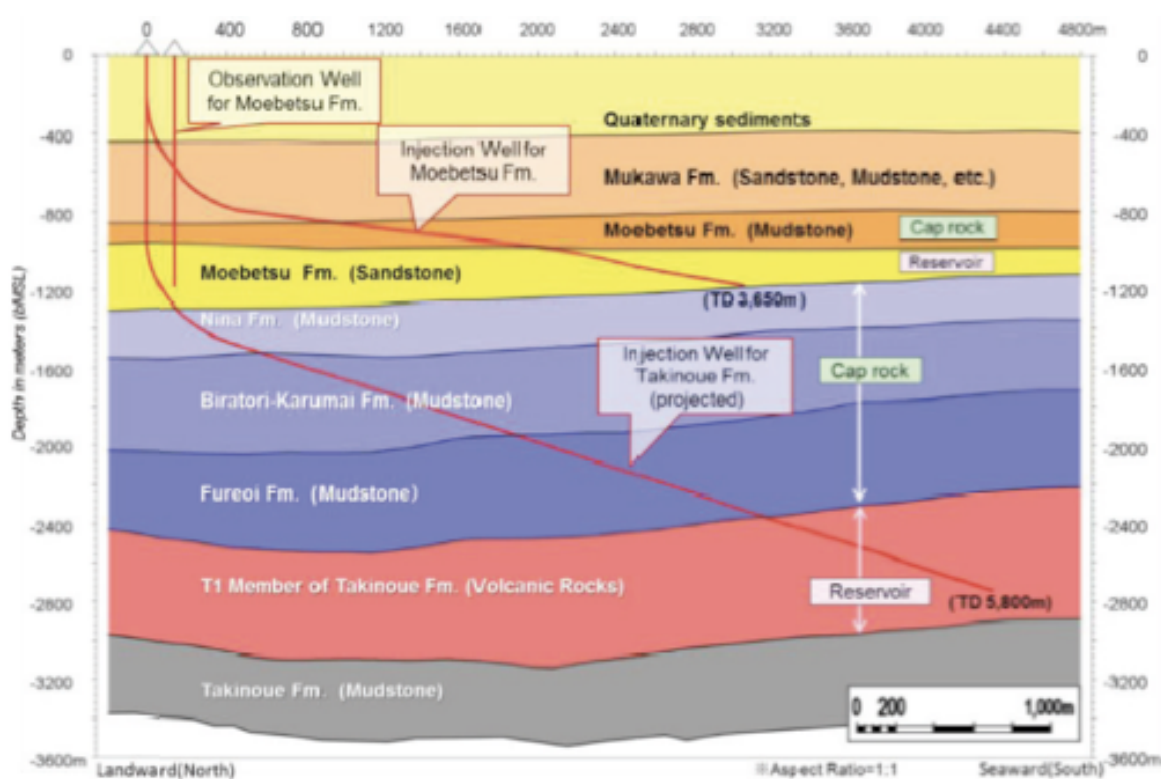


## **Supplementary Materials for**

# **CCS-CO<sub>2</sub> injection: a potential trigger of the 2018 Hokkaido Eastern Iburi earthquake in Japan**

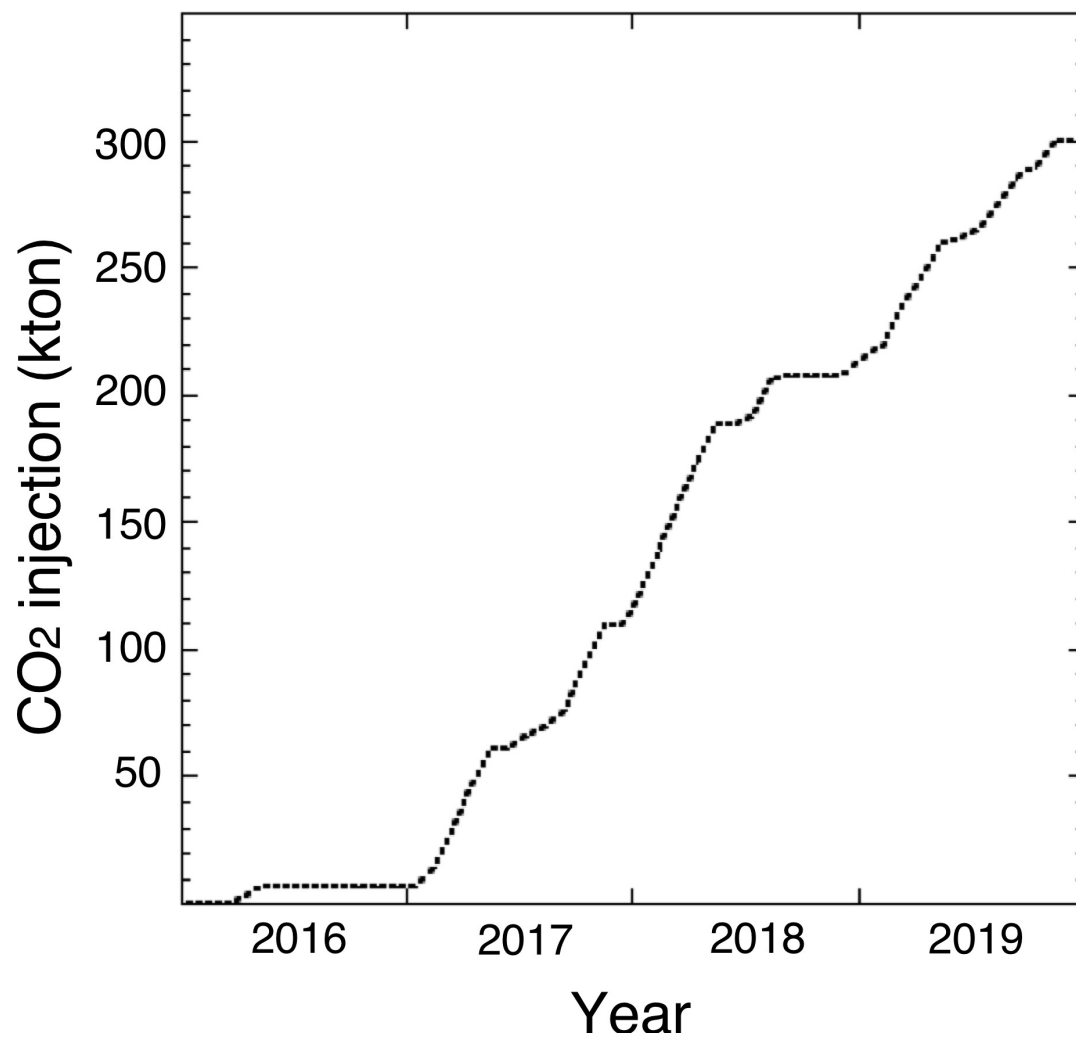
**By Sano et al.**

## Supplementary Figures



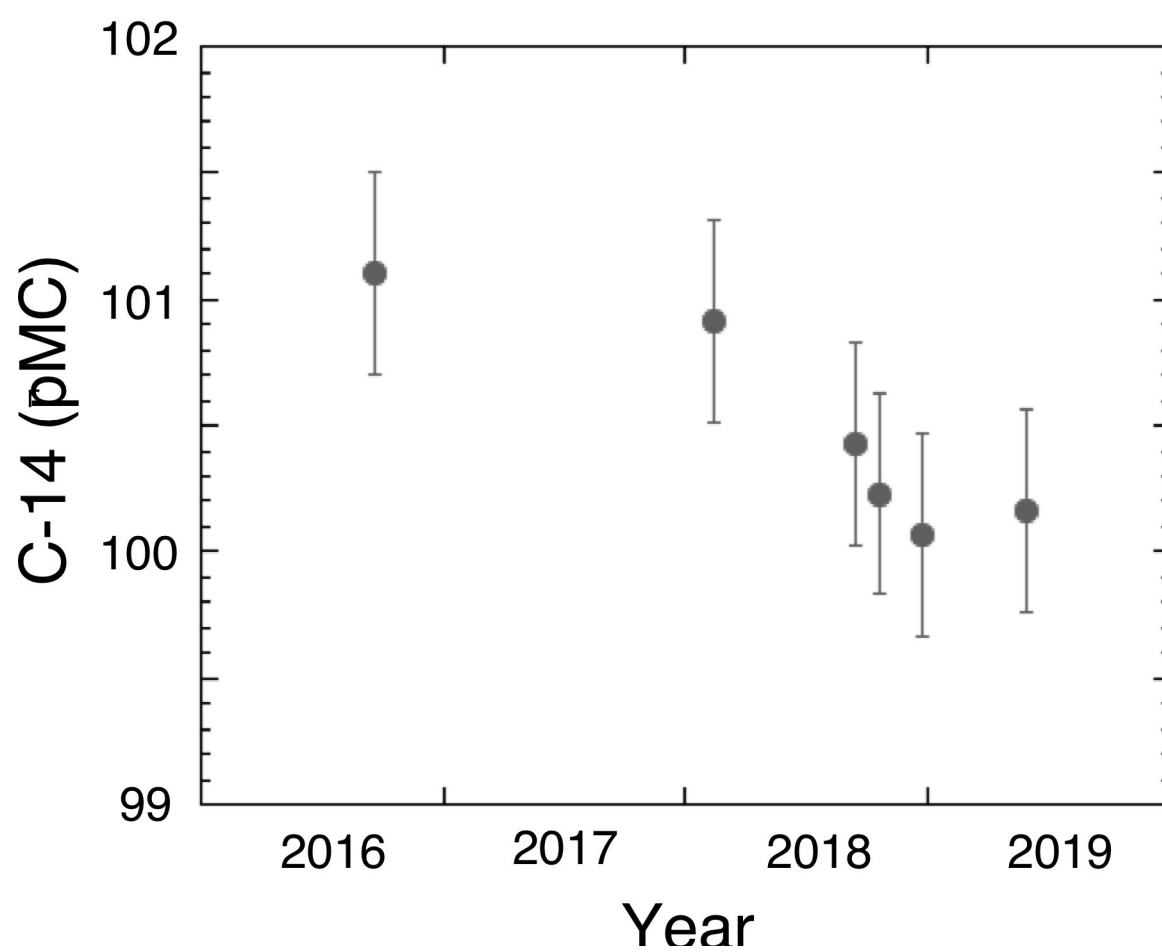
**Supplementary Fig. 1**

Schematic diagram of geological cross section of the Tomakomai demonstration site reproduced from Tanaka et al. (2017).



**Supplementary Fig. 2**

Amount of accumulated injected CO<sub>2</sub> in the Tomakomai CCS demonstration site. Data are from Japan CCS Co. LTD.



**Supplementary Fig. 3**

Secular variation of C-14 abundance in groundwater sampled from the Uenae well. Error bars are  $2\sigma$ .

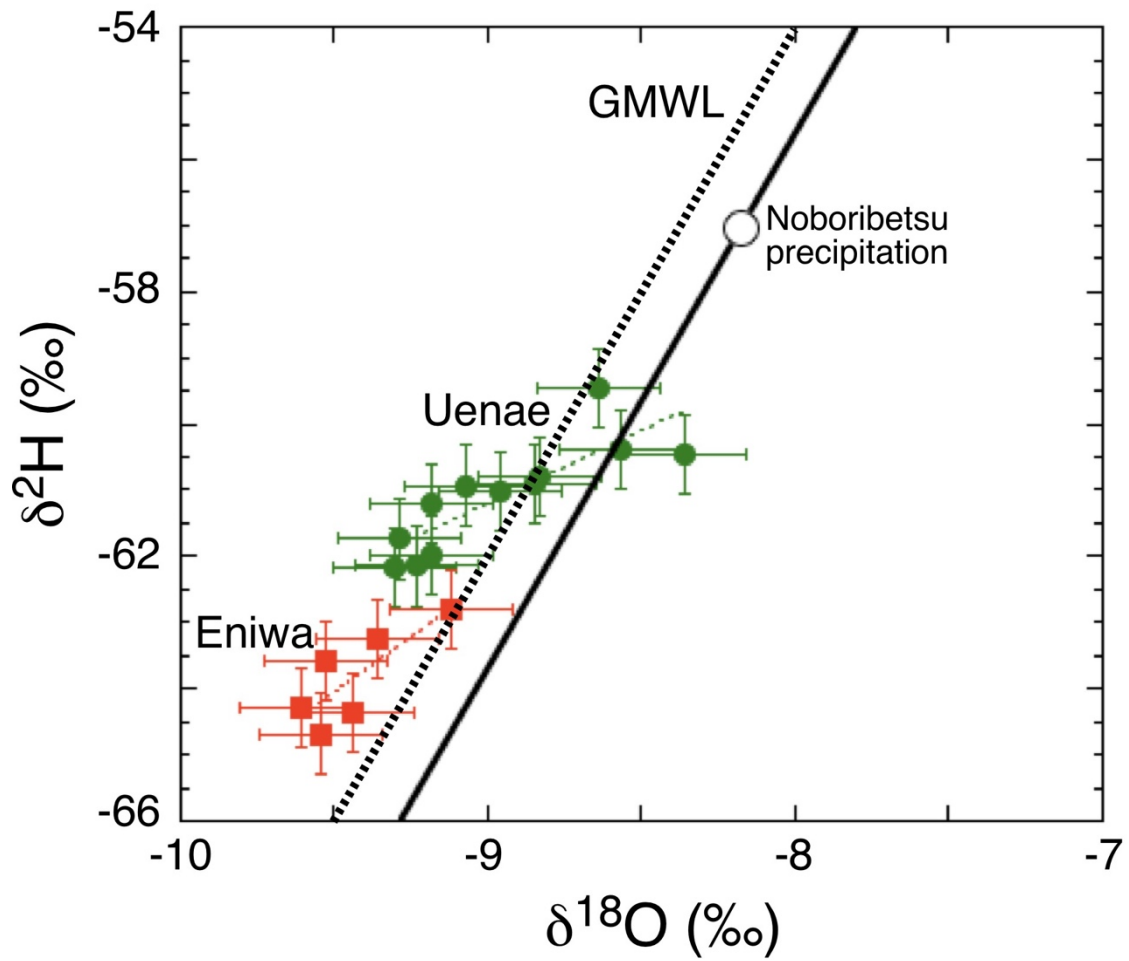
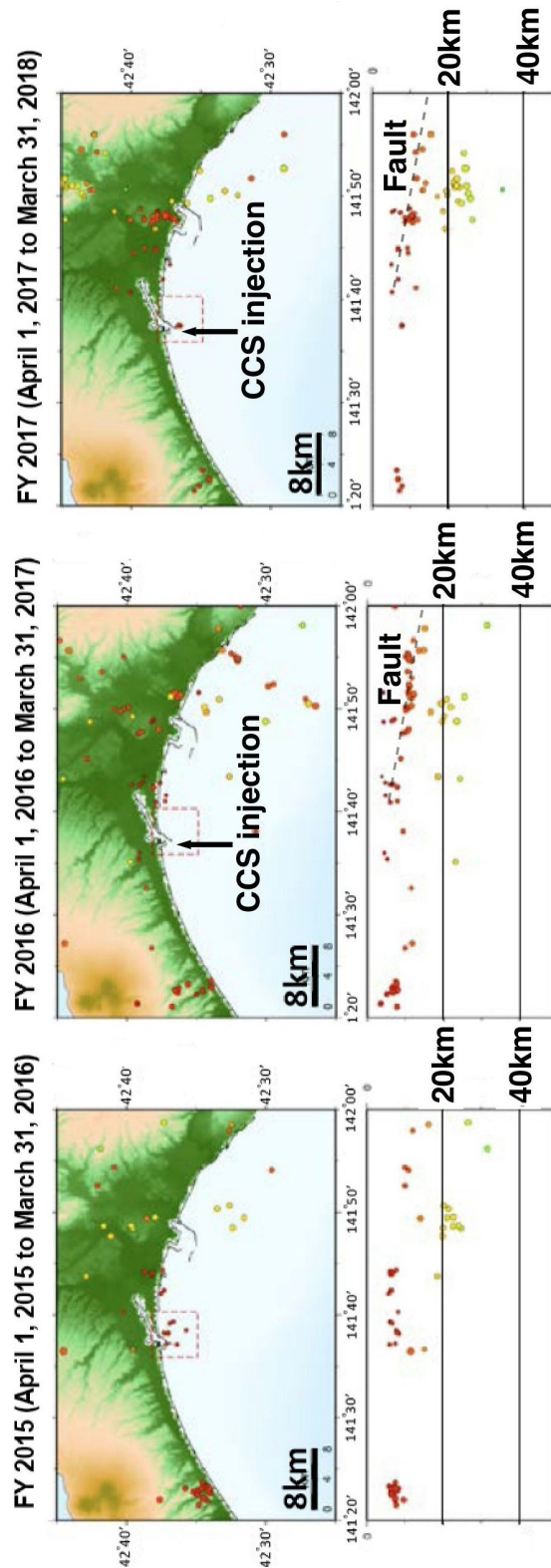


Figure S4

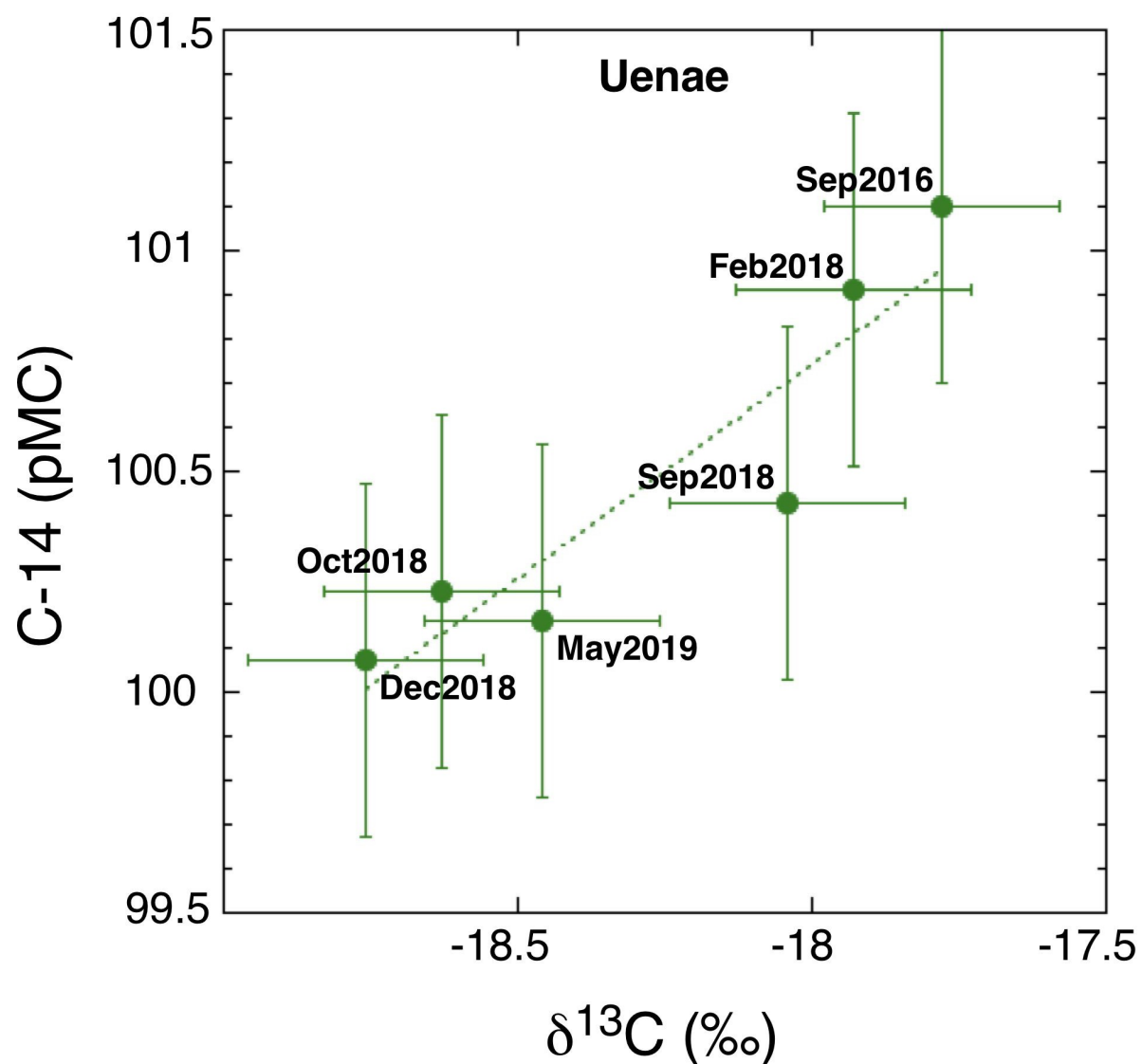
**Supplementary Fig. 4**

Relationship between  $\delta^{18}\text{O}$  and  $\delta^2\text{H}$  of groundwater sampled in Uenae (green symbols) and Eniwa (red symbols) wells. Error bars are  $2\sigma$ . The white circle and solid line indicate summer precipitation in Noboribetsu (kawaraya et al., 2016). and its fractionation along the Local Meteoric Water Line, with a slope of 8 in Hokkaido, Japan. GMWL shows Global Meteoric Water Line.



### Supplementary Fig. 5

Earthquakes that occurred in 2015 (April 2015 to March 2016), 2016 (April 2016 to March 2017), and 2017 (April 2017 to March 2018), reported by Japan CCS Co. LTD (JapanCCS, 2019). The gray dotted line shows the approximate position of the fault, which is corresponding to the orange dotted curve in Fig. 3, 4, and 5.



**Supplementary Fig. 6**

A correlation diagram between  $\delta^{13}\text{C}$  value and C-14 activity of the Uenae samples. Error assigned to the symbol is  $2\sigma$ . There is a positive relationship between these two parameters, suggesting a binary mixing of two components.