

Feb 20 Absorption Lab Data

S1 = bottom of absorption column

S2 = middle of absorption column

S3 = gas outlet from absorption column

Data with Heater Off: [temperature set point between 9°C and 11°C]

	Sample 1	Sample 2	Sample 3	Sample 4
<i>S1 CO₂ Concentration</i>	29.3%	27.8%	27.7%	27.5%
<i>S2 CO₂ Concentration</i>	29.1%	27.7%	27.4%	27.3%
<i>S3 CO₂ Concentration</i>	28.3%	27.1%	27.1%	27.0%
<i>CO₂ Gauge Temp (°C)</i>	20	19.5	19	19
<i>H₂O Gauge Temp (°C)</i>	16	15.5	15	15
<i>Temp on Screen (°C)</i>	13	12	12	11
<i>Mix Outlet Temp (°C)</i>	20	19	19.5	19

Data with Heater On: [temperature set point at 26°C]

	Sample 5	Sample 6
<i>S1 CO₂ Concentration</i>	27.5%	27.5%
<i>S2 CO₂ Concentration</i>	27.4%	27.3%
<i>S3 CO₂ Concentration</i>	26.8%	26.8%
<i>CO₂ Gauge Temp (°C)</i>	20	20
<i>H₂O Gauge Temp (°C)</i>	17	17
<i>Temp on Screen (°C)</i>	13	14
<i>Mix Outlet Temp (°C)</i>	24	25

Notes:

- Took a long time for the operating temperature (of inlet CO₂ and H₂O streams) to drop. Held at 13°C for ~20 mins before first set of samples was taken, then dropped slightly for subsequent samples (temperature set point was between 9°C and 11°C for the entirety of the initial sample collection time)
- K2 pressure decreased from -0.1 to -0.5 atm between first and second set of samples

- Sample 1 data is less reliable than that of 2, 3, and 4

**Additional note: we don't know the composition of liquid stream into absorption unit-- needs to be approximated or solved for