Table 1: Velocity of NaCl and gasified water plumes (m/day), calculated from the maximum recorded electrical conductivity values and the distance between wells. The recording of maximum conductivity in each well can be compared with others geochemical parameters as CO₂ concentration, pH and ORP.

	Distance	F1-F2	F1-F3	F1-F4	F1-F6	F2-F3	F3-F6	F6-F8	F1-F8
between wells (m)		0.93	2.50	3.57	3.86	1.57	1.36	3.23	7.10
	Recording of maximum conductivity (day)	1.87	2.18	6.31	4.02	0.31	1.84	8.75	12.77
NaCl experiment	Velocity of the conductivity peak (m/day)	0.50	1.15	0.57	0.96	5.07	0.74	0.37	0.56
	Conductivity rate (%) between two wells	-	74.77	-	1	1	31.53	1.31	1
	Recording of maximum conductivity (day) (Fig 5.b)	-	2.45	-	5.46	-	3.01	8.05	13.50
CO ₂ experiment	Velocity of the conductivity peak (m/day)	-	1.02	-	0.71	-	0.45	0.40	0.53
	Conductivity rate (%) between two wells	-	52.99	-	-	-	1.78	-8.38	-
	Recording of maximum CO ₂ concentration (day) (Fig 5.a)	1.36	2.75	-	-	-	-	-	-
	Recording of maximum pH (day) (Fig 5.c)	-	2.85	-	5.67	-	2.82	7.89	14
	Recording of maximum ORP (day) (Fig5.d)	-	-	-	-	-	-	-	-

Table 2: Physicochemical parameters of the tank and carbonate freshwater aquifer measured during the baseline and the CO₂ injection experiment.

1) For baseline values: a) the 2nd and 3rd lines show the pH and electrical conductivity (μS.cm⁻¹) measured by conductivity and pH-meter before and after addition of a gas mixture (90% of CO₂, 9% of He, and 1% of Kr) in the tank; b) the other lines show the carbonate freshwater aquifer baseline of the different physico-geochemical parameters (electrical conductivity (μS.cm⁻¹), pH, ORP (mV), CO₂ concentration (%)) measured before CO₂ injection by the multiparameter et CO₂ probes on the wells F1, F2, F3, F6 and F8. 2) For CO₂ experience values: the data correspond to the maximum values reached during the injection experiment measured by the multiparameter et CO₂ probes on the wells F1, F2, F3, F6 and F8.

		Water tank (before addition of gas mixture)	Well F1	Well F2	Well F3	Well F6	Well F8
	Electrical conductivity (\pm 0.5% of reading plus 1.0 μ S.cm-1)	649.00	738.48	-	631.98	668.17	734.81
	рН	7.27 (± 0.2 %)	7.02(± 0.1 pH units)	-	7.15 (± 0.1 pH units)	7.03 (± 0.1 pH units)	7.10 (± 0.1 pH units)
	ORP (± 5 mV)	-	320.90	-	348.69	233.22	375.58
	[CO2] (mg/L \pm 5%)	-	2.46	1.84	1.95	-	2.26
	[Ca ²⁺] (mg/L (± 5%)	-	156	123	120	124	129
Baseline values	[HCO3-] (mg/L ± 5%)	-	317	310	306	325	322
	[Na+] (mg/L ± 5%)	-	9	12	12	12	12
	$[Mg^{2+}] \left(mg/L \pm 5\%\right)$	-	3	3	3	3	3
	[K+] (mg/L ± 5%)	-	1	1	-	-	-
	$[{\rm SO_4}^{2\text{-}}] \ ({\rm mg/L} \pm 5\%)$	-	39	48	53	53	53
	$[NO_3]$ (mg/L \pm 5%)	-	20	20	22	23	23
	[Cl-] (mg/L ± 5%)	-	19	16	18	18	18
		Water tank (after addition of gas mixture)	Well F1	Well F2	Well F3	Well F6	Well F8
CO ₂ experience	Electrical conductivity (\pm 0.5% of reading plus 1.0 μ S.cm-1)	645.00	1551	-	729	716	777
	рН	5.45 (± 0.2 %)	5.63 (± 0.1)	1	6.97 (± 0.1)	6.96 (± 0.1)	7.07 (± 0.1)
	ORP (± 5 mV)	-	238	1	-	-	-
	[CO2] (± 5%)	-	> 20	3.54	3.67	-	2.42

Tables 3: Concentrations of the different cations and anions (mg/L) for wells F1, F2 and F3, measured before the CO₂ injection (ie., the baseline) by ion chromatography. In the second column are reported the maximum concentrations reached after CO₂ intrusion, and the associated dates and times (third column). The fourth column shows the increase in concentrations compared to baseline value (%). The five indicates the time to return to equilibrium values (in days). The time to return to equilibrium values is not indicated for SO₄²-, NO₃- and Cl⁻ because these species undergo a second increase or decrease in concentrations 14.5 days after injection.

	Natural	Maximum		Increase in	Time to return to plateau
F1	concentration	concentration	Day after	concentration	values or baseline (days)
1.1	(baseline)	(mg/L)	injection	compared to	after reaching maximum
	\pm 5%	± 5%		baseline value (%)	concentration
Ca^{2+}	156	292	0.33	47	0.67
HCO ₃ -	317	833	0.33	62	1.33
Na ⁺	9	26	0.33	65	0.67
$\mathrm{Mg}^{2^{+}}$	3	4	0.33	25	0.34
K^+	1	9	0.33	89	3.02
SO_4^{2-}	39	67	3.35	43	-
NO ₃ -	20	29	3.35	31	-
Cl-	19	31	0.33	39	-

	Natural	Maximum		Increase in	Time to return to plateau
F2	concentration	concentration	Day after	concentration	values or baseline (days)
1.7	(baseline)	(mg/L)	injection	compared to	after reaching maximum
	± 5%	± 5%		baseline value (%)	concentration
Ca^{2+}	123	169	1.01	27	2.35
HCO ₃ -	310	401	1.67	23	2.32
Na ⁺	12	13	1.01	8	2.35
$\mathrm{Mg}^{2^{+}}$	3	4	1.01	25	3.64
K^{+}	1	3	1.67	67	2.68
SO_4^{2-}	48	69	3.01	30	-
NO ₃ -	20	33	4.65	39	-
Cl-	16	21	1.01	24	-

	Natural	Maximum		Increase in	Time to return to plateau
F3	concentration	concentration	Day after	concentration	values or baseline (days)
ГЭ	(baseline)	(mg/L)	injection	compared to	after reaching maximum
	\pm 5%	± 5%		baseline value (%)	concentration
Ca^{2+}	120	163	3.02	26	2.35
HCO ₃ -	306	371	2.02	18	5.03
Na ⁺	12	13	0.69	8	3.68
Mg^{2^+}	3	4	2.02	25	3.98
K ⁺	X	2	1.35	68	6.31
SO ₄ ²⁻	53	69	6.00	23	-
NO ₃ -	22	31	3.66	29	-
Cl-	18	21	7.05	14	-