


**Interreg**  
CENTRAL EUROPE





**AMIIGA**

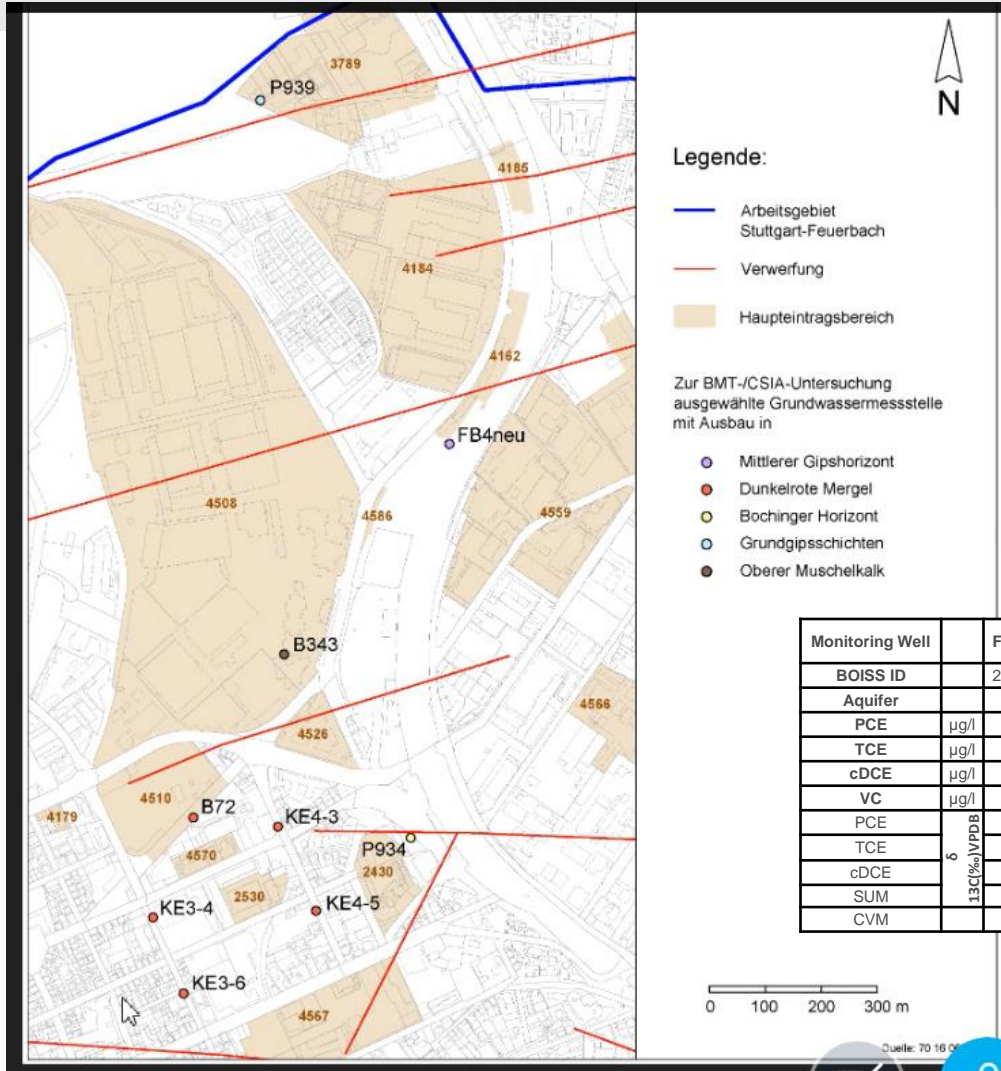
European Union  
European Regional  
Development Fund

TAKING  
**COOPERATION**  
FORWARD

 Parma 29/03/2019

 **Activity A.T1.5**  
Trainings for capacity building & improving technical skills

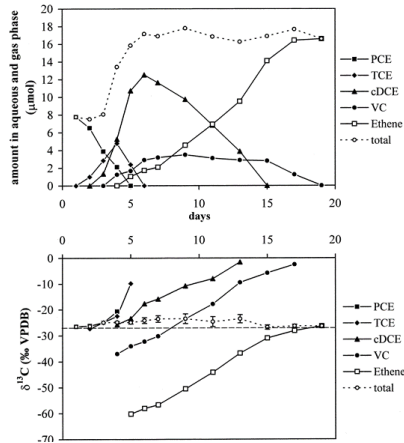
 PoliMI, Dr. Massimo Marchesi



## STOCCARDA

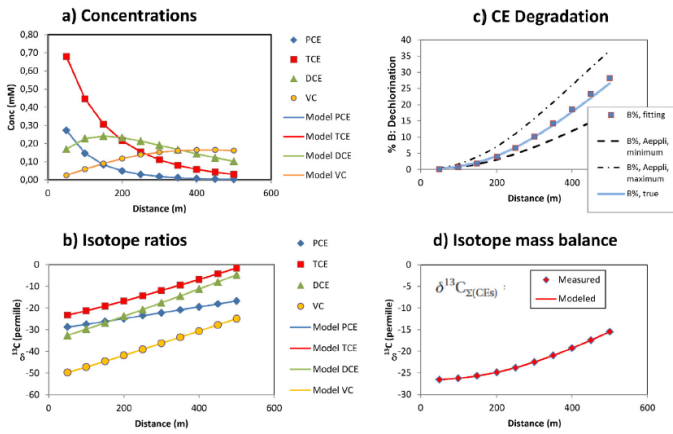
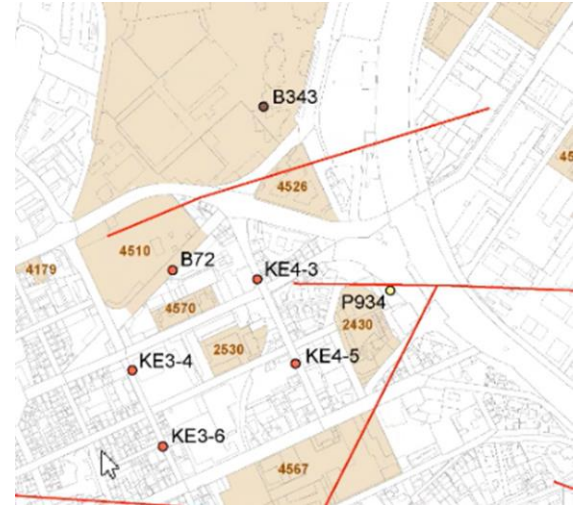
Monitoring Well		FB 4neu	KE 3-4	KE 3-6	KE 4-3	KE 4-5	B 72	P 934	P 939	B 343	Am. 1 (BH)	Am. 1 (GD)
BOISS ID		2200073	1200059	1200062	1200068	1200070	47072	9260	7023	47343		
Aquifer		MGH	DRM	DRM	DRM	DRM	DRM	BoH	GGs	mo	mo	mo
PCE	µg/l	16	76	310	42	6	4	77	3	3		
TCE	µg/l	98	21	20	46	120	9	8	17	2		
cDCE	µg/l	45	13	16	55	83	14	< BG	4	1		
VC	µg/l	< BG	< BG	< BG	< BG	< BG	10	< BG	< BG	< BG		
PCE	δ <sup>13</sup> C(‰)VPDB	-24.6	-25.3	-25.6	-24.2	-25.1	-23.8	-26.1			-24.7	-24.9
TCE			-21.4	-24.0	-24.8	-24.7	-26.1	-23.1	-24.4			
cDCE			-33.0	-33.5	-24.8	-29.5	-20.3					
SUM			n.a	-25.8	-26.0	-24.7	-27.0	-22.4	-25.8	n.a		
CVM							-24.7					





P. Höhener et al. / Journal of Contaminant Hydrology 182 (2015) 173–182

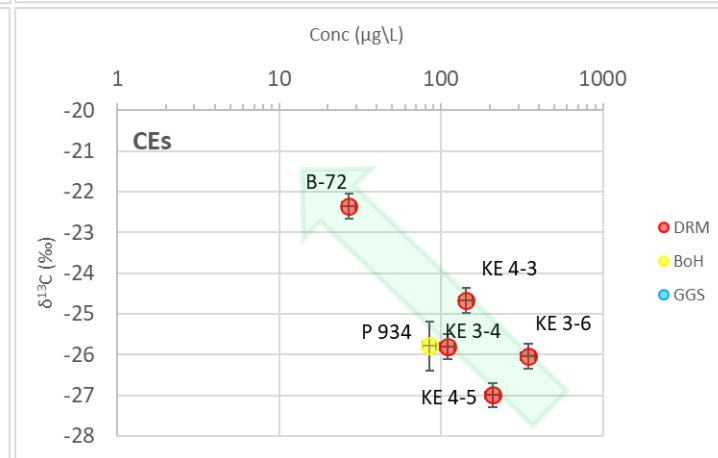
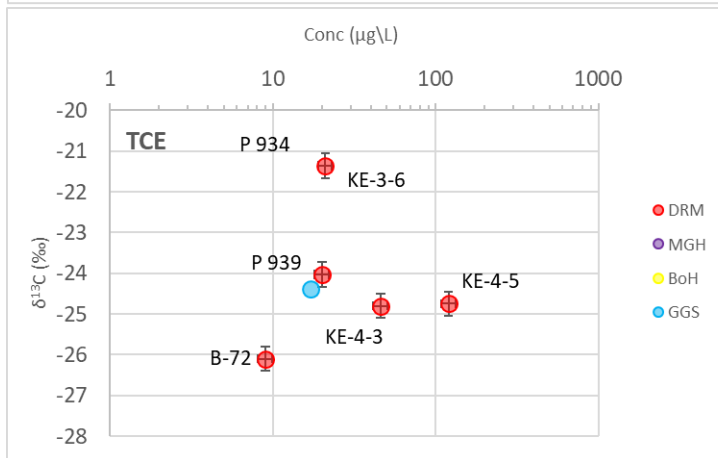
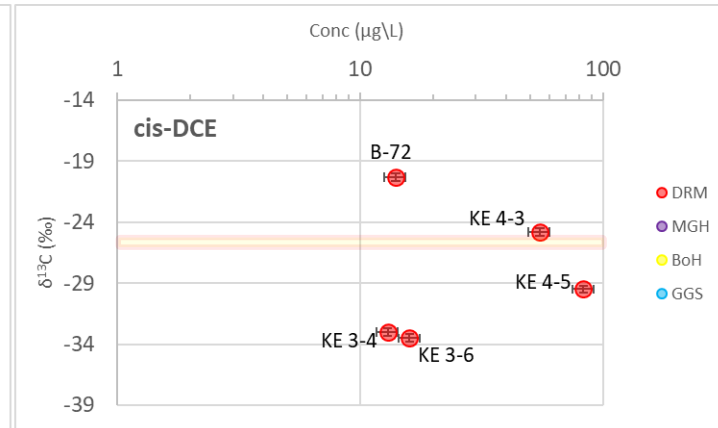
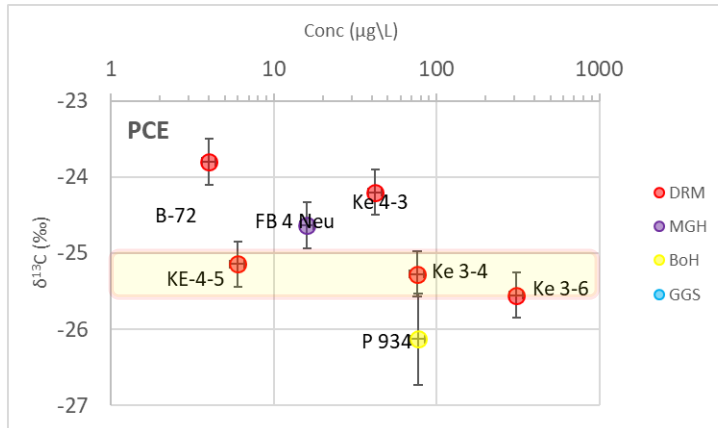
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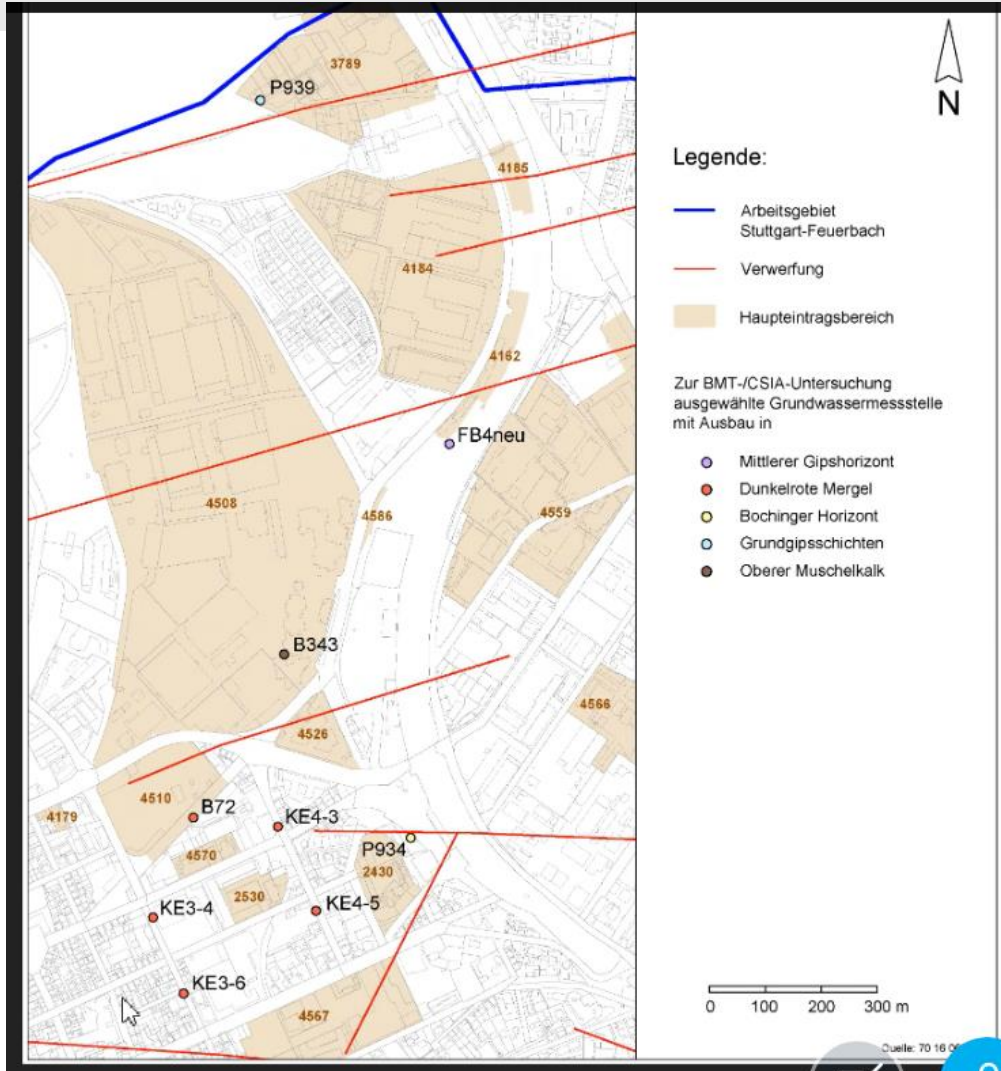


Monitoring Well		KE 3-4	KE 3-6	KE 4-3	KE 4-5	B 72
BOISS ID		1200059	1200062	1200068	1200070	47072
Aquifer		DRM	DRM	DRM	DRM	DRM
PCE	µg/l	76	310	42	6	4
TCE	µg/l	21	20	46	120	9
cDCE	µg/l	13	16	55	83	14
VC	µg/l	< BG	< BG	< BG	< BG	10
PCE	δ <sup>13</sup> C(‰)VPDB	-25.3	-25.6	-24.2	-25.1	-23.8
TCE		-21.4	-24.0	-24.8	-24.7	-26.1
cDCE		-33.0	-33.5	-24.8	-29.5	-20.3
SUM		-25.8	-26.0	-24.7	-27.0	-22.4
CVM						-24.7

fig. 1. Results of the fitting process for benchmark case 1: a) concentrations; b) isotope ratios; c) % complete chloroethene degradation; and d) isotope mass balance.







Con più probabilità dovrebbe trattarsi di una stessa fonte, o per lo meno non si sono individuate differenze significative da far supporre la presenza di altre responsabilità

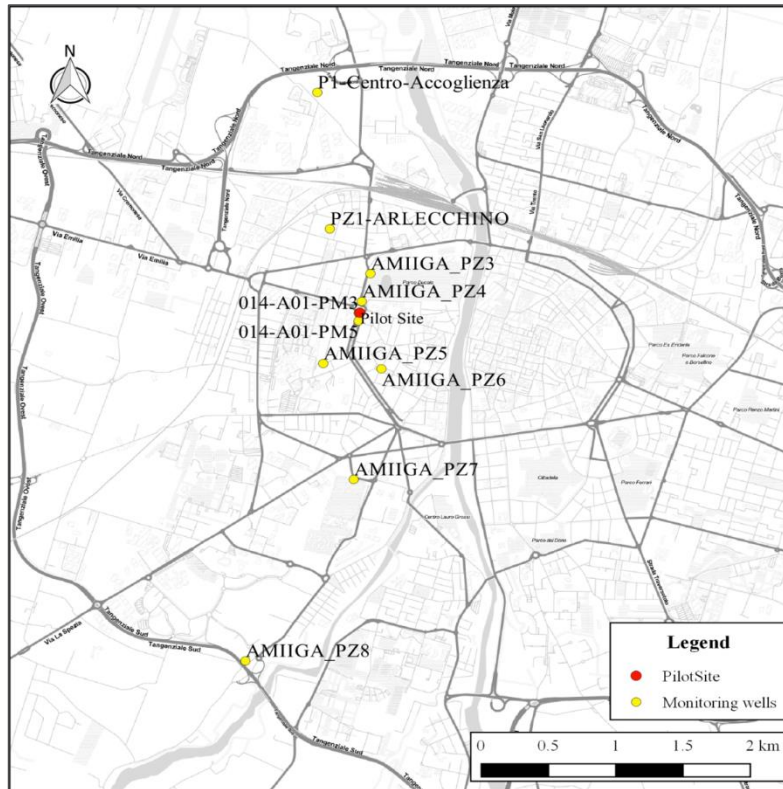
Sussistono processi di biodegradazione (attenuazione naturale) in grado di ridurre e contenere la contaminazione

Sussistono processi di biodegradazione (attenuazione naturale) in grado di ridurre e contenere la contaminazione

In particolar modo per quanto riguarda il B72



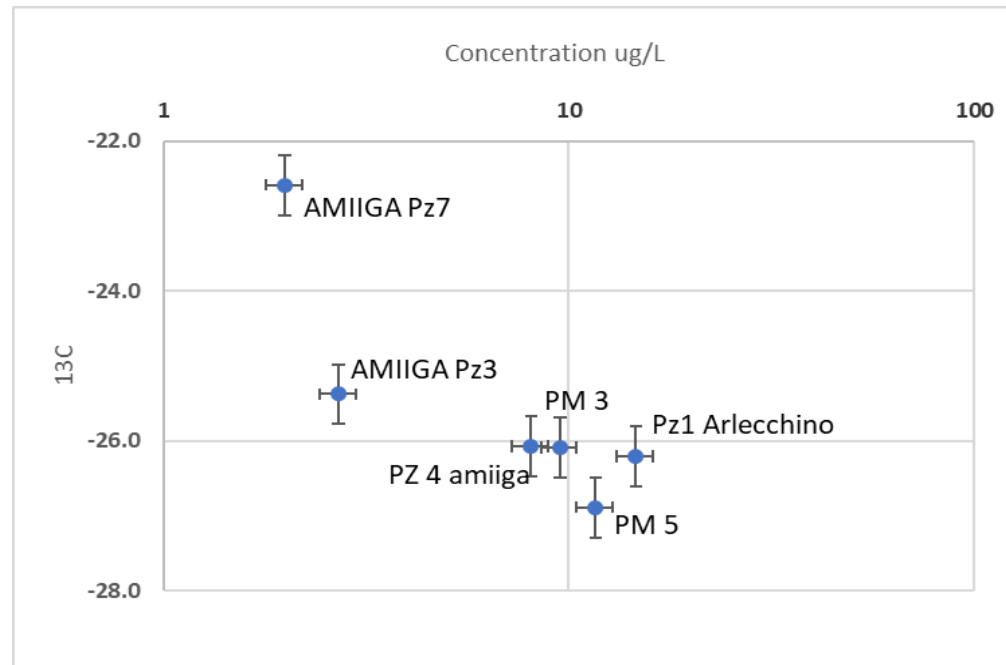
## PARMA



WELL ID	DEPTH [m]	SCREEN from [m]	SCREEN to [m]
014-A01-PM3	18	12	18
014-A01-PM5	18	7	18
PZ1-ARLECCHINO	25	13	25
P1-Centro-Accoglienza	25		
AMIIGA_PZ3	25	18	24
AMIIGA_PZ4	27	15.5	26
AMIIGA_PZ5	25	10	21
AMIIGA_PZ6	25	12	22
AMIIGA_PZ7	25	9	19
AMIIGA_PZ8	25	7	19

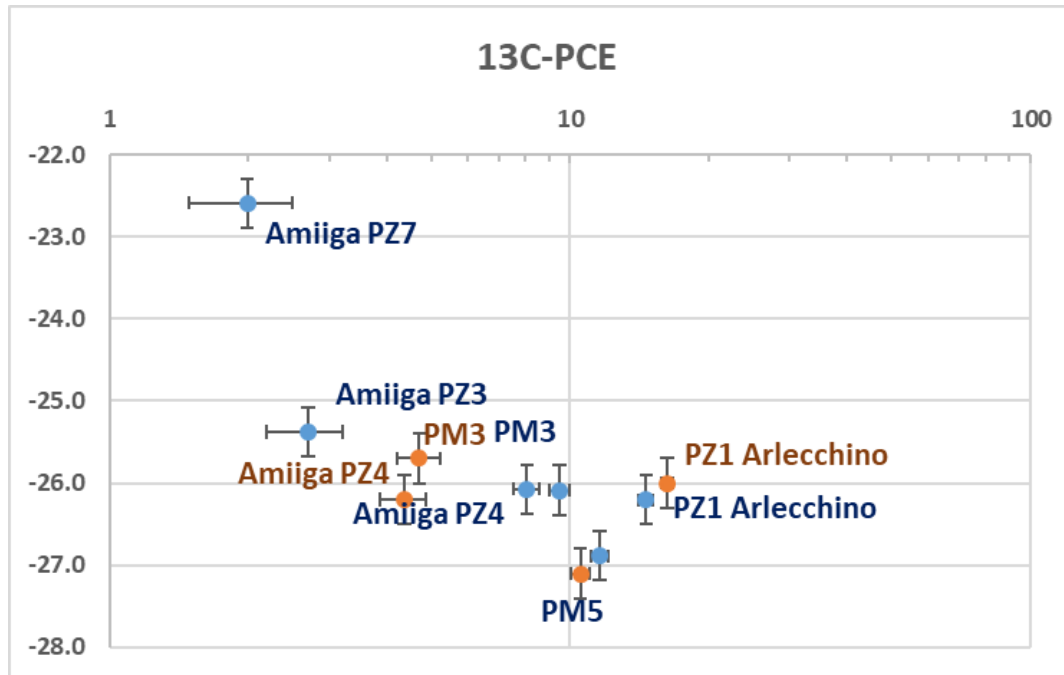


## Primavera 2018

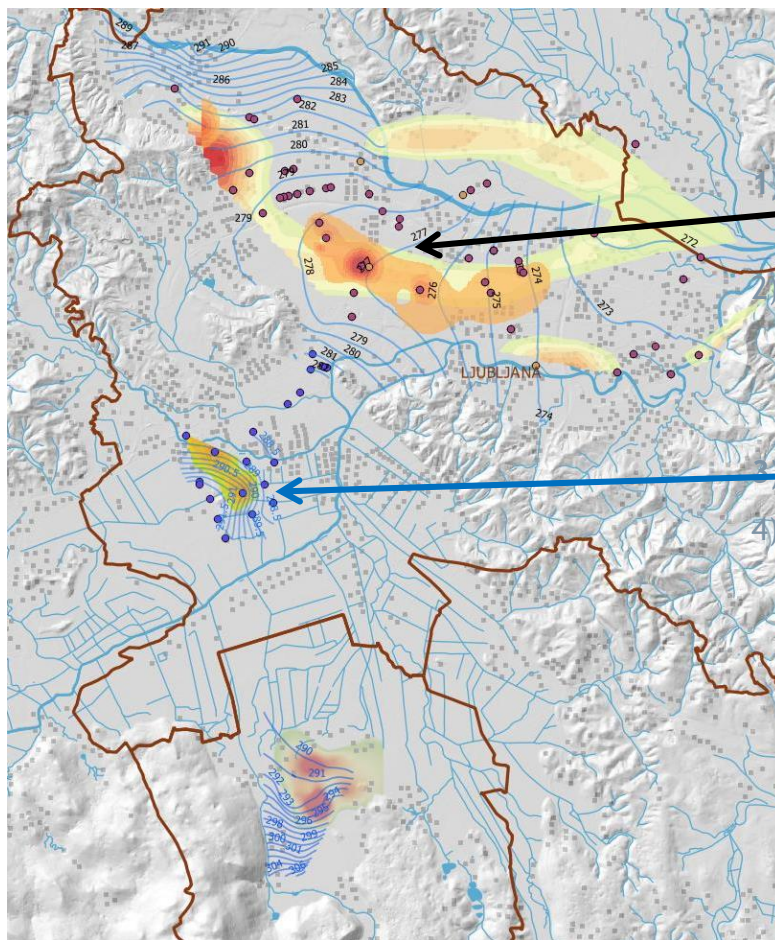


Descrizione Campione  
Denominazione  
N.Rapporto  
Note  
Data Campionamento  
Nome Prova  
Tricloroetilene  
Tetracloroetilene  
1,1-dicloroetilene  
1,2 Dicloroetilene (cis?)  
Cloruro di vinile  
Etilene  
Cloroformio (Triclorometano)  
Tetracloroetilene

PZ1 - Arlecchino	PZ3 - Via Pasini Nord	PZ4 - Via Pasini Sud	PZ5 - Via Leporati	PZ6 - P.le Matteotti	PZ7 - Villetta	PZ8 - Strada Farnese	PM3 - P.le Santa Croce	PM5 - P.le Santa Croce
19318	19319	19320	19321	19322	19323	19324	19325	19326
t 22.4	t 22.4	t 22.4	t 22.4	t 22.4	t 22.4	t 22.4	t 22.4	t 22.4
31/05/2018	31/05/2018	31/05/2018	31/05/2018	31/05/2018	31/05/2018	31/05/2018	31/05/2018	31/05/2018
Risultato	Risultato	Risultato	Risultato	Risultato	Risultato	Risultato	Risultato	Risultato
0,250	0,047	0,069	0,027	0,091	0,076	< 0,005	0,066	0,057
16,27		4,37		2,23			4,71	10,55
< 0,005	< 0,005	< 0,005	0,041	< 0,005	< 0,005	< 0,005	< 0,005	< 0,005
< 0,10	< 0,10	< 0,10	< 0,10	< 0,10	< 0,10	< 0,10	0,21	< 0,10
< 0,005	< 0,005	< 0,005	< 0,005	< 0,005	< 0,005	< 0,005	< 0,005	< 0,005
< 2,0	< 2,0	< 2,0	< 2,0	< 2,0	< 2,0	< 2,0	< 2,0	< 2,0
0,06	0,08	< 0,01	< 0,01	< 0,01	< 0,01	< 0,01	< 0,01	< 0,01
	2,50		0,53		2,72	< 0,05		





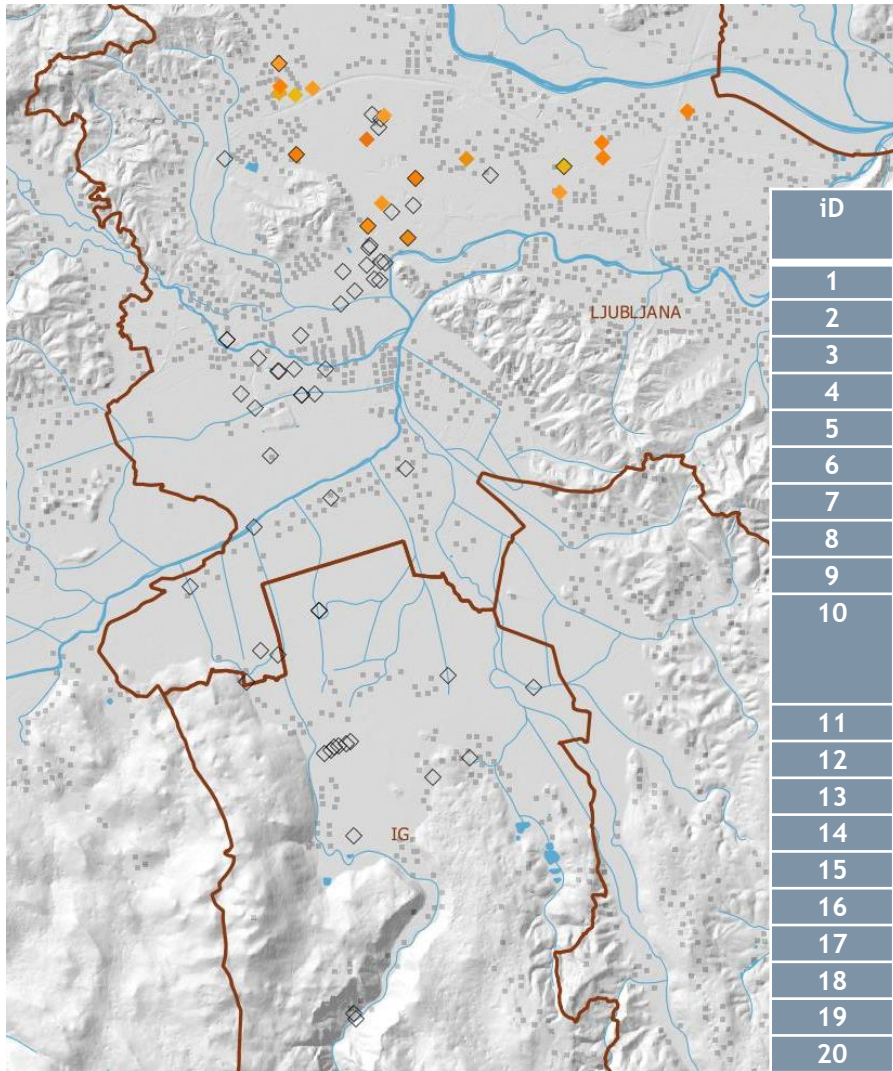


„Dravlje-Moste“ losses from  
sewage system  
( $\text{NO}_3^-$ ,  $\text{Cl}^-$ , emerging  
pollutants)

„Barje“ municipal landfill  
( $\text{B}$ ,  $\text{NH}_4^+$ ,  $\text{Fe}$ ,  $\text{Mn}$ ,  $\text{As}$ , ...)



# D.T1.2.2 - LJUBLJANA



20 Analysis on Nitrate ( $^{15}\text{N}$  and  $^{18}\text{O}$ )  
60 Analysis on  $\text{H}_2\text{O}$  ( $^2\text{H}$  and  $^{18}\text{O}$ )

iD	Sample site	Date of sampling	REMARKS	Nitrate/ mg/L
1	Pincome 2	16.2.17	Amiiga	14,0
2	Pincome 4	15.2.17	Amiiga	16,8
3	OP-3/99	15.2.17	Amiiga	28,5
4	BRP-1B	16.2.17	Amiiga	19,8
5	Julon V-1	16.2.17	Amiiga	8,72
6	Hrastje 3	16.2.17	Amiiga	18,4
7	Voj-1/14	15.2.17	Amiiga	24,9
8	Vuksanovič	15.2.17	Amiiga	29,5
9	OP-1, Ilirija	15.2.17	Amiiga	4,3
10	RTV	16.2.17	Amiiga	<2 (denitrification) *
11	Mercator V-1	15.2.17	Amiiga	24,2
12	Hrastje 4	16.2.17	Amiiga	20,6
13	BŠV-1/99	15.2.17	Amiiga	20,5
14	Zadobrova	15.2.17	Amiiga	18,2
15	LMV-1/05	8.3.17	Amiiga	20,6
16	Trampuž (Sojerjeva)	8.3.17	Amiiga	28,2
17	Petrol	16.2.17	Amiiga	17,4
18	BSC-1/03	16.2.17	Amiiga	26,5
19	Hafner	8.3.17	Amiiga	34,5
20	Jerala	8.3.17	Amiiga	40,5



