

Freiheit Spring Dye Traces (2 Jul 2009) - 2 Traces

Carbon (Bug) Analysis Results

Trace Inputs:

Dye Input #1: At 14:15, 128.41 g of **Sulforhodamine B** was poured into Freiheit sinkhole 23D2631 (MN23:D02631, 554,959 E / 4,839,340 N, NAD 83, Zone 15). The dye was mixed with about 1,470 gallons (5,600 liters) of water in a child's swimming pool adjacent to the sinkhole. The dye and water were poured into the sinkhole, and after about 12 minutes the sinkhole was completely drained.

Dye Input #2: At 22:20, 580.2 g of **Uranine HS** was poured into Spring Valley Creek at 23X131 (MN23:X00131, 554,036 E / 4,838,485 N, NAD 83, Zone 15) on the downstream end of the north culvert.

KFD Numbers	Field Site	UTMs (NAD 83, Zone 15)		24 Jun - 2 Jul 2009	2 Jul 2009 Dye Input	2 Jul - 6 Jul 2009	6 Jul - 13 Jul 2009	13 Jul - 20 Jul 2009	20 Jul - 28 Jul 2009	28 Jul - 10 Aug 2009
		Eastings	Northing							
MN23:X00134	Freiheit Spring Run Bug (23X134)	554,978	4,839,445	Uran (80 σ) SrB (464 σ) (out: 3 Jul 2009)		Uran (339 σ) (in: 3 Jul)	Uran (214 σ)	Uran (321 σ)	Uran (253 σ)	Uran (110 σ)
MN23:X00132	Spring Valley Creek 1 (upstream) (23X132)	552,427	4,839,575	SrB * (19 σ)		SrB * (7 σ)	SrB * (65 σ)	SrB * (25 σ)	SrB * (18 σ)	SrB * (7 σ)
MN23:X00129	Spring Valley Creek 2 (23X129)	554,309	4,839,336	SrB * (8 σ)		SrB * (20 σ)	SrB * (25 σ)	SrB * (16 σ)	SrB * (12 σ)	SrB * (153 σ)
MN23:X00133	Spring Valley Creek 3 (downstream) (23X129)	554,832	4,839,538	SrB * (8 σ)		SrB * (12 σ)	SrB * (51 σ)	SrB * (18 σ)	SrB * (18 σ)	SrB * (15 σ)
MN23:X00131	Spring Valley Creek Tributary 1 (upstream of culvert) (23X131)	554,041	4,838,489	lost		nd	nd	nd	nd	nd
MN23:X00130	Spring Valley Creek Tributary 2 (downstream) (23X130)	554,314	4,839,307	nd	nd	nd	nd	nd	Uran * (7 σ)	

SrB indicates **Sulforhodamine B** dye was detected

SrB * indicates Sulforhodamine B from some other source (possibly wastewater plant in Spring Valley)

Uran indicates **Uranine** dye was detected

Uran * indicates Uranine from some other source

nd indicates no dye was detected

lost indicates bug was lost in the field