

TABLE 3A.1
1,4-DIOXANE CONCENTRATION DATA – SOURCE AREA GROUNDWATER MONITORING LOCATIONS

Dartmouth College, Rennie Farm Site
Hanover, New Hampshire
DES Site #201111109, DES Project #27737

Revised Through 3/31/18

Date Sampled	GZ-1/R	GZ-2	GZ-3	GZ-4	GZ-12L	GZ-13L	GZ-14U	GZ-14L	GZ-18U	GZ-18L	GZ-19U	GZ-19L	GZ-20U	GZ-20L	GZ-22U	GZ-23U	GZ-43U
11/20/2009	-	-	-	-													
10/12/2010	-	-	-	-													
5/19/2011	-	-	-	-													
10/27/2011	-	-	-	-													
11/29/2011	<50	<50	<50	<50													
12/5/2011	-	-	-	-													
12/12/2011	-	-	-	-													
12/19/2011	-	-	-	-													
4/19/2012	-	150	<50	<50													
5/23/2012	-	190	<50	<50													
7/25/2012	-	250/370*	<50/30*	-													
11/30/2012	-	160/220*	<50/32*	-													
3/13/2013	-	170/220*	<50/<0.25*	<50/1.4*													
6/20/2013	-	90/71*	<50/3.9*	<50/0.59*													
7/31/2013	-	120/150*	<50/4.2*	<50/0.37*													
9/25/2013	-	140/120*	<50/25*	<50/<0.25*													
12/19/2013	-	90/94*	<50/59*	<50/<0.25*													
4/17/2014	-	<50/9.6*	<50/19*	<50/<0.25*													
6/12/2014	-	<50/91*	<50/2.7*	<50/<0.25*													
8/22/2014	dry	160	21	dry													
9/5/2014	-	-	-	-													
7/8/2015	<0.25	47	2.7	<0.25													
7/22/2015	-	-	-	-													
9/15/2015	-	-	-	-													
10/1/2015	-	-	-	-													
11/10/2015	-	-	52	-													
12/9/2015	-	37/40	38	-													
1/6/2016	-	15	17	-													
2/11/2016	-	27	8.5	-	2.4	0.65	550	27									
2/19/2016	-	-	-	-	-	-	-	-									
3/8-9/2016	-	13	4.4	-	1.5	0.45	600	13									
4/11/2016	-	21	4.3	-	0.96	0.39	560	27									
4/21/2016	-	-	-	-	-	-	-	-									
5/11-13/2016	-	51	2.1	-	-	-	500	49									
6/23-24/2016	-	90	4.8	-	-	-	dry	170	89	67	51	19	dry	3.2	dry	dry	
7/18-19/2016	-	98	dry	-	dry	dry	dry	dry	dry	70	dry	68	dry	6.8	dry	dry	
8/18/2016	-	dry	dry	-	dry	dry	dry	dry	dry	dry	dry	dry	dry	13	dry	dry	
9/15-20/2016	-	-	dry	dry	dry	dry	dry	dry	dry	dry	dry	-	dry	16	-	dry	
10/27/2016	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	-	dry	20	-	dry	
11/29/2016	-	dry	dry	-	-	-	-	250	-	190	-	73	-	-	-	-	
12/2-8/2016	-	75	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	
12/28-29/2016	-	74	15	dry	dry	1.8	34	120	dry	88	dry	53	dry	43	dry	<0.25	
1/18/2017	-	-	-	-	-	-	-	-	97	-	dry	-	dry	-	-	dry	dry
1/24/2017	-	37	37	-	-	-	-	81	-	-	-	-	-	10	-	-	dry
2/21-24/2017	-	50	64	-	-	-	-	-	-	-	-	-	-	-	-	-	2.8
3/27-29/2017	-	4.0	33	-	-	-	-	39	-	-	-	-	37	2.7	-	-	-
4/24/2017	-	9.6	20	-	-	-	140	23	-	-	-	-	-	-	-	-	12
5/17/2017	<0.25	24	12	-	-	-	-	58	-	30	dry	-	-	-	-	-	-
6/19/2017	dry	15	15	dry	dry	-	dry	180	dry	15	dry	42	dry	-	-	-	-
7/27/2017	dry	dry	dry	dry	dry	-	dry	dry	dry	5.1	dry	dry	dry	0.85	-	dry	-
8/25/2017	-	dry	dry	dry	dry	dry	-	-	dry	dry	dry	dry	dry	4.2	-	dry	-
9/28/2017	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	dry	4.5	dry	dry	dry
12/11-22/2017	-	dry	-	-	-	-	dry	dry	-	-	-	-	-	-	-	-	-
3/22/2018	-	dry	48	-	-	-	dry	36	dry	14	dry	dry	dry	1.4	Could not locate	dry	-

Notes:
 1. Data indicate concentrations of 1,4-dioxane in micrograms per liter.
 2. "<" indicates that 1,4-dioxane was not detected above the referenced reporting limit.
 3. "/" indicates results of labeled and blind duplicate sample, respectively.
 4. "-" indicates sampling location not included in respective sampling round.

Notes:
 5. "dry" indicates no water in monitoring well at the time of the respective sampling round.
 6. "Value/Value*" indicates analysis for 1,4-dioxane performed using EPA Method 8260B and 8260B SIM, respectively.
 7. Shaded cells indicate well location was not installed at the time of the referenced sampling round.

TABLE 3A.2
1,4-DIOXANE CONCENTRATION DATA – SITE DOWN / SIDEGRADIENT MONITORING LOCATIONS

Dartmouth College, Rennie Farm Site
Hanover, New Hampshire
DES Site #201111109, DES Project #27737

Revised Through 3/31/18

Date Sampled	GZ-5U	GZ-5L	GZ-6	GZ-7U	GZ-7L	GZ-8U	GZ-8L	GZ-9U	GZ-9L	GZ-9D	GZ-10U	GZ-10L	GZ-11U	GZ-11L	GZ-15L	GZ-16D	GZ-17L	GZ-24U	GZ-24L	GZ-24D	GZ-29L	GZ-30U	GZ-30L	GZ-31L	AS-W5W	Dug Well		
11/20/2009																												
10/12/2010																												
5/19/2011																												
10/27/2011																												
11/29/2011																												
12/5/2011																												
12/12/2011																												
12/19/2011																												
4/19/2012																												
5/23/2012																												
7/25/2012																												
11/30/2012																												
3/13/2013																												
6/20/2013																												
7/31/2013																												
9/25/2013																												
12/19/2013																												
4/17/2014																												
6/12/2014																												
8/22/2014	12/11	9.1	24	dry	2.1																						<50/1.8*	
9/5/2014	13	8.8	dry	dry	3.1																						<50/1.5*	
7/8/2015	8.7	4.9	17	5.9	1.1	<0.25	<0.25	<0.25	270			<0.25	0.93/1.0	<0.25	<0.25											<50/1.2*		
7/22/2015	-	-	-	-	-	<0.25	<0.25	<0.25	520			<0.25	1.5	<0.25	<0.25												2.0	
9/15/2015	-	-	-	-	-	-	-	-	300/380*			-	<50/1.6*	-	-													-
10/1/2015	-	-	-	-	-	-	-	-	-			-	-	-	-													-
11/10/2015	-	-	-	-	-	-	-	-	350			-	1.1	-	-													2.8/3.0
12/9/2015	-	-	-	-	-	-	-	-	340			-	1.3	-	-													-
1/6/2016	-	-	-	-	-	-	-	-	300			-	1.2	-	-													1.5
2/11/2016	-	-	-	-	-	-	-	-	290			-	1.2	-	-													1.6
2/19/2016	-	-	-	-	-	-	-	-	-	75		-	-	-	-													-
3/8-9/2016	-	-	-	-	-	-	-	-	160	83		-	0.90	-	-													1.1
4/11/2016	-	-	-	-	-	<0.25	<0.25	<0.25	77	94		<0.25	0.95	<0.25	<0.25												0.93	
4/21/2016	-	-	-	-	-	-	-	-	-	-		-	-	-	-													-
5/11-13/2016	-	-	11	-	-	-	-	-	160	-		-	0.57	-	-													0.95
6/23-24/2016	-	-	-	-	-	-	-	-	210	180		-	0.97	-	-													1.7
7/18-19/2016	-	-	-	-	-	-	-	-	180	190		-	1.4	-	-													1.6
8/18/2016	dry	6.9	dry	dry	1.4	-	-	-	190	210		-	2.2	-	-													2.3
9/15-20/2016	dry	12	dry	-	-	-	-	-	180	190		-	2.2	-	-													3.3
10/27/2016	dry	32	dry	dry	1.1	-	-	dry	120	160		-	dry	-	-													-
11/11/2016	-	-	-	-	-	-	-	-	-	-		-	-	-	-													-
11/22-29/2016	-	-	-	-	-	-	-	-	-	-		-	-	-	-													-
12/2-8/2016	dry	13	0.50	dry	0.43	dry	-	dry	160	120		<0.25	0.67	<0.25	<0.25													3.6
12/28-29/2016	dry	7.8	dry	dry	0.39	dry	-	<0.25	110	110		-	1.6	-	-													1.6
1/10-18/2017	-	-	-	-	-	-	-	-	-	-		-	-	-	<0.25													-
1/24-25/2017	6.2	6.8	2.8	-	2.9	-	-	-	88	86		-	2.1	-	-													2.8
2/21-24/2017	-	9.3	-	-	1.1	-	-	-	76	230		-	1.8	-	<0.25													3.9
3/27-29/2017	3.7	11	-	-	-	-	-	-	120	200		-	1.2	-	-													1.6
4/24/2017	5.0	11	4.3	5.4	2.3	-	-	-	64	6.7		-	0.65	-	-													0.97
5/17/2017	4.1	5.1	-	-	-	-	-	-	52	46		-	0.81	-	-													0.64
6/19-20/2017	2.6	2.8	2.9	3.8	0.45	-	dry	-	71	22		dry	1.1	-	-													0.35
7/27/2017	1.4	2.9	-	0.69	-	-	-	-	93	23		dry	-	-	-													0.46
8/25/2017	dry	4.8	dry	dry	1.8	-	-	-	120	22		-	1.4	-	-													-
9/27-29/2017	dry	5.7	dry	dry	1.2	<0.25	<0.25	<0.25	110	22		dry	1.6	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-
12/11-22/2017	-	-	-	-	-	-	-	-	25	21		-	-	-	-													-
3/22/2018	0.33	2.7	1.2	1.6	0.60	<0.25	dry	-	3.2	15		-	2.1	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-

Notes:
 1. Data indicate concentrations of 1,4-dioxane in micrograms per liter.
 2. "<" indicates that 1,4-dioxane was not detected above the referenced reporting limit.
 3. "f" indicates results of labeled and blind duplicate sample, respectively.
 4. "-" indicates sampling location not included in respective sampling round.
 5. "dry" indicates no water in monitoring well at the time of the respective sampling round.
 6. "Value/Value*" indicates analysis for 1,4-dioxane performed using EPA Method 8260B and 8260B SIM, respectively.
 7. Shaded cells indicate well location was not installed at that time.
 8. GZ-16D sampled on April 21, 2016 at 5 depths within the well; refer to GZA's report dated May 6, 2016 for additional information.

TABLE 3A.3
1,4-DIOXANE CONCENTRATION DATA – OFF-SITE GROUNDWATER MONITORING LOCATIONS

Dartmouth College, Rennie Farm Site
Hanover, New Hampshire
DES Site #201111109, DES Project #27737

Revised Through 3/31/18

GZ-25U		GZ-25L		GZ-25D		GZ-26U		GZ-26L		GZ-27U		GZ-27L		GZ-27D	
Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]
9/8/2016	<0.25	9/20/2016	<0.25	9/9/2016	0.5	9/16/2016	33	9/9/2016	26	10/6/2016	5.1	11/11/2016	5.9	11/11/2016	11
9/20/2016	<0.25	11/11/2016	<0.25	9/20/2016	0.29	11/11/2016	21	Well Decommissioned		11/11/2016	6.4	1/11/2017	4.1	1/11/2017	4.3
10/6/2017	<0.25	8/29/2017	<0.25	8/28/2017	0.62	5/18/2017	18			7/27/2017	5.5	10/12/2017	6.1	7/27/2017	6
3/29/2018	<0.25	10/6/2017	<0.25	10/6/2017	0.57	10/12/2017	29			10/12/2017	6.9	12/11/2017	7.8	10/12/2017	5.9
		3/29/2018	<0.25	3/27/2018	0.77	3/28/2018	22			12/11/2017	9.7	3/28/2018	6.2	12/11/2017	5.6
										3/28/2018	7.4			3/28/2018	4.6

GZ-28U		GZ-28L		GZ-28D		GZ-32U		GZ-32L		GZ-32D		GZ-33U		GZ-33L	
Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]
12/8/2016	<0.25	12/12/2016	<0.25	11/23/2016	<0.25	10/18/2016	<0.25	12/9/2016	0.47	11/23/2016	<0.25	10/6/2016	<0.25	10/17/2016	<0.25
1/18/2017	<0.25	1/18/2017	<0.25	1/18/2017	<0.25	11/11/2016	<0.25	1/11/2017	<0.25	1/11/2017	<0.25	11/11/2016	<0.25	10/28/2016	<0.25
10/11/2017	<0.25	10/11/2017	<0.25	10/11/2017	<0.25	2/8/2017	<0.25	1/31/2017	<0.25	2/8/2017	<0.25	10/6/2017	<0.25	10/6/2017	<0.25
4/2/2018	<0.25	12/22/2017	Frozen	12/14/117	<0.25	7/27/2017	<0.25	2/8/2017	<0.25	7/27/2017	<0.25	3/29/2018	<0.25	3/29/2018	<0.25
		4/2/2018	<0.25	4/2/2018	<0.25	8/28/2017	<0.25	3/9/2017	<0.25	8/28/2017	<0.25				
						10/6/2017	<0.25	8/28/2017	<0.25	10/6/2017	<0.25				
						12/21/2017	Frozen	10/6/2017	<0.25	12/21/2017	Frozen				
								12/21/2017	<0.25						
								3/28/2018	<0.25						

GZ-34U		GZ-34L		GZ-34D		GZ-35U		GZ-35L		GZ-35D		GZ-36U	
Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]
1/13/2017	0.25	12/29/2016	<0.25	12/14/2016	<0.25	11/11/2016	<0.25	11/11/2016	<0.25	11/11/2016	<0.25	1/13/2017	<0.25
1/31/2017	<0.25	1/11/2017	<0.25	1/11/2017	<0.25	1/17/2017	<0.25	1/18/2017	<0.25	1/17/2017	<0.25	1/31/2017	<0.25
2/8/2017	2.0	2/27/2017	<0.25	2/27/2017	<0.25	8/28/2017	<0.25	8/28/2017	<0.25	3/8/2017	<0.25	2/8/2017	<0.25
4/3/2017	<0.25	7/27/2017	<0.25	7/27/2016	<0.25	10/6/2017	<0.25	10/6/2017	<0.25	8/28/2017	<0.25	2/27/2017	<0.25
5/19/2017	<0.25	8/28/2017	<0.25	10/11/2017	<0.25	12/21/2017	<0.25	12/21/2017	<0.25	10/12/2017	<0.25	10/6/2017	<0.25
7/27/2017	<0.25	10/11/2017	<0.25	12/11/2017	Frozen	3/26/2018	<0.25	3/29/2018	<0.25	12/21/2017	<0.25	12/21/2017	<0.25
8/28/2017	<0.25	12/11/2017	Frozen	3/28/2018	<0.25					3/26/2018	<0.25	3/27/2018	<0.25
10/11/2017	<0.25	3/27/2018	<0.25										
12/11/2017	<0.25												
3/28/2018	<0.25												

GZ-37U		GZ-37L		GZ-37D		GZ-38U		GZ-39U		GZ-39L		GZ-39D	
Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]
12/14/2016	<0.25	12/14/2016	<0.25	12/12/2016	0.60	10/3/2016	<0.25	10/3/2016	<0.25	10/3/2016	<0.25	11/22/2016	1.8
1/13/2017	<0.25	1/12/2017	<0.25	1/13/2017	0.48	1/17/2017	<0.25	1/17/2017	<0.25	1/17/2017	<0.25	12/9/2016	2.6
6/20/2017	<0.25	6/20/2017	<0.25	2/28/2017	0.30	10/6/2017	<0.25	10/11/2017	0.25	10/11/2017	<0.25	10/11/2017	1.8
10/12/2017	<0.25	10/12/2017	<0.25	4/3/2017	0.48	3/27/2018	<0.25	3/27/2018	<0.25	3/27/2018	<0.25	12/11/2017	1.6
12/21/2017	<0.25	12/11/2017	<0.25	5/19/2017	0.34							3/28/2018	1.2
3/28/2018	<0.25	3/28/2018	<0.25	6/20/2017	<0.25								
				7/26/2017	0.51								
				8/29/2017	0.47								
				10/12/2017	0.54								
				12/11/2017	Frozen								
				3/28/2018	1.2								

GZ-40U		GZ-40D		GZ-41U		GZ-42U	
Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]	Sample Date	Result [µg/L]
10/3/2016	120	11/11/2016	9.4	10/6/2016	70	11/22/2016	370
1/17/2017	290	1/17/2017	10	1/17/2017	44	12/8/2016	360
4/28/2017	450	2/27/2017	11	10/12/2017	63	2/27/2017	540
5/18/2017	340	5/18/2017	9.4	12/22/2017	38	4/3/2017	370
7/25/2017	420	7/25/2017	13	3/29/2018	67	5/18/2017	360
8/28/2017	490	10/12/2017	11			7/25/2017	500
10/12/2017	540	12/11/2017	Frozen			8/28/2017	540
12/11/2017	640					10/12/2017	570
3/27/2018	570					12/22/2017	440
						3/28/2018	550

Notes:

1. Data indicate concentrations of 1,4-dioxane in micrograms per liter.
2. "<" indicates that 1,4-dioxane was not detected above the referenced reporting limit.
3. "f" indicates results of labeled and blind duplicate sample, respectively.
4. "-" indicates sampling location not included in respective sampling round.
5. "dry" indicates no water in monitoring well at the time of the respective sampling round.
6. "Value/Value*" indicates analysis for 1,4-dioxane performed using EPA Method 8260B and 8260B SIM, respectively.
7. Shaded cells indicate well location was not installed at that time.

TABLE 3B
1,4-DIOXANE CONCENTRATION DATA – SURFACE WATER MONITORING LOCATIONS

Dartmouth College, Rennie Farm Site
Hanover, New Hampshire
DES Site #201111109, DES Project #27737

Revised Through 3/31/18

Sample Collection Date	Surface Water Sampling Location												
	Stream - 1	Stream-1A	Stream-2	Stream-3	Stream-4	Stream-5	Stream-6	Stream-7	Stream-8	Stream-9	Stream-10	Stream-11	Stream-12
7/9/2015	0.98	-	-	-	-	-	-	-	-	-	-	-	-
7/22/2015	1.1	-	-	-	-	-	-	-	-	-	-	-	-
11/10/2015	1.0	-	-	-	-	-	-	-	-	-	-	-	-
12/9/2015	1.5	-	<0.25	<0.25	-	-	-	-	-	-	-	-	-
1/6-7/2016	1.5	-	<0.25	<0.25	-	-	-	-	-	-	-	-	-
2/10-11/2016	1.6	-	<0.25	<0.25	-	-	-	-	-	-	-	-	-
3/8/2016	1.1	-	<0.25	<0.25	-	-	-	-	-	-	-	-	-
4/12/2016	0.85	-	-	-	-	-	-	-	-	-	-	-	-
5/11-13/2016	1.0	-	<0.25	<0.25	-	-	-	-	-	-	-	-	-
6/23/2016	1.5	-	-	-	-	-	-	-	-	-	-	-	-
7/19/2016	1.9	-	<0.25	<0.25	-	-	-	-	-	-	-	-	-
8/19/2016	dry	-	<0.25	0.52	-	-	-	-	-	-	-	-	-
8/26/2016	dry	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	-	-
9/28-30/2016	dry	dry	<0.25	0.48	0.36	<0.25	<0.25	-	-	-	-	-	-
10/24-28/2016	dry	dry	<0.25	0.57	0.62	0.49	<0.25	<50	<0.25	<0.25	<0.25	<0.25	<0.25
12/2-5/2016	dry	<0.25	<0.25	<0.25	<0.25	<0.25	-	<0.25	-	-	-	<0.25	-
12/28-29/2016	1.3	-	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	<0.25	-
1/23-24/2017	2.6	-	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	<0.25	-
2/23-24/2017	2.9	-	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	<0.25	-
3/24/2017	1.7	-	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	<0.25	-
4/24/2017	0.91	-	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	<0.25	-
5/18/2017	0.26	-	<0.25	<0.25	<0.25	<0.25	-	-	-	-	-	-	-
6/19/2017	<0.25	-	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	<0.25	-
7/27/2017	0.27	-	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	<0.25	-
8/25-29/2017	0.35	-	<0.25	0.36	0.26	<0.25	<0.25	-	-	-	-	<0.25	-
9/27/2017	0.37	-	-	-	0.34	<0.25	<0.25	-	-	-	-	<0.25	-
10/11/2017	-	-	<0.25	0.33	-	-	-	-	-	-	-	-	-
12/12-14/17	<0.25	-	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	-	-
3/22/2018	<0.25	-	<0.25	<0.25	<0.25	<0.25	<0.25	-	-	-	-	<0.25	-

Notes:

1. Data indicate concentrations of 1,4-dioxane in micrograms per liter.
2. "<" indicates that 1,4-dioxane was not detected above the referenced reporting limit.
3. "-" indicates sampling location not included in respective sampling round.
4. "dry" indicates no water at present at surface water location on the date of the respective sampling round.