



WATERTOWN / MASSACHUSETTS

The subject property is located at 600 Main Street in Watertown, Massachusetts. The Site is located in a mixed-use commercial and residential area and is currently utilized as a Citgo gasoline service station comprised of a one-story commercial service station building and two pump islands. The entire Site is paved. The Site was first listed as a Location to Be Investigated (LTBI) under the Transition Provisions of the Massachusetts Contingency Plan (MCP) in 1990. A Phase I Environmental Site Investigation and Tier Classification submittal were submitted for the Site in August 1997. At that time concentrations of contaminants in excess of applicable cleanup standards were identified in soil and groundwater and the Site was classified Tier II.

A Phase III–Remedial Action Plan (Phase III) was prepared in February 2003. The Phase III included an identification, evaluation, and selection of a comprehensive remedial action alternative for the Site. The Phase III concluded that the implementation of *Butane Biosparging™* and *Butane Bioventing™* would reduce concentrations of petroleum compounds at the Site and result in a Response Action Outcome for the Site.

The *Butane Biosparging™* and *Butane Bioventing™* systems were installed at the Site and began operation on May 31, 2003. The latest groundwater sampling event occurred on October 19, 2004. The data indicates that the groundwater conditions have improved significantly since the treatment system began operation at the Site. GBI anticipates preparing a Response Action Outcome for the Site in early 2005.

BUTANE BIOSTIMULATION TECHNOLOGIES™
Site Photos



TABLE 1
SUMMARY OF GROUNDWATER DATA: VPH
CITGO SERVICE STATION
600 MAIN STREET, WATERTOWN, MASSACHUSETTS

SAMPLE LOCATION	SAMPLE DATE	BENZENE	ETHYL-BENZENE	TOLUENE	XYLENES	MTBE	NAPHTH-ALENE	C5 - C8 ALIPHATICS	C9 - C12 ALIPHATICS	C9 - C10 AROMATICS
MW-1	7/21/1997	11	20.3	<5.0	95	1,270	<17	<12	180	44
	10/9/2002	16	<5.0	<5.0	<5.0	8,490	<5.0	<800	48.7	58.3
	8/28/2003	429	90	<50	<50	20,800	<200	<400	<150	<550
	12/19/2003	<500	<500	<500	<500	19,100	<1,000	6,360	<5,000*	<5,000*
	4/9/2004	19	<5.0	<5.0	<5.0	9,840	<20	<800	<15	<55
	7/29/2004	<100	<100	<100	<100	5,930	<400	<800	<300	<1,100
	10/19/2004	<50	<50	<50	<50	4,650	<200	<400	<150	<550
	2/23/2005	10.3	<5.0	<5.0	<5.0	2,330	<20	<800	<15	<55
MW-2	7/21/1997	550	205	<25	135	36,400	<85	<60	1,100	1,050
	10/9/2002	363	96.7	17.9	59.3	9,910	<20	<2000	226	569
	8/28/2003	<50	<50	<50	<50	3,480	<200	<400	<150	<550
	12/19/2003	69	25	<20	<20	1,280	<50	<250	397	<250
	4/9/2004	38.6	22.7	<5.0	8.9	1,000	<20	<200	<15	70.7
	7/29/2004	<100	<100	<100	<100	838	<400	<800	<300	<1,100
	10/19/2004	<5.0	<5.0	<5.0	<5.0	98.30	<20.0	<40.0	18.6	<55.0
	7/21/1997	<2	54.5	1.2	51.3	<5	12.1	672	821	751
10/9/2002	<5.0	<5.0	<5.0	<5.0	5	<5	71	<15	70	
8/28/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<40	<15	<55	
12/19/2003	<5.0	<5.0	<5.0	<5.0	<5.0	<10	<50	<50	<50	
4/9/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<40	<15	<55	
7/29/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<20	<40	<15	<55	
10/19/2004	<5.0	<5.0	<5.0	<5.0	<5.0	<20.0	<40	<15	<55	
MW-4	10/9/2002	<5.0	<5.0	<5.0	<5.0	250	<5.0	175	39.2	<55
	8/28/2003	112	<50	<50	<50	15,700	<200	<400	<150	<550
	12/19/2003	<500	<500	<500	<500	8,250	<1000	11,300	<5,000*	<5,000*
	4/9/2004	<5.0	<5.0	<5.0	<5.0	4,670	<20	<800	<15	<55
	7/29/2004	<100	<100	<100	<100	6,020	<400	1,370	<300	<1,100
	10/19/2004	<50	<50	<50	<50	5,490	<200	<400	<150	1,340
	2/23/2005	<5.0	<5.0	<5.0	<5.0	3,400	<20	<800	29.5	<55
MW-5	10/9/2002	185	67.5	47.8	376.3	36,300	<20	<2,000	<15	319
	8/28/2003	145	<50	110	<50	60,000	<200	<400	<150	<550
	12/19/2003	<2,000*	<2,000*	<2,000*	<2,000*	55,100	<5,000*	<25,000*	<25,000*	<25,000*
	4/9/2004	197	301	5.6	<5.0	18,000	<20	<2,000*	<15	<55
	7/29/2004	132	14.3	<5.0	<5.0	3,850	<20	968	30.7	110
	10/19/2004	76.4	<50	<50	<50	2,040	<200	<400	<150	<550
	2/23/2005	64.5	5.10	<5.0	<5.0	3,200	<20	<40	26.6	87.3
MW-6	10/9/2002	10	563	10.2	540.5	51.7	171	948	897	2,470
	8/28/2003	40	830	<25	35	95	219	1,150	<75	3,000
	12/19/2003	<10	341	<10	101	<10	73	1,430	967	657
	4/9/2004	5.9	185	<5.0	92.3	35.1	66.6	57.7	<15	918
	7/29/2004	8.5	111	<5.0	15.9	29.2	62.2	829	64.1	126
	10/19/2004	<5.0	940	<5.0	468.7	78.5	283	3,350	<15	4,810
	2/23/2005	16.2	431	6.30	202.7	111	146	3,190	756	2,410
GW-2		2,000	30,000	6,000	6,000	50,000	6,000	1,000	1,000	5,000
GW-3		7,000	4,000	50,000	50,000	50,000	6,000	4,000	20,000	4,000

NOTES: All concentrations expressed in ug/L (ppb). Bold values exceed GW-2 and/or GW-3 Standards. * = Elevated detection limits due to MTBE concentration. (C:/JM/JPPA)

REFERENCES

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