

2011 ANNUAL MONITORING REPORT FORMER R & D SUNOCO ROUTE 30 & ROUTE 100 RAWSONVILLE, VT 05155 VT DEC SMS #1991-1007

Prepared for: A.R. SANDRI, INC 400 CHAPMAN STREET GREENFIELD, MA 01301 CONTACT: SHARON ABBOTT

Prepared by: DB Environmental Consulting PO Box 815 Brattleboro, VT 05302-0815 PHONE: (802) 258-0350

David Balk, P.G., R.S.

FILE NO. 1019 DOCUMENT: ANNRPT0811 AUGUST 12, 2011 DB ENVIRONMENTAL CONSULTING PO BOX 815 BRATTLEBORO, VT 05302-0815

> August 12, 2011 Project: 1019 Document: AnnRpt0811

Sharon Abbott A.R. Sandri, Inc. 400 Chapman Street Greenfield, MA 01301

RE: Annual Monitoring Report for Former R & D Sunoco, Route 30 & Route 100, Rawsonville, VT VTDEC Site #1991-1007

Dear Ms. Abbott:

DB Environmental Consulting (DBEC) has prepared this Annual Monitoring Report on behalf of A.R. Sandri, Inc. (Sandri) and at the request of the Vermont Department of Environmental Conservation (VTDEC). A Site Location Map is provided as Figure 1. A summary of relevant site conceptual model and contaminant information is provided below.

Fleming Oil Company of Brattleboro, Vermont presently operates the convenience/gasoline station. The site and surrounding properties slope to the north-northeast in the direction of the Winhall River. The closest presumed downgradient property Detail Sports is located to the northeast of the site. The Bischoff residential property is east of Detail Sports with the Kilburn residence beyond that. The Coleman Carwash is located north of the Detail Sports, Bischoff and Kilburn residences. The Coleman Carwash property abuts to the north by the Winhall River. The main contaminant of concern at the neighboring properties is Methyl tert-butyl ether (MTBE). The Alex Geller of the VTDEC discontinued annual sampling of Detail Sports, Coleman Carwash, and Kilburn residence.

Date of Sampling Event and Wells Sampled: May 31, 2011 BIS-INF, BIS-BET, and BIS-EFF. Groundwater Sampling Method: Purge and collect. Laboratory Analytical Method: EPA Method 8260 (VT VOC Scan) Groundwater Flow Direction: Northeasterly, as had been defined by previous reports. Groundwater Table Trends: The groundwater table had been noted in previous reports to be shallow in nature and less than 10 feet below ground surface. **Dissolved VOC Concentrations:** No Primary Groundwater Quality Standards (PGQS) were exceed in the samples collected from the Former Bishop residence with a report of BIS-INF (MTBE 13.1 ug/L) and the remaining samples BIS-BET, and BIS-EFF below minimum detection limits. Table 1 provides a summary of analytical results.

DB ENVIRONMENTAL CONSULTING BRATTLEBORO, VT August 12, 2011

CONCLUSIONS

DBEC provides the following conclusions:

A) MTBE concentrations were detected in the samples collected from the water supply well at a presumed downgradient property Former Bishop residence; No contaminants tested for were detected above PGQS for MTBE of 40 ug/L.

RECOMMENDATIONS

Based on the most recent monitoring event conducted by DBEC and historic information reviewed for the site the following recommendations are presented:

- As previously requested by the VTDEC, continue annual monitoring events to include sampling BIS-INF, BIS-BET, and BIS-EFF. Samples should be analyzed VOCs via EPA Method 8260 (VT VOC Scan). A monitoring report should be prepared to summarize the results of the sampling event and conclusions with recommendations to address MTBE levels noted in the water supply wells.
- 2) The next annual sampling event will be conducted in May 2012 upon approval from the VTDEC and Sandri.

If you have any questions regarding work performed at this site, please call me at 1-802-258-0360.

Sincerely, DB ENVIRONMENTAL CONSULTING

David Ball

David Balk, P.G., R.S.

cc: Alex Geller, VT DEC Site Manager Steve Jones, Former Bischoff Residence

Enclosures:

Figure 1	Site Locus Map
Figure 2	Sketch Map
Table 1	Summary of Groundwater Monitoring Data
Attachment I	Groundwater Sampling Log
Attachment II	Spectrum Analytical Laboratory Report



Site Sketch



Route 30 & Route 100

Rawsonville, VT 05155

Not to Scale

Former R&D Sunoco	Table 1										
Route 30 & 100											
Rawsonville, VT					Summary of C	Groundwater M	onitoring				
VTDEC #1991-1007					Volatile Orga	anic Compound	ls (ug/L)				
WELL ID					TOTAL		1.2.4-	1.3.5-			
Sampling Date	Benzene	Toluene	Ethvlbenzene	Xvlenes	BTEX	Naphthalene	Trimethylbenzene	Trimethylbenzene	МТВЕ		
Bischoff Influent				, ().01.00			· · · · · · · · · · · · · · · · · · ·				
2/12/1008						NT		NT	26		
2/12/1990									20		
0/21/1990									20		
2/24/1999											
0/17/1999											
2/10/2000									20		
8/8/2000			ND	ND			ND	ND	13		
2/14/2001			ND	ND		ND	ND	ND	27		
8/17/2001			ND	ND		ND	ND	ND	20		
2/13/2002	ND	ND	ND	ND	ND	ND	ND	ND	23		
8/14/2002	ND	ND	ND	ND	ND	ND	ND	ND	24		
4/2/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	20		
10/15/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	18.6		
4/1/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	19.2		
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	22.1		
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	9.5		
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	21.2		
4/18/2006	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	14.4		
8/5/2009	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	18.7		
5/28/2010	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	15.4		
5/31/2011	<1	<1	<1	<2	ND	<1	<1	<1	13.1		
Bischoff Between											
2/12/1998	ND	ND	ND	ND	ND	NT	NT	NT	ND		
8/27/1998	ND	ND	ND	ND	ND	NT	NT	NT	ND		
2/24/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/17/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2/16/2000	ND	ND	ND	ND		ND	ND	ND	ND		
8/8/2000	ND	ND	ND	ND		ND	ND	ND	ND		
2/14/2001						ND		ND	ND		
<u> </u>								ND	ND		
2/12/2007											
<u> </u>											
0/14/2002 1/2/2002				~20							
<u>+/2/2003</u> 10/15/2002	~1.0	~1.0		~2.0		~1.0	~1.0		~1.0		
10/10/2003	<1.0	~1.0	<1.0	<2.U		<1.U -1.0	~1.0	<1.0	<1.0		
4/ 1/2004	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
10/13/2004	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
5/20/2005	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
11/3/2005	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
4/18/2006	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
8/5/2009	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
5/28/2010	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
5/31/2011	<1	<1	<1	<2	ND	<1	<1	<1	<1		
				10 000							
PGQS	5	1,000	700	10,000	NA	20	35	0	40		
NOTES:											

1

Only compounds reported at concentrations above method detection limits are included in the table. ND = Not Detected above indicated detection limit NA= Not applicable NT= Not tested NS= Not sampled Bold/Highlighted results indicates concentrations exceeding the VT PGQS for that compound.

1019 Former R D Sunoco GWdata

Former R&D Sunoco	Table 1										
Route 30 & 100 Rawsonville VT					Summary of G	Sroundwater M	onitoring				
VTDEC #1991-1007					Volatile Orga	anic Compound	s (ua/L)				
WELL ID					TOTAL		1.2.4-	1.3.5-			
Sampling Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Naphthalene	Trimethylbenzene	Trimethylbenzene	МТВЕ		
Bischoff Effluent							-				
2/12/1998	ND	ND	ND	ND	ND	NT	NT	NT	ND		
8/27/1998	ND	ND	ND	ND	ND	NT	NT	NT	ND		
2/24/1999	ND		ND	ND	ND	ND	ND	ND	ND		
8/17/1999									18.0 ND		
8/8/2000					ND	ND	ND	ND	ND		
2/14/2001	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/17/2001	ND	ND	ND	ND	ND	ND	ND	ND	ND		
2/13/2002	ND	ND	ND	ND	ND	ND	ND	ND	ND		
8/14/2002	ND 11.0	ND 11.0	ND 10	ND		ND 10	ND :1.0	ND 10	ND 1.0		
4/2/2003	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
4/1/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	<1.0		
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	<1.0		
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	<1.0		
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	<1.0		
4/18/2006	<1.0	<1.0	1.6	2	3.6	1	6.3	<1.0	<1.0		
8/5/2009	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
5/20/2010	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	<1.0		
0,01/2011	5110			~2.0			\$1.0		2110		
Detail Influent											
2/12/1998	ND	ND	ND	ND	ND	NT	NT	NT	6.9		
8/27/1998	ND	ND	ND	ND	ND	NT	NT	NT	7.7		
2/24/1999	ND	ND	ND	ND	ND	ND	ND	ND	10		
8/1//1999					ND	ND	ND	ND	ND*		
2/16/2000									ND 6.1		
2/14/2001								ND	5.1		
8/17/2001	ND	ND	ND	ND	ND	ND	ND	ND	4.6		
2/13/2002	ND	ND	ND	ND	ND	ND	ND	ND	5.6		
8/14/2002	ND	ND	ND	ND	ND	ND	ND	ND	4		
4/2/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	4.1		
10/15/2003	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	3.61		
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.2		
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	1.4		
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.8		
4/18/2006	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.4		
6/22/2007	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.2		
6/5/2008	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	2.2		
5/20/2009	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	2.2		
5/20/2010	<u> </u>	<u> </u>	<u> </u>	<u> ∼∠.∪</u>		<u>\</u> 1.0	NI.U		2.0		
DUP (Detail Influent)											
0/40/4000						KI T	K 1 -T-		04		
2/12/1998 2/27/1000									31 / 0		
2/21/1990 2/24/1990	ND	ND	ND	ND	ND	ND	ND	ND	+.3 8.7		
8/17/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND*		
2/16/2000	ND	ND	ND	ND	ND	ND	ND	ND	7		
8/8/2000	ND	ND	ND	ND	ND	ND	ND	ND	6.4		
2/14/2001	ND	ND	ND	ND	ND	ND	ND	ND	5.2		
8/1//01 (Coleman)					ND	ND	ND	ND	7.2 5.6		
2/13/2002 8/17/2002									0.C \		
<u> </u>	<10	<10	<1.0	<20	ND	<10	<10	<1.0	4.3		
10/15/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.8		
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.2		
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	1.3		
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.9		
PGQS	5	1,000	700	10,000	NA	20	3!	50	40		
NOTES:		,	-	,				I			
Only compounds reported at c	oncentratio	ons above	method dete	ction limits a	are included in	the table.					
ND = Not Detected above indi	cated dete	ction limit	NA= Not app	licable NT=	Not tested NS	S= Not sampled	b				
Bold/Highlighted results indica	ites concer	ntrations e	xceeding the	VT PGQS fo	or that compo	und.					

Former R&D Sunoco Route 30 & 100	Table 1												
Rawsonville, VT					Summary of C	Groundwater M	onitoring						
VTDEC #1991-1007					Volatile Orga	anic Compound	ls (ug/L)						
WELL ID					TOTAL		1,2,4-	1,3,5-					
Sampling Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Naphthalene	Trimethylbenzene	Trimethylbenzene	MTBE				
Detail Between													
2/12/1998	ND	ND	ND	ND	ND	NT	NT	NT	ND				
8/27/1998	ND	ND	ND	ND	ND	NT	NT	NT	ND				
2/24/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND				
8/17/1999	ND	ND	ND	ND	ND	ND	ND	ND	ND				
2/16/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND				
8/8/2000	ND	ND	ND	ND	ND	ND	ND	ND	ND				
2/14/2001	ND	ND	ND	ND	ND	ND	ND	ND	ND				
8/17/2001	ND	ND	ND	ND	ND	ND	ND	ND	ND				
2/13/2002	ND	ND											
8/14/2002					System remo	oved per clien	t request						
						1	I	I					
0/40/4000						<u>кіт</u>	K ITT						
2/12/1998													
<u>۵/27/1998</u>													
2/24/1999 2/17/1000									7 0*				
2/16/2000													
8/8/2000			ND		ND	ND	ND	ND					
2/14/2001	ND	ND	ND	ND	ND	ND	ND	ND					
8/17/2001	ND	ND	ND	ND	ND	ND	ND	ND	ND				
2/13/2002	ND	ND	ND	ND	ND	ND	ND	ND	ND				
8/14/2002	ND	ND	ND	ND	ND	ND	ND	ND	4.1				
4/2/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	4.8				
10/15/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.61				
4/1/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.8				
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.4				
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	1.4				
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.0				
4/18/2006	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.5				
6/22/2007	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.5				
6/5/2008	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.2				
5/20/2009	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.3				
5/28/2010	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.7				
Kliburn Influent													
0/40/4000							KIT.		4 4				
2/12/1998									0.4				
0/21/1990 2/21/1000									3.4 12				
<u>2/24/1999</u> <u>8/17/1000</u>			ND	ND	ND	ND	ND	ND	11				
2/16/2000	ND	ND	ND	ND	ND	ND	ND	ND	8.3				
8/8/2000	NS	NS	NS	NS	NS	NS	NS	NS	NS				
2/14/2001	ND	ND	ND	ND	ND	ND	ND	ND	4.4				
8/17/2001	ND	ND	ND	ND	ND	ND	ND	ND	5				
2/13/2002	ND	ND	ND	ND	ND	ND	ND	ND	9.1				
8/14/2002	ND	ND	ND	ND	ND	ND	ND	ND	12				
4/2/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	9.3				
10/15/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	1.46				
4/1/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.3				
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	5.9				
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.5				
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.7				
4/18/2006	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	9.8				
6/5/2008	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	8.1				
5/20/2009	<1.0	<1.0	<1.0	<2.0		<1.0	<1.0	<1.0	5.4				
5/28/2010	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	1.6				
Only compounds reported at a	oncentratio	ons above	method deter	ction limite r	are included in	the table							

Only compounds reported at concentrations above method detection limits are included in the table. ND = Not Detected above indicated detection limit NA= Not applicable NT= Not tested NS= Not sampled Bold/Highlighted results indicates concentrations exceeding the VT PGQS for that compound.

Former R&D Sunoco	Table 1											
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WELL ID					TOTAL		1,2,4-	1,3,5-				
Sampling Date	Benzene	Toluene	Ethylbenzene	Xylenes	BTEX	Naphthalene	Trimethylbenzene	Trimethylbenzene	MTBE			
Kilburn Faucet												
2/12/1998	ND	ND	ND	ND	ND	NT	NT	NT	11			
8/27/1998	ND	ND	ND	ND	ND	NT	NT	NT	6.1			
2/24/1999	ND	ND	ND	ND	ND	ND	ND	ND	12			
8/17/1999	ND	ND	ND	ND	ND	ND	ND	ND	12			
2/16/2000	ND	ND	ND	ND	ND	ND	ND	ND	8.8			
8/8/2000	ND	ND	ND	ND	ND	ND	ND	ND	5.7			
2/14/2001	ND	ND	ND	ND	ND	ND	ND	ND	5.2			
8/17/2001	ND	ND	ND	ND	ND	ND	ND	ND	5.7			
2/13/2002	ND	ND	ND	ND	ND	ND	ND	ND	9.6			
8/14/2002	ND	ND	ND	ND	ND	ND	ND	ND	13			
4/2/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	9.6			
10/15/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	6.32			
4/1/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	3.3			
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	6.1			
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.8			
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	1.6			
4/18/2006	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	7.4			
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6/5/2008	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	7.2			
5/20/2009	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	5.4			
Coleman Influent												
									. –			
2/12/1998	ND	ND	ND	ND	ND	NT	NT	NT	15			
8/27/1998	ND	ND	ND	ND	ND	NI	NI	NI	/.1			
2/24/1999	ND	ND	ND		ND	ND	ND	ND	12			
8/17/1999						ND		ND	9.9			
2/10/2000									10			
0/0/2000									0.0			
2/14/2001									9.0			
2/13/2002									8.2			
<u>2/13/2002</u> <u>8/14/2002</u>	ND		ND	ND			ND	ND	9.7			
4/2/2002	<10	<10	<10	<20	ND	<10	<10	<10	8.6			
10/15/2003	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	8.57			
4/1/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	8.4			
10/15/2004	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	7.3			
5/20/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	2.7			
11/3/2005	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	6.3			
4/18/2006	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	6.3			
6/22/2007	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	6.1			
6/5/2008	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	4.5			
5/20/2009	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	7.2			
5/28/2010	<1.0	<1.0	<1.0	<2.0	ND	<1.0	<1.0	<1.0	6.4			
PGQS	5	1,000	700	10,000	NA	20	3	50	40			
NOTES:												
Only compounds reported at c	concentratio	ons above	e method dete	ction limits a	are included in	the table.						
ND = Not Detected above indi	icated dete	ction limit	NA= Not appl	icable NT=	Not tested NS	= Not sample	b					
Bold/Highlighted results indica	ates concer	ntrations e	xceeding the	VT PGQS f	or that compo	und.						

1019 Former R D Sunoco GWdata

GROUNDWATER MONITORING DATA												
VTC	DEC Site #	199	1-1007					Project N	lumber:	1019		
	Client:	A.R.	Sandri	, Inc.					Date:	5/31/11		
	Location:	Form	ner R &	D Sun	oco- Ra	wsonvil	le, VT	S	ampler:	DB		
			Point of	Total	Depth to	Water	Standing					
Well	Time	D	Reference	Depth	Water	Height	Volume	Odors	pН	Sp. Cond.	Temp	
ID	Sampled	(in.)	(PVC/Rim)	(feet)	(feet)	(feet)	(gallons)	(Y/N)		(umhos/sec)	(°C)	
BIS-INF	7:45	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BIS-BET	8:00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
BIS-EFF	8:15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
DET-INF	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
DET-EFF	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
KIL-INF	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
KIL-FAU	NS	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
COL-INF	NS	S NA NA NA NA NA						NA	NA	NA	NA	
Trip	7:00	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
NOTES:												
							_					
	BIS-INF											
	BIS-BET						-					
	BIS-EFF		<u> </u>				-					
			State disc	ontinued	sampling		-					
			State disc	ontinued	sampling		-					
	KII -FAU		State disc	ontinued	sampling							
	COL-INF		State disc	ontinued	sampling		1					
					1 0							
							_					
DB Environ	mental Coi	nsultir	ng									
PU Box 81												
Office: 1-80)2-258-036	0										
		-								ç	Sheet 1 of 1	

Report Date: 16-Jun-11 15:32



Final ReportRe-Issued ReportRevised Report

SPECTRUM ANALYTICAL, INC. Featuring HANIBAL TECHNOLOGY Laboratory Report

DB Environmental Consulting P.O. Box 815 Brattleboro, VT 05302-0815 Attn: David Balk

Project: Former R + D Sunoco - Rawsonville, VT Project #: 1019

Laboratory ID	Client Sample ID	<u>Matrix</u>	Date Sampled	Date Received
SB29493-01	BIS-INF	Drinking Water	31-May-11 07:45	02-Jun-11 14:00
SB29493-02	BIS-BET	Drinking Water	31-May-11 08:00	02-Jun-11 14:00
SB29493-03	BIS-EFF	Drinking Water	31-May-11 08:15	02-Jun-11 14:00
SB29493-04	Trip	Trip	31-May-11 07:00	02-Jun-11 14:00

I attest that the information contained within the report has been reviewed for accuracy and checked against the quality control requirements for each method. These results relate only to the sample(s) as received. All applicable NELAC requirements have been met.

Massachusetts # M-MA138/MA1110 Connecticut # PH-0777 Florida # E87600/E87936 Maine # MA138 New Hampshire # 2538 New Jersey # MA011/MA012 New York # 11393/11840 Pennsylvania # 68-04426/68-02924 Rhode Island # 98 USDA # S-51435



Authorized by:

Acole Leja

Nicole Leja Laboratory Director

Spectrum Analytical holds certification in the State of New York for the analytes as indicated with an X in the "Cert." column within this report. Please note that the State of New York does not offer certification for all analytes.

Please note that this report contains 6 pages of analytical data plus Chain of Custody document(s). When the Laboratory Report is indicated as revised, this report supersedes any previously dated reports for the laboratory ID(s) referenced above. Where this report identifies subcontracted analyses, copies of the subcontractor's test report are available upon request. This report may not be reproduced, except in full, without written approval from Spectrum Analytical, Inc.

Spectrum Analytical, Inc. is a NELAC accredited laboratory organization and meets NELAC testing standards. Use of the NELAC logo however does not insure that Spectrum is currently accredited for the specific method or analyte indicated. Please refer to our "Quality" web page at www.spectrum-analytical.com for a full listing of our current certifications and fields of accreditation. States in which Spectrum Analytical, Inc. holds NELAC certification are New York, New Hampshire, New Jersey and Florida. All analytical work for Volatile Organic and Air analysis are transferred to and conducted at our 830 Silver Street location (NY-11840, FL-E87936 and NJ-MA012).

CASE NARRATIVE:

The sample temperature upon receipt by Spectrum Analytical courier was recorded as 3.2 degrees Celsius. The condition of these samples was further noted as received on ice. The samples were transported on ice to the laboratory facility and the temperature was recorded at 3.0 degrees Celsius upon receipt at the laboratory. Please refer to the Chain of Custody for details specific to sample receipt times.

An infrared thermometer with a tolerance of +/- 2.0 degrees Celsius was used immediately upon receipt of the samples.

If a Matrix Spike (MS), Matrix Spike Duplicate (MSD) or Duplicate (DUP) was not requested on the Chain of Custody, method criteria may have been fulfilled with a source sample not of this Sample Delivery Group.

See below for any non-conformances and issues relating to quality control samples and/or sample analysis/matrix.

SW846 8260B/C

Samples:

S105029-CCV1

Analyte percent difference is outside individual acceptance criteria (20), but within overall method allowances.

1,2-Dibromoethane (EDB) (26.2%)

This affected the following samples:

1110855-BLK1 1110855-BS1 1110855-BSD1 BIS-BET BIS-EFF BIS-INF Trip

Sample Id	entification		Client	Client Project #			Calla	ation Data	/Time	Received		
BIS-INF			<u>Chem</u>	<u>1010</u>	г	<u>Iviau IX</u> Vrinking W	Lator 21	May 11 0	<u>1 IIIIe</u> 1-45	02-Jun-11		
SB29493-	29493-01 S No. Analyte(s) Result		-	1019	L	minking w	valei 51-	-wiay-110	.43	02-	Juli-11	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Or	rganic Compounds											
Volatile Or	rganic Compounds by 8260B											
Prepared	by method SW846 5030 Water	<u>' MS</u>										
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	07-Jun-11	08-Jun-11	JRO	1110855	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	0.5	1		"			"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	1.0	1		"	"	"	"	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	13.1		µg/l	1.0	1	"	"	"	"	"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"	"	"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"	"		"	
95-63-6	1,2,4-Trimethylbenzene	BRL		µg/l	1.0	1	"	"	"		"	
108-67-8	1,3,5-Trimethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"			"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1		"	"	"	"	
Surrogate r	ecoveries:											
460-00-4	4-Bromofluorobenzene	91			70-130 %		"	"			"	
2037-26-5	Toluene-d8	104			70-130 %		"	"		"	"	
17060-07-0	1,2-Dichloroethane-d4	100			70-130 %		"	"		"	"	
1868-53-7	Dibromofluoromethane	103			70-130 %		u	"	"		"	
Sample Id	entification											
BIS-BET			<u>Client</u>	t Project #		<u>Matrix</u>	Colle	ection Date	/Time	Re	ceived	
SB29493-	02			1019 Drinking Water			Vater 31-	02-Jun-11				
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Or	rganic Compounds											
<u>Volatile Or</u> Prepared	rganic Compounds by 8260B by method SW846 5030 Water	MS										
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	07-Jun-11	08-Jun-11	JRO	1110855	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	0.5	1	"	"			"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	1.0	1	"	"		"	"	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1						
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1					"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"		"	"	
108-88-3	Toluene	BRL		µg/l	1.0	1		"			"	
95-63-6	1,2,4-Trimethylbenzene	BRL		µg/l	1.0	1	"	"		"		
108-67-8	1,3,5-Trimethylbenzene	BRL		µg/l	1.0	1	"	"				
179601-23-1	m,p-Xylene	BRL		μg/l	2.0	1		"			"	
95-47-6	o-Xylene	BRL		μg/l	1.0	1		"			"	
Surroaate r	ecoveries:											
460-00-4	4-Bromofluorobenzene	94			70-130 %						"	
2037-26-5	Toluene-d8	103			70-130 %			"			"	
17060-07-0	1 2-Dichloroethane-d4	98			70-130 %			"			"	
1868-53-7	Dibromofluoromethane	102			70-130 %			"			"	
· · · ·												

Sample Id	entification	Client	Droject #	L	Motriy	Colle	Collection Date/Time			Received		
BIS-EFF			Chem	10 <u>10</u>	<u>:</u> Г	rinking W		$M_{\rm av}$ 11 Ω	2·15	02-	Jun_11	
SB29493-03 CAS No. Analyte(s) Resul			-	1017	L	minking w	<i>f</i> ater 51 ⁻	1 via y-11 00	5.15	02-	Juli-11	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatile Or	rganic Compounds											
Volatile Or	rganic Compounds by 8260B											
Prepared	by method SW846 5030 Water	MS										
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	07-Jun-11	08-Jun-11	JRO	1110855	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	0.5	1	"	"			"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	1.0	1	"	"			"	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"	"	"	"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"			"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"			"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"			"	
95-63-6	1,2,4-Trimethylbenzene	BRL		µg/l	1.0	1		"			"	
108-67-8	1,3,5-Trimethylbenzene	BRL		µg/l	1.0	1	"	"			"	
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"			"	
95-47-6	o-Xylene	BRL		µg/l	1.0	1		"	"	"	"	
Surrogate r	ecoveries:											
460-00-4	4-Bromofluorobenzene	95			70-130 %			"			"	
2037-26-5	Toluene-d8	103			70-130 %		"	"			"	
17060-07-0	1,2-Dichloroethane-d4	100			70-130 %		"	"			"	
1868-53-7	Dibromofluoromethane	104			70-130 %		n	"	"	"		
Sample Id	entification											
<u>Sumpre ru</u> Trin			Client	Project #	<u>-</u>	<u>Matrix</u>	Colle	ection Date	/Time	Ree	ceived	
SB29493-	04			1019		Trip	31-	31-May-11 07:00			02-Jun-11	
CAS No.	Analyte(s)	Result	Flag	Units	*RDL	Dilution	Method Ref.	Prepared	Analyzed	Analyst	Batch	Cert.
Volatilo Or	rganic Compounds											
Volatile Or	rganic Compounds by 8260B											
Prepared	by method SW846 5030 Water	MS										
71-43-2	Benzene	BRL		µg/l	1.0	1	SW846 8260B/C	07-Jun-11	08-Jun-11	JRO	1110855	
106-93-4	1,2-Dibromoethane (EDB)	BRL		µg/l	0.5	1	"	"			"	
107-06-2	1,2-Dichloroethane	BRL		µg/l	1.0	1	"	"			"	
100-41-4	Ethylbenzene	BRL		µg/l	1.0	1	"	"			"	
1634-04-4	Methyl tert-butyl ether	BRL		µg/l	1.0	1	"	"			"	
91-20-3	Naphthalene	BRL		µg/l	1.0	1	"	"			"	
108-88-3	Toluene	BRL		µg/l	1.0	1	"	"				
95-63-6	1,2,4-Trimethylbenzene	BRL		µg/l	1.0	1	"	"				
108-67-8	1,3,5-Trimethylbenzene	BRL		µg/l	1.0	1	"	"				
179601-23-1	m,p-Xylene	BRL		µg/l	2.0	1	"	"				
95-47-6	o-Xylene	BRL		µg/l	1.0	1	п	"		"	"	
Surrogate r	ecoveries:											
460-00-4	4-Bromofluorobenzene	90			70-130 %		"	"				
2037-26-5	Toluene-d8	99			70-130 %			"		"		
17060-07-0	1,2-Dichloroethane-d4	102			70-130 %			"		"		
1868-53-7	Dibromofluoromethane	102			70-130 %		"	"		"		

Volatile Organic Compounds - Quality Control

Analyte(s)	Result	Flag	Units	*RDL	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch 1110855 - SW846 5030 Water MS										
Blank (1110855-Bl K1)					Pre	epared: 01	lun-11 Ana	alvzed: 07-Ji	ın-11	
Benzene	BRI		ua/l	10	<u></u>				<u></u>	
Chlorobenzene	BRI		ug/l	1.0						
1.2-Dibromoethane (EDB)	BRL		ua/l	0.5						
1 2-Dichloroethane	BRI		ug/l	1.0						
1 1-Dichloroethene	BRI		ug/l	1.0						
Ethylbenzene	BRL		ua/l	1.0						
Methyl tert-butyl ether	BRL		ua/l	1.0						
Naphthalene	BRL		ua/l	1.0						
Toluene	BRL		ua/l	1.0						
Trichloroethene	BRL		µg/l	1.0						
1.2.4-Trimethylbenzene	BRL		ua/l	1.0						
1,3,5-Trimethylbenzene	BRL		µg/l	1.0						
m,p-Xylene	BRL		µg/l	2.0						
o-Xylene	BRL		μg/l	1.0						
Surrogate: 4-Bromofluorobenzene	46.8		µg/l		50.0		94	70-130		
Surrogate: Toluene-d8	50.3		µg/l		50.0		101	70-130		
Surrogate: 1,2-Dichloroethane-d4	49.6		µg/l		50.0		99	70-130		
Surrogate: Dibromofluoromethane	51.1		µg/l		50.0		102	70-130		
LCS (1110855-BS1)					Pre	epared: 01-	Jun-11 Ana	alyzed: 07-Ju	<u>un-11</u>	
Benzene	20.4		µg/l		20.0		102	70-130		
1,2-Dibromoethane (EDB)	24.3		µg/l		20.0		122	70-130		
1,2-Dichloroethane	20.4		µg/l		20.0		102	70-130		
Ethylbenzene	23.4		µg/l		20.0		117	70-130		
Methyl tert-butyl ether	20.9		µg/l		20.0		105	70-130		
Naphthalene	21.9		µg/l		20.0		110	70-130		
Toluene	20.3		µg/l		20.0		102	70-130		
1,2,4-Trimethylbenzene	24.2		µg/l		20.0		121	70-130		
1,3,5-Trimethylbenzene	20.8		µg/l		20.0		104	70-130		
m,p-Xylene	48.7		µg/l		40.0		122	70-130		
o-Xylene	24.5		µg/l		20.0		122	70-130		
Surrogate: 4-Bromofluorobenzene	52.4		µg/l		50.0		105	70-130		
Surrogate: Toluene-d8	50.0		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	48.7		µg/l		50.0		97	70-130		
Surrogate: Dibromofluoromethane	50.8		µg/l		50.0		102	70-130		
LCS Dup (1110855-BSD1)					Pre	epared: 01-	Jun-11 Ana	alyzed: 07-Ju	<u>un-11</u>	
Benzene	19.8		µg/l		20.0		99	70-130	3	30
1,2-Dibromoethane (EDB)	24.8		µg/l		20.0		124	70-130	2	25
1,2-Dichloroethane	19.9		μg/l		20.0		100	70-130	2	25
Ethylbenzene	20.8		µg/l		20.0		104	70-130	11	30
Methyl tert-butyl ether	27.5	QM9	μg/l		20.0		137	70-130	27	30
Naphthalene	20.5		μg/l		20.0		102	70-130	7	30
Toluene	19.8		µg/l		20.0		99	70-130	3	30
1,2,4-Trimethylbenzene	22.5		μg/l		20.0		113	70-130	7	30
1,3,5-Trimethylbenzene	19.3		µg/l		20.0		96	70-130	8	30
m,p-Xylene	43.9		µg/l		40.0		110	70-130	10	30
o-Xylene	22.3		µg/l		20.0		112	70-130	9	30
Surrogate: 4-Bromofluorobenzene	51.3		µg/l		50.0		103	70-130		
Surrogate: Toluene-d8	50.0		µg/l		50.0		100	70-130		
Surrogate: 1,2-Dichloroethane-d4	47.4		µg/l		50.0		95	70-130		
Surrogate: Dibromofluoromethane	51.5		µg/l		50.0		103	70-130		

This laboratory report is not valid without an authorized signature on the cover page.

Notes and Definitions

- QM9 The spike recovery for this QC sample is outside the established control limits. The sample results for the QC batch were accepted based on LCS/LCSD or SRM recoveries within the control limits.
- BRL Below Reporting Limit Analyte NOT DETECTED at or above the reporting limit
- dry Sample results reported on a dry weight basis
- NR Not Reported
- RPD Relative Percent Difference

A plus sign (+) in the Method Reference column indicates the method is not accredited by NELAC.

Laboratory Control Sample (LCS): A known matrix spiked with compound(s) representative of the target analytes, which is used to document laboratory performance.

Matrix Duplicate: An intra-laboratory split sample which is used to document the precision of a method in a given sample matrix.

<u>Matrix Spike</u>: An aliquot of a sample spiked with a known concentration of target analyte(s). The spiking occurs prior to sample preparation and analysis. A matrix spike is used to document the bias of a method in a given sample matrix.

<u>Method Blank</u>: An analyte-free matrix to which all reagents are added in the same volumes or proportions as used in sample processing. The method blank should be carried through the complete sample preparation and analytical procedure. The method blank is used to document contamination resulting from the analytical process.

<u>Method Detection Limit (MDL)</u>: The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix type containing the analyte.

<u>Reportable Detection Limit (RDL)</u>: The lowest concentration that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operating conditions. For many analytes the RDL analyte concentration is selected as the lowest non-zero standard in the calibration curve. While the RDL is approximately 5 to 10 times the MDL, the RDL for each sample takes into account the sample volume/weight, extract/digestate volume, cleanup procedures and, if applicable, dry weight correction. Sample RDLs are highly matrix-dependent.

<u>Surrogate</u>: An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. These compounds are spiked into all blanks, standards, and samples prior to analysis. Percent recoveries are calculated for each surrogate.

<u>Continuing Calibration Verification</u>: The calibration relationship established during the initial calibration must be verified at periodic intervals. Concentrations, intervals, and criteria are method specific.

Validated by: Kimberly Wisk

29493-01 Hant O=Oil SW= Surface Water SO=Soil $X1 = TR_1 P$ DW=Drinking Water GW=Groundwater Project Mgr. DAVID BALM Report TO: DBENVIRON MENTAL CONSULTING Telephone #: 8= NaHSO4 9= AOC ICE Lab Id: $1=Na_2S2O_3$ 2=HCI $3=H_2SO_4$ OH TRIP 03 615-EFF 02 815-BET Relinquished by: 3. 3. 2. 9. SPECTRUM ANALYTICAL, INC. HANIBAL TECHNOLOGY site & BIS-INF 1-802-Sample Id: G=Grab X2 =258-0350 C=Composite 11 Almgren Drive • Agawam, MA 01001 • 413-789-9018 • FAX 413-789-4076 • www.spectrum-analytical.com w Date: SL=Sludge A=Air $4 = HNO_3$ WW=Wastewater 10 =CHAIN OF CUSTODY RECORD Received by: X3 =5=NaOH 7:00 51:0 00,00 Time: 7:45 Invoice TO: DB EWAR ONMENTAL CONSULTING P.O. No. 6=Ascorbic Acid D Туре 6/2/4 X Page of PS Matrix 6/2/11 Date: i U) W # of VOA Vials 7=CH₃OH # of Amber Glass RON: DISCUMTED Containers: # of Clear Glass 9:30 Time: 1400 # of Plastic 29 10 il 4 VT 3.2 Temp°C VOC SCAN Project No.: 10/9 Sampler(s): List preservative code below: Location: Site Name: FORMER RTD SUNOCC Ambient Alced Refrigerated Fridge temp_ E-mail to EDD Format Analyses: DAVID BALK RAUSONVILLE ☐ Standard TAT - 7 to 10 business days □ Rush TAT - Date Needed: · Min. 24-hour notification needed for rushes. · All TATs subject to laboratory approval Samples disposed of after 60 days unless otherwise instructed. Special Handling: □ Provide MA DEP MCP CAM Report □ Provide CT DPH RCP Report □ Other State specific reporting standards: QA/QC Reporting Notes: QA/QC Reporting Level (check as needed) °C Freezer temp_ SB29473 (A) State: Y