DeeAar Holdings, LLC

Current Projects Using AgroRemed® /VaporRemed®

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February 21, 2021

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- Appendix - Reports

Abandoned Gas Station in Mays Landing, NJ

Site location

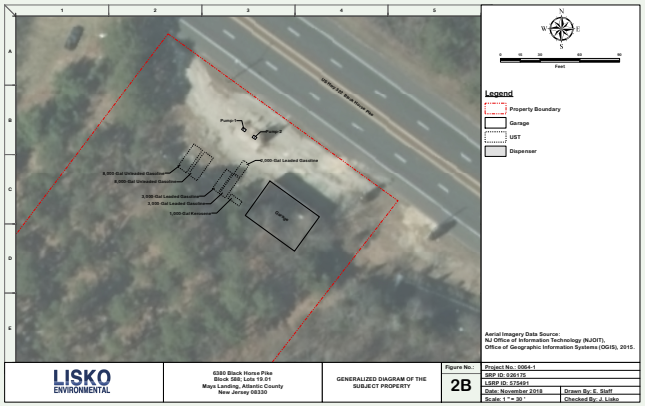


Figure: Site: An Abandoned Gas Station

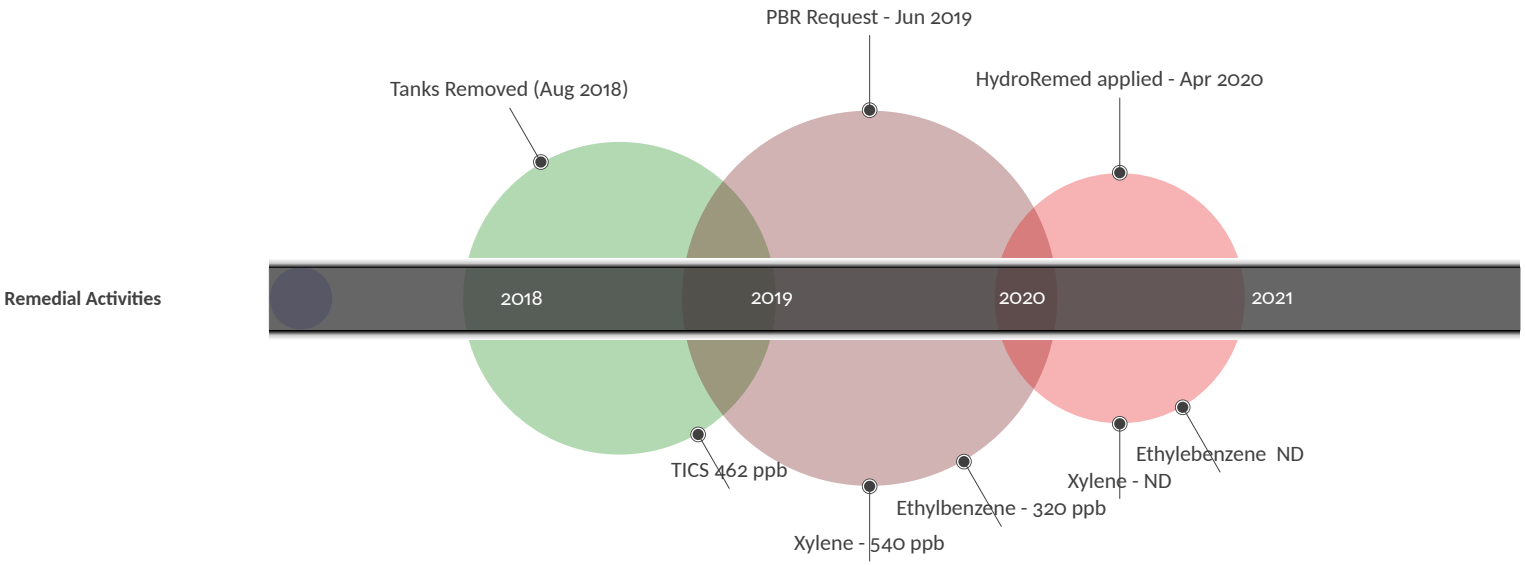
Background

Tank
2 x 8000 gallon UST
1 x 1000 gallon kerosene UST
2 x 3000 gallon leaded gasoline
1 x 2000 gallon leaded gasoline UST

- The gas station has been abandoned for over ten (10) years.
- At the time of cleanup, the team could arrive at an estimated gas tanks.
- Tanks were removed in 2018.
- Contamination baselines were established in 2019.
- HydroRemed was added to site in April 2020.
- The hydrocarbon contamination levels have been non-detect (ND) for two samples.
- Secondary contamination has been detected and is being addressed.

Current State : The monitoring for levels of secondary contamination is continuing.

Mays Landing - Remediation Timeline contd.



Contaminated Gas Station in Antrim, NH

Site location

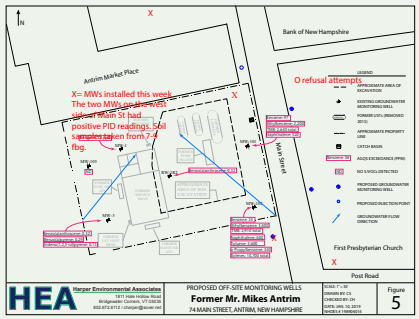


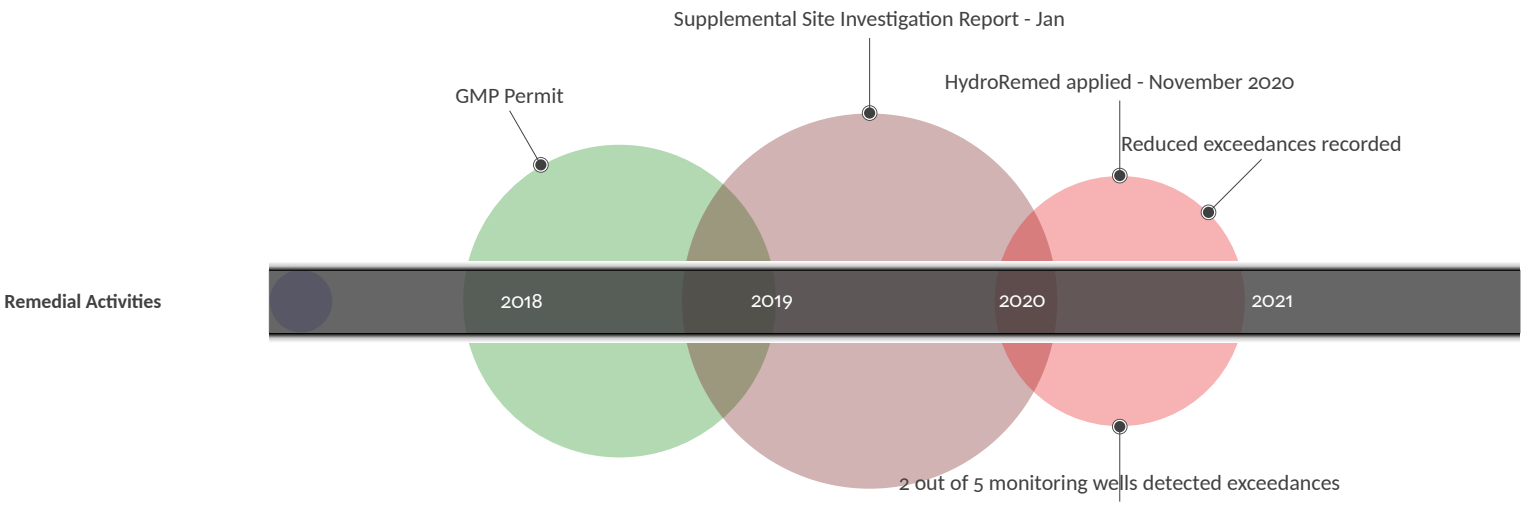
Figure: Sitemap of monitoring wells

Background

- The site is a former retail gasoline and fueling facility, reportedly since 1970s;
- In 1988, several underground storage tanks were removed.
- Previous remedial efforts at the site were conducted by prior consultants and included the use of an in-situ submerged oxygen curtain (iSOC) in 2002 and bio-augmentation via the addition of live bacterial cultures in 2004 to remediate residual petroleum contaminant levels in groundwater at the site.
- Our group acquired the property in July 2018;
- The project is currently 70 % complete. There are exceedances recorded near two monitoring wells;
- Groundwater from MW-101 contained concentrations of 11 VOCs and 3 PAHs, including concentrations of benzene (32 parts per billion [ppb]) and naphthalene (160 ppb) that exceeded the New Hampshire Ambient Groundwater Quality Standards (AGQS);
- Groundwater from MW-102 contained concentrations of eight VOCs and 3 PAHs, none of which exceeded the AGQS; and
- * Details are in the attached report.

Current State : Active. We are reaching out to the DES to discuss our protocol to address the remaining 30% of contamination.

Antrim NH - Remediation Timeline contd.

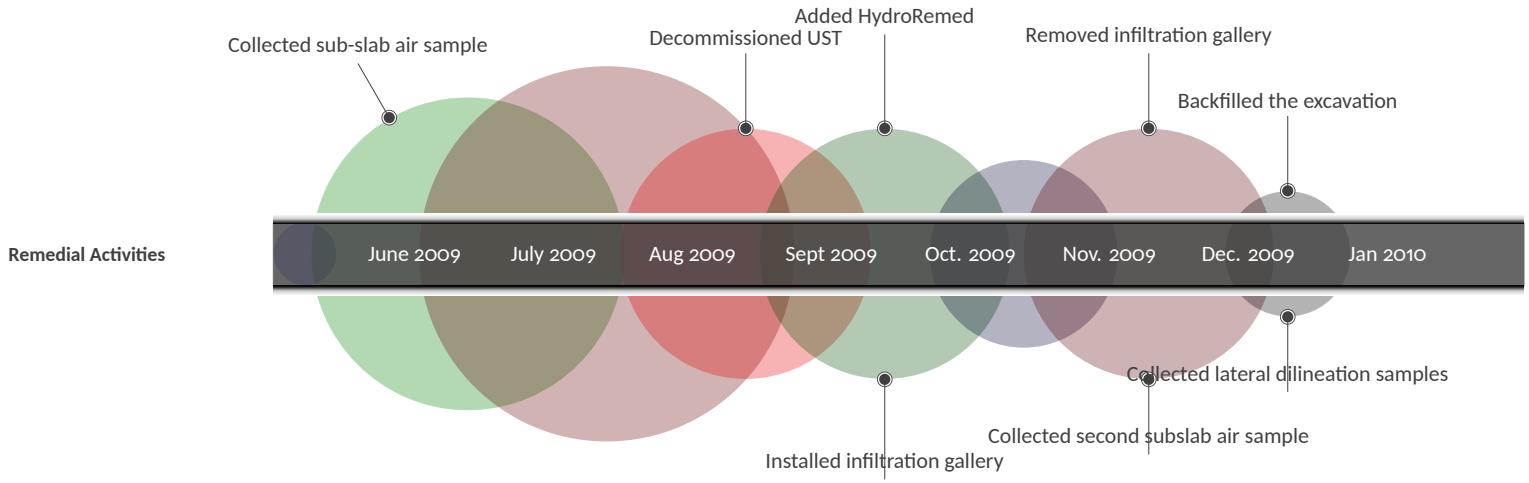


Past Projects using AgroRemed/HydroRemed

- UST decommissioning and complex soil-only risk-based cleanup, Portland OR

UST Decommissioning and Complex Soil-only Risk-based Cleanup

... "As suggested by the results of the second sub-slab air sample, the microbes were particularly successful in degrading the plume beneath the basement slab. " - Mark N, Geohydrologist, Xavier Environmental, Inc.
Please click on this link for details.



Site location

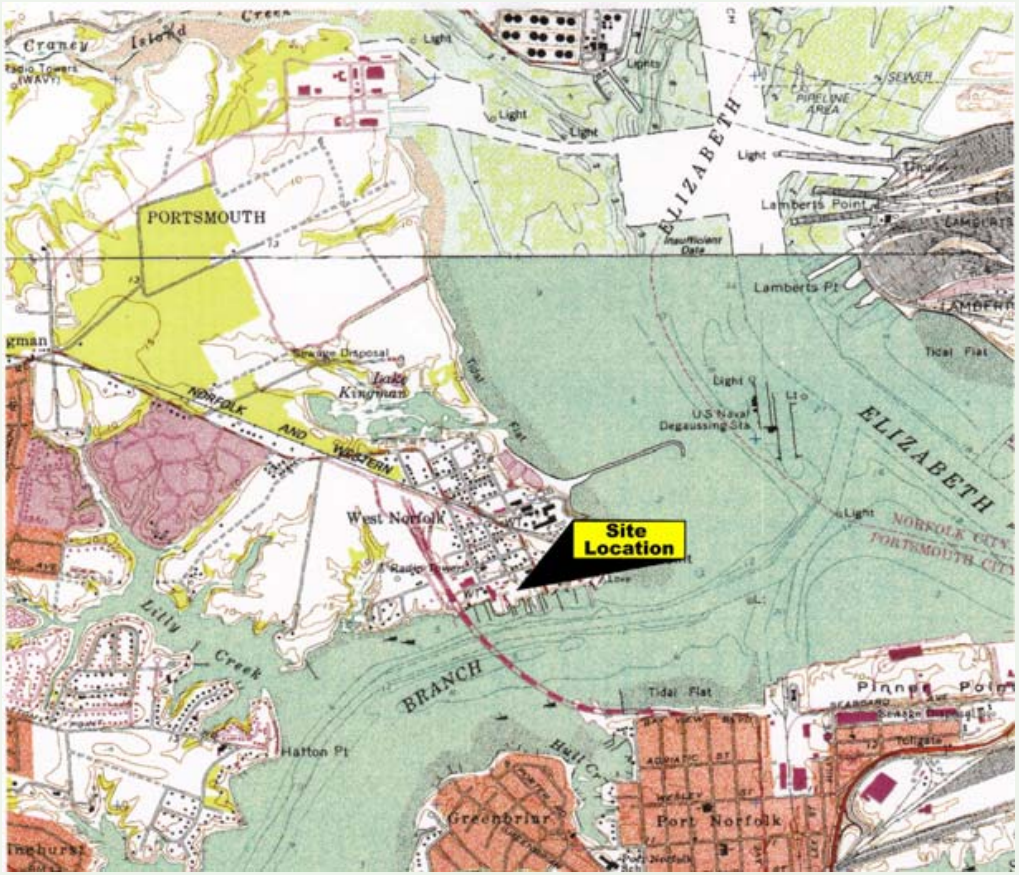
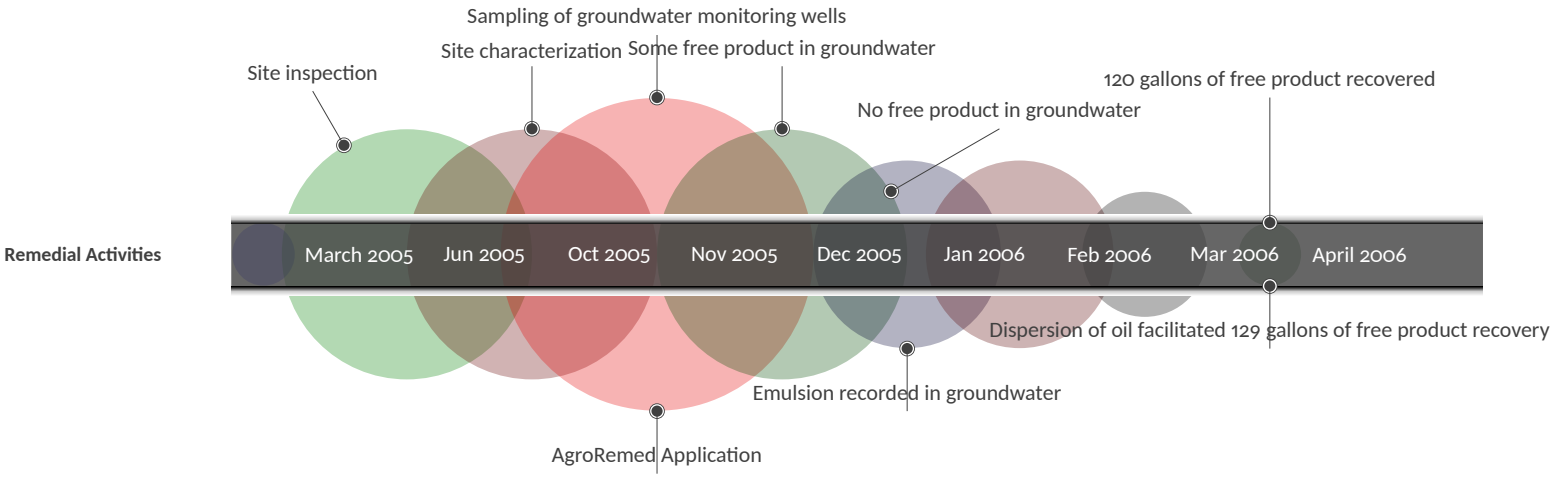


Figure: Site Location

VaDEQ DEQ PC# 055160 (2)

"... .InSitu Bioremediation was requested by the DEQ, as a cost effective method of remediation at this site. A product known as AgroRemed ® was chosen, because of its ability to address all phases of petroleum contamination using a single application." Marvin S, Project Geologist. Link to the report.

VaDEQ DEQ PC# 055160 (3)



VaDEQ DEQ PC# 055160 (2) Additional Notes

A notable aspect of the groundwater data shows that free product on Dec 30th reduced to 0. This reduction can be attributed to the addition of AgroRemed on 18th Oct, 2005. Further, the free product in Jan 2006 was in the form of an emulsion. The author's conclusion based on this data is that the emulsion is evidence of the biodispersion enabled by AgroRemed. In retrospect, that is, after observing field data in numerous projects since 2005, we assert that this emulsion phase is critical for effective bioremediation of oil contamination on the field.

"... .The application of AgroRemed appears to have reduced the levels of dissolved phase contamination in the groundwater and increased dispersion of the free product, resulting in an increase in the amount of free product in MW-4. Recovery of the free product utilizing aggressive fluid vapor recovery (AFVR) appears to be effective; therefore, its[a] continued use is recommended. " Project Geologist

[a] here "its" refers to the AFVR and not AgroRemed. There was no need to apply AgroRemed after the application in Oct 2005.

Some more references

References from Sarva Bio Remed's online shop, with their permission.

- Cleanup of contaminated soil at ANA Shipyard, 2006
- Corrective Action Plan VDEQ PC#911427
- Corrective Action Plan - VDEQ PC#972073
- Corrective Action Plan VDEQ PC# 055074
- PADEP closure report documenting removal of one 500-gallon tank and two 1000-gallon tanks

About DeeAar Holdings, LLC

Our group specializes in bioremediation of contaminated properties such as,

- abandoned gas stations;
- and properties contaminated with TCE/PCE.

We strive reduce the time-to-market for contaminated properties to realize value to our clients.

Team

- Dinkar Ganti, Lead Developer, DeeAar Holdings, LLC.

Strategic Partnerships

- Sarva Bio Remed, LLC.

  Sarva Bio Remed, LLC is a leader in providing and developing innovative environmental solutions for remediation of contaminants including gasoline, number 2 heating oil, asphalt, PCE/TCE.

Appendix

		SAMPLE ID:	TMW-1			
		LAB ID:	L1851986-01			
		COLLECTION DATE:	12/17/2018			
		SAMPLE DEPTH:				
		SAMPLE MATRIX:	WATER			
		NJ I-PL (PQL)				
ANALYTE	**CAS**	**(ug/l)**	**Conc**	**Q**	**RL**	**MDL**
MICROEXTRACTABLES BY GC						
VOLATILE ORGANICS BY GC/MS						
Benzene	71-43-2	1	ND		0.5	0.16
Toluene	108-88-3	1	ND		0.75	0.2
Ethylbenzene	100-41-4	2	ND		0.5	0.17
Methyl tert butyl ether	1634-04-4	1	ND		1	0.17
Xylene (Total)	1330-20-7	2	ND		1	0.33
cis-1,2-Dichloroethene	156-59-2	1	0.26	J	0.5	0.19
Acetone	67-64-1	10	3.5	J	5	1.5
Carbon disulfide	75-15-0	1	ND		5	0.3
2-Butanone	78-93-3	2	ND		5	1.9
VOLATILE ORGANICS BY GC/MS-TIC						
Total TIC Compounds			-		-	-
BASE/NEUTRAL EXTRACTABLES BY GC/MS- WESTBOROUGH LAB						
Acenaphthene	83-32-9	10	ND		2	0.44
Naphthalene	91-20-3	2	1.2	J	2	0.46
Bis(2-ethylhexyl)phthalate	117-81-7	3	2.4	J	3	1.5
Fluorene	86-73-7	1	ND		2	0.41
Phenanthrene	85-01-8		ND		2	0.33
Dibenzofuran	132-64-9		ND		2	0.5
2-Methylnaphthalene	91-57-6		ND		2	0.45
Carbazole	86-74-8		ND		2	0.49
BASE/NEUTRAL EXTRACTABLES BY GC/MS- WESTBOROUGH LAB-TIC						
Total TIC Compounds			162	J	0	0
BASE/NEUTRAL EXTRACTABLES BY GC/MS-SIM						
Benzo(a)anthracene	56-55-3	0.1	0.1		0.1	0.02
Benzo(a)pyrene	50-32-8	0.1	0.09	J	0.1	0.02
Benzo(b)fluoranthene	205-99-2	0.2	0.18		0.1	0.01
Benzo(k)fluoranthene	207-08-9	0.3	0.08	J	0.1	0.01
Dibenzo(a,h)anthracene	53-70-3		0.03	J	0.1	0.01
Indeno(1,2,3-cd)pyrene	193-39-5	0.2	0.09	J	0.1	0.01

* Comparison is not performed on parameters with non-numeric criteria.

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Figure: Concentration Levels, ML : Dec 2018

Appendix - Contd.

				SAMPLE ID:
				LAB ID:
				COLLECTION DATE:
				SAMPLE DEPTH:
				SAMPLE MATRIX:
		NJ-GWIIA	NJ-INTGW	NJ-GWI-PL
ANALYTE	**CAS**	**(ug/l)**	**(ug/l)**	**(ug/l)**
VOLATILE ORGANICS BY GC/MS				
Benzene	71-43-2	1		1
Ethylbenzene	100-41-4	700		2
Xylenes, Total	1330-20-7	1000		2
Acetone	67-64-1	6000		10
Isopropylbenzene	98-82-8	700		1
Cyclohexane	110-82-7			1
Methyl cyclohexane	108-87-2			1
Total VOCs				
VOLATILE ORGANICS BY GC/MS-TIC				
Unknown Benzene				1
Indane	000496-11-7			1
Naphthalene	000091-20-3			2
Unknown Aromatic				1
Unknown Benzene				1
Benzene, Propyl-	000103-65-1			1
Unknown Benzene				1
Silanol, Trimethyl-	001066-40-6			1
Unknown Benzene				1
Total TIC Compounds		500*		
BASE/NEUTRAL EXTRACTABLES BY GC/MS- WESTBOROUGH LAB				
Naphthalene	91-20-3	300		2
Bis(2-ethylhexyl)phthalate	117-81-7	3		3
BASE/NEUTRAL EXTRACTABLES BY GC/MS- WESTBOROUGH LAB-TIC				
Unknown Alkane				1
Unknown Alkane				1
Unknown Alkane				1
Unknown Alkane				1
Unknown Benzene				1
Unknown Aldehyde				1
Unknown Benzene				1
Aldol Condensates				1
Unknown Benzene				1
Unknown Alkane				1
Unknown				1
Unknown				1
Unknown				1
Unknown Benzene				1
Unknown Alkane				1
Unknown				1
Indane	000496-11-7			1
Unknown Benzene				1
Unknown Benzene				1
Ethylbenzene	000100-41-4			2
Unknown Alkane				1
Unknown Phenol				1
Unknown Alkane				1

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Figure: Concentration Levels, ML : Jun 2019

Appendix - Contd.

		SAMPLE ID:	MW-1			
		LAB ID:	L2039431-01			
		COLLECTION DATE:	9/18/2020			
		SAMPLE DEPTH:				
		SAMPLE MATRIX:	WATER			
		NJ-GWIIA				
ANALYTE	CAS	(ug/l)	Conc	Q	RL	MDL
VOLATILE ORGANICS BY GC/MS						
1,2-Dibromo-3-chloropropane	96-12-8	0.02	ND		2.5	0.35
1,4-Dioxane	123-91-1	0.4	ND		250	61
1,2-Dibromoethane	106-93-4	0.03	ND		2	0.19
Methylene chloride	75-09-2	3	ND		2.5	0.68
1,1-Dichloroethane	75-34-3	50	ND		0.75	0.21
Chloroform	67-66-3	70	ND		0.75	0.22
Carbon tetrachloride	56-23-5	1	ND		0.5	0.13
1,2-Dichloropropane	78-87-5	1	ND		1	0.14
Dibromochloromethane	124-48-1	1	ND		0.5	0.15
1,1,2-Trichloroethane	79-00-5	3	ND		0.75	0.14
Tetrachloroethene	127-18-4	1	ND		0.5	0.18
Chlorobenzene	108-90-7	50	ND		0.5	0.18
Trichlorofluoromethane	75-69-4	2000	ND		2.5	0.16
1,2-Dichloroethane	107-06-2	2	ND		0.5	0.13
1,1,1-Trichloroethane	71-55-6	30	ND		0.5	0.16
Bromodichloromethane	75-27-4	1	ND		0.5	0.19
trans-1,3-Dichloropropene	10061-02-6		ND		0.5	0.16
cis-1,3-Dichloropropene	10061-01-5		ND		0.5	0.14
1,3-Dichloropropene, Total	542-75-6	1	ND		0.5	0.14
Bromoform	75-25-2	4	ND		2	0.25
1,1,2,2-Tetrachloroethane	79-34-5	1	ND		0.5	0.17
Benzene	71-43-2	1	ND		0.5	0.16
Toluene	108-88-3	600	ND		0.75	0.2
Ethylbenzene	100-41-4	700	ND		0.5	0.17
Chloromethane	74-87-3		ND		2.5	0.2
Bromomethane	74-83-9	10	ND		1	0.26
Vinyl chloride	75-01-4	1	ND		0.2	0.07
Chloroethane	75-00-3		ND		1	0.13
1,1-Dichloroethene	75-35-4	1	ND		0.5	0.17
trans-1,2-Dichloroethene	156-60-5	100	ND		0.75	0.16
Trichloroethene	79-01-6	1	ND		0.5	0.18
1,2-Dichlorobenzene	95-50-1	600	ND		2.5	0.18
1,3-Dichlorobenzene	541-73-1	600	ND		2.5	0.19
1,4-Dichlorobenzene	106-46-7	75	ND		2.5	0.19
Methyl tert butyl ether	1634-04-4	70	ND		1	0.17
p/m-Xylene	179601-23-1		ND		1	0.33
o-Xylene	95-47-6		ND		1	0.39
Xylenes, Total	1330-20-7	1000	ND		1	0.33
cis-1,2-Dichloroethene	156-59-2	70	ND		0.5	0.19
1,2-Dichloroethene, Total	540-59-0		ND		0.5	0.16
Styrene	100-42-5	100	ND		1	0.36
Dichlorodifluoromethane	75-71-8	1000	ND		5	0.24
Acetone	67-64-1	6000	6.1		5	1.5
Carbon disulfide	75-15-0	700	ND		5	0.3
2-Butanone	78-93-3	300	ND		5	1.9
4-Methyl-2-pentanone	108-10-1		ND		5	0.42
2-Hexanone	591-78-6	40	ND		5	0.52
Bromochloromethane	74-97-5		ND		2.5	0.15
Isopropylbenzene	98-82-8	700	ND		0.5	0.19
1,2,3-Trichlorobenzene	87-61-6		ND		2.5	0.23
1,2,4-Trichlorobenzene	120-82-1	9	ND		2.5	0.22
Methyl Acetate	79-20-9	7000	ND		2	0.23
Cyclohexane	110-82-7		ND		10	0.27

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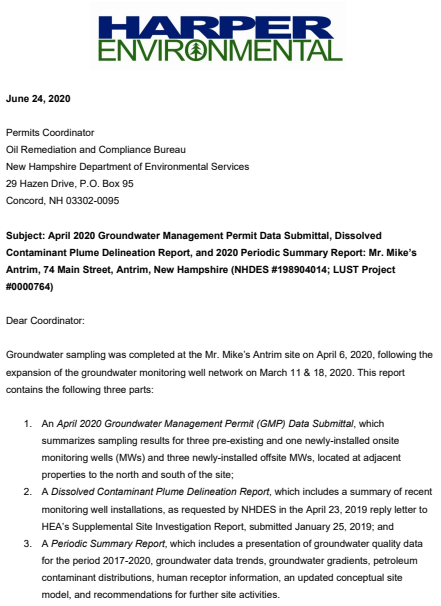
Figure: Concentration Levels, ML : Dec 2020

Appendix - Contd.



HARPER ENVIRONMENTAL

June 24, 2020

Permits Coordinator
Oil Remediation and Compliance Bureau
New Hampshire Department of Environmental Services
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Subject: April 2020 Groundwater Management Permit Data Submittal, Dissolved Contaminant Plume Delineation Report, and 2020 Periodic Summary Report: Mr. Mike's Antrim, 74 Main Street, Antrim, New Hampshire (NHDES #198904014; LUST Project #0000764)

Dear Coordinator:

Groundwater sampling was completed at the Mr. Mike's Antrim site on April 6, 2020, following the expansion of the groundwater monitoring well network on March 11 & 18, 2020. This report contains the following three parts:

1. An *April 2020 Groundwater Management Permit (GMP) Data Submittal*, which summarizes sampling results for three pre-existing and one newly-installed onsite monitoring wells (MWs) and three newly-installed offsite MWs, located at adjacent properties to the north and south of the site;
2. A *Dissolved Contaminant Plume Delineation Report*, which includes a summary of recent monitoring well installations, as requested by NHDES in the April 23, 2019 reply letter to HEA's Supplemental Site Investigation Report, submitted January 25, 2019; and
3. A *Periodic Summary Report*, which includes a presentation of groundwater quality data for the period 2017-2020, groundwater data trends, groundwater gradients, petroleum contaminant distributions, human receptor information, an updated conceptual site model, and recommendations for further site activities.

Figure: Snapshot of the report submitted in June 2020, AN

This document presents a high-level overview. Details are available for review.

Thank you for your time!