

# Current Projects Using AgroRemed®/VaporRemed®

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DeeAar Holdings, LLC

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#### Contents



- ► Current, active projects
- Past projects
- Appendix Reports

#### Abandoned Gas Station in Mays Landing, NJ



#### Site location



Figure: Site: An Abandoned Gas Station

#### Background

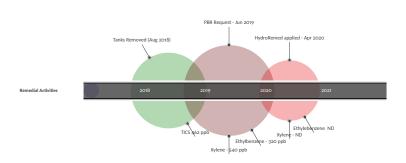
#### Tank 1 x 1000 gallon kerosene UST

- 2 x 3000 gallon leaded gasoline
- 2 x 8000 gallon UST
- 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

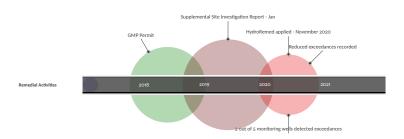
#### Background

- 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.





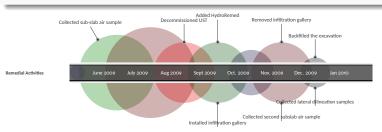
## Past Projects using AgroRemed/HydroRemed



 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.



## VaDEQ DEQ PC# 055160



#### Site location



Figure: Site Location

## VaDEQ DEQ PC# 055160 (2)

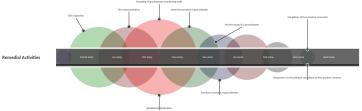


"... InSitu Bioremediation was requested by the DEQ, as a cost effective method of remediation at this site. A product known as AgroRemed \* was chosen, because of its ability to address all phases of petroleum contamination using a single application." Marvin S, Project Geologist. Link to the report.

# VaDEQ DEQ PC# 055160 (3)



"... 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 continued use is recommended. " Project Geologist



Dinkar Capti | Pigramodiation of Abandanad Car Stations

#### 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.



► - 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 L1851896-01			
		LABID				
		COLLECTION DATE:	12/17/2018			
		SAMPLE DEPTH				
		SAMPLE MATRICE	WATER			
		NJ LPL (POL)				
ANALYTE	CAS	(494)	Conc	9	RL	MDG
MICROEKTRACTABLES BY GC						
VOLATILE ORGANICS BY GCIMS						
Betzene	71-69-2	1	ND:		0.6	0.16
Diverse	109-89-1	1	ND ND		0.75	0.2
Ethybeszene	100-41-4	2	ND		0.6	0.1
Mediyi set buyi ether	1636-06-6	1	ND		1	0.1
Xylene (Tittal)	1330-20-7	2	ND		1	0.30
cis-1,2-Dichloroethene	154-59-2	1	0.26	- 3	0.6	0.1
Acetone	67-66-1	10	2.5	- 3	- 5	1.5
Carbon-disuffide	75-15-0	1	ND		- 6	0.3
7 Butterone	70-93-2	2	ND		- 5	1.9
VOLATILE ORGANICS BY GCIMS-TIC						
fotal TIC Compounds					-	-
BASEINEUTRAL EXTRACTABLES BY		OROUGHLAB				
Acenaghthene	10-32-9	10	ND		- 2	0.4
Saphthalene	91-20-3	2	12	-,	- 2	0.4
Est2-ethytheryt(phthalate	117-91-7	1	2.4	3	- 2	1.5
Lowne	86-73-7	1	ND		- 2	
Phenasthrene	85-01-6		ND		- 2	0.83
Dibersolutan	132-60-9		ND		- 2	
2-Methylraphthalene	81-57-6		ND		- 2	0.4
Cartazole	86-74-6		ND		2	0.6
BASEINEUTRAL EXTRACTABLES BY	GEMS-WESTE	OROUGH LAB-TIC				
Total TIC Compounds			162	3	0	0
BASEINEUTRAL EXTRACTABLES BY						
Berzojijurdracene	96-95-3	0.1	0.1		0.1	0.00
Berzojújpyrene Berzojújfyrene	\$0-32-6	0.1	0.09	- 3	0.1	
	205-99-2	0.2	0.19		0.1	
Bet20jt/fluoranthene	207-09-9	0.3	0.09	J	0.1	0.00
Disersola Francisco de	\$2-70-2		0.03	-	0.1	0.00

Eight Walkup Drive, Westborough, MA 01581-0159 509-999-6220 (Fax) 509-999-9032 900-624-6220 www.alphalab.com

Figure: Concentration Levels, ML : Dec 2018

## Appendix - Contd.



				SAMPLE ID:	
				LABID	
				COLLECTION DAT	
				SAMPLE DEPTH	
				SAMPLE MATRIX	
		NJ-GWIA	N3-INTGW	NJ-GWI-PL	
ANALYTE	CAS	(1991)	(les)	(491)	
VOLATILE ORGANICS BY GCIMS	75-63-2	1			
idudenzene	100-61-6	700		-	
Sylenes, Total	1330-20-7	1000		2	
Controlle Controlle	6744-1	9000		10	
sograpybeszene	99-82-8	700		1	
Cyclohexane	110-62-7			1	
Methyl cyclohexane	109-97-2			1	
lasi VOCs					
VOLATILE ORGANICS BY GOMS-TIC					
Jrknown Benzene				- 1	
Indiane Markithologia	000096-11-7 000091-00-3	-		1	
Linkrown Aromatic		-			
Lirknown Become					
Inspens, Propyl-	00000346-1			1	
Unknown Benzene				1	
Siland, Trimettyl-	001066-80-6			1	
Urknown Benzene				1	
Total TIC Compounds		500*			
BASENEUTRAL EXTRACTABLES BY G					
Naphthalene	65-20-2	300		2	
Big2-ettytheo/lighthalase BASENEUTRAL EXTRACTABLES BY G	117-65-7	2		2	
Inknown Alkane	CMS-WESTECK	OUGH LAB	IIC.	1	
Inkrown Alkane				1	
Arknown Alkane				- 1	
Jrknown Alkane				1	
Unknown Become				- 1	
Urknown Aldehyde				1	
Unknown Benzene				1	
Aldol Condensates Linknown Bengene		_		1	
Urknown Mercene					
Irimon Akar				-	
anknown				1	
Arknown				1	
Unknown Benzene				1	
Jrknown Alkane				1	
Anknown				1	
ndane	000096-11-7				
Jrknown Berzene		_		- 1	
Anknown Benzene Stuttenzene	000000-41-4	-		1 2	
Irikroun Alkane				1	
Linknown Phenol	_	_		-	
Linknown Alkane		_		-	

Figure: Concentration Levels, ML: Jun 2019

## Appendix - Contd.



		SAMPLE ID:	MW-1			
		LAR ID:	L2039435-65 8GR2020 WATER			
		COLLECTION DATE:				
		SAMPLE DEPTH:				
		SAMPLE MATRIX				
		N2-GWBA				
MALYTE	CAS	(Fig4)	Conc	Q RL	MDL	
CLATILE ORGANICS BY GOMS						
2-Dibromo-9-chioropropane 4-Dioxane	96-12-8	0.02	ND:		0.35	
	123-91-1	6.4	ND	250	64	
2-Dibromoethane	109-93-4	0.03	ND:	2	0.19	
tethylene chloride 1-Dichlorettiane	75-09-2 75-35-2	- 2	NO NO	25	0.68	
MATERIAL STATE OF THE STATE OF	0746-3	70	ND	0.75	0.22	
arbon setractrioride	56-23-5	1	ND	0.5	0.13	
2-Dichloropropane	79-97-5	1	ND	1		
bromochioromethane	124-49-1	1	ND	0.6	0.15	
1,2-frichloroethane	79-00-6	3	ND:	0.75	0.14	
machioroethene Paramontoria	127-18-6	-8-	100	0.5	0.18	
CONTRACTOR CONTRACTOR	75-69-4	900	MS	2.5	0.16	
	117-06-2	2	ND.	0.5	0.13	
1,1-Trichiproethane	71-65-6	30	ND:	0.5	0.16	
romodichioromethane	75-27-4	1	NO.	0.5	0.19	
ane-1,3-Exchloropropene	10061-02-6		MD.	0.6	0.16	
o-1.3 Cichiospropene 3 Dichiospropene, Total	10061-01-6		NO NO	2.0	0.14	
.9-Dichloropropene, 1008	962-75-6 75-75-7	1	MD	0.5	0.14	
1.2.5 Samurbinosethana	79.36.5	-	MO	0.5	617	
1,2,2 TROBUSE CONTRACTOR OF THE PARTY OF THE	1242.2	-	MO	0.6	0.17	
Sunne	109-99-2	600	162	9.79	0.2	
hyberzene	100-61-6	700	162	0.5	0.17	
historietane	7447-3		100	2.5	0.2	
	7543-9	17	MD			
nyt charide hisroethane	75-01-1	1	MD	0.2	0.07	
L-Dichlospethene	75-05-4	1	ND ND	0.5	0.17	
1-Dichlopethene	156-60-6	- 1	160	0.75	0.17	
ichiarostiene	79-01-6	1	NO NO	0.5	0.18	
3.Firthornhammene	16-60-1		ND MD	2.5	0.18	
2-Dichlosbergene 3-Dichlosbergene						
6-EK/Norobergene	156-56-7	75	ND MO	2.5	0.19	
ethyl set bubyl ether In-Xvlene	1838-08-4 179601-03-1	70	ND ND	1	0.17	
-Xylana	95-47-6	1000	ND ND	- 1	0.39	
ylenes, Total S-13 Octobromene	1330-20-7	2000				
2-Dichocement, Total	583-59-0		140	0.5	0.16	
Syme	150-12-6	200	ND	- 1	0.39	
Chlorodifusionethane	75-71-8	5000	ND:	\$	0.24	
cessne	67-60-1	6000	6.1	- 6	1.5	
arbon disulfide	75-05-0	700	ND:		0.2	
Buranone	79-92-2	200	MD	- 6	1.9	
Methyl-2-pentanone Heightigh	10910-1	- 0	NO NO	-	0.42	
and the same same	78-97-5		ND:	2.5	0.15	
opropyberzene	99-82-8	700	ND	0.5	0.19	
2,3-Trichloroberzene	97-61-6		ND	2.5	0.23	
2,6-Trichlandbetzene	120-92-1	9	ND:	2.5	0.22	
etry Acesse voteware	79-20-9 110-92-7	7000	NO NO	2 20	0.23	

Figure: Concentration Levels, ML: Dec 2020

## Appendix - Contd.





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

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

