

Overview of PDB Implementation and Utilization

at the Cape Canaveral Air Force Station, Florida

Presented by:



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Presented to:

New Jersey Department of Environmental Protection

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Presentation Agenda

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Section I

Background



PDB Implementation and Utilization at CCAFS

Section

I

Background

- PDB samplers first evaluation in a pilot study
 - 2 inactive space launch complexes
 - SLC 11
 - SLC 12
 - Detailed site characterization including vertical delineation completed during the RFI and CMS stages of the RCRA process
- Long Term Monitoring (LTM)
 - Conducted since 1998 at the 2 sites
 - Monitoring for chlorinated solvent VOCs in groundwater

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Section II

Sampling Program

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*PDB Implementation and Utilization at CCAFS*Section
II*Sampling Program*

- October 2000, pilot study
 - Compare the analytical results between PDB samplers and low-flow purge sampling techniques
 - PDB sampling at 11 monitoring wells at the 2 adjacent launch complexes
 - One pre-filled PDB sampler per each study well
 - Dedicated stainless steel harness custom designed for each well to ensure PDB sampler installation in middle of well screened interval
 - PDB samplers installed for 6 week equilibrium period, installed on 09/12/2000, retrieved on 10/26-27/2000, prior to low-flow sampling
 - Samples collected by both methods analyzed for VOC by SW846 8260

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SYSTEMS, INC.*PDB Implementation and Utilization at CCAFS*Section
II*Sampling Program – PDB Installation***BEM**
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PDB Implementation and Utilization at CCAFS

Section
II

Sampling Program – PDB Retrieval



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PDB Implementation and Utilization at CCAFS

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Sampling Program – Sample Collection



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Section III

Results




PDB Implementation and Utilization at CCAFS

Section
III

Results

- PDB sampler results correspond with the results of low-flow sampling
- Estimated cost saving of 40% using PDB samplers instead of low-flow purging at CCAFS VOC LTM sites
- Based on pilot study results, 45th Space Wing Installation Restoration Program obtained concurrence from Florida DEP and USEPA to use PDB samplers for LTM at CCAFS sites with groundwater VOC contamination only



<i>PDB Implementation and Utilization at CCAFS</i>											Section III
<i>Results – Analytical Results Comparison</i>											
Sample ID:	L11-09	DBL11-09	L11-19	DBL11-19	L11-20	DBL11-20	L11-21	DBL11-21	L11-22	DBL11-22	
Analyte	Date:	25-Oct-00	25-Oct-00	25-Oct-00	25-Oct-00	27-Oct-00	27-Oct-00	27-Oct-00	27-Oct-00	26-Oct-00	26-Oct-00
Volatile Organic Compounds											
1,1-Dichloroethene		2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene		3.4	4.6	2 U	2 U	138	126	4.3	2.6	1.5 J	1.8 J
trans-1,2-Dichloroethene		2 U	1.3 J	2 U	2 U	14.2	12.5	2 U	2 U	2 U	2 U
Trichloroethylene		2 U	2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U
Vinyl chloride		8.5	8.6	1 U	1 U	65.3	51.2	10.3	4.3	2.6	3.1
Sample ID:	L12-01	DBL12-01	L12-02	DBL12-02	L12-06	DBL12-06	L12-09	DBL12-09	L12-09I	DBL12-09I	
Analyte	Date:	26-Oct-00	26-Oct-00	26-Oct-00	26-Oct-00	27-Oct-00	27-Oct-00	26-Oct-00	26-Oct-00	26-Oct-00	26-Oct-00
Volatile Organic Compounds											
1,1-Dichloroethene		2 U	2 U	2 U	4 U	2 U	2 U	2 U	2 U	2 U	2 U
cis-1,2-Dichloroethene		2 U	2 U	53.7	101	15	67.9	2 U	2 U	2.8	2 U
trans-1,2-Dichloroethene		2 U	2 U	2	4.2	2 U	3.7	2 U	2 U	2 U	2 U
Vinyl chloride		1 U	1 U	18.5	44	1 U	3.1	1 U	1 U	3.4	1 U
Notes:											
Non-detected values presented in blue											
Detected values presented in red											
Analyses were performed by SW846 8260											
DB - Sample IDs with the DB prefix were collected using PDB samplers											
J - Result is detected below the reporting limit and/or is an estimated concentration											
U - Non-detected, value indicates MDL (method detection limit)											

<i>PDB Implementation and Utilization at CCAFS</i>			Section III
<i>Results – Cost Comparison</i>			
Task	Diffusion Sampling	Low-Flow LTM	
Setup	Install sampler and harness Installation cost will include sampler, harness and labor - 0.5 manhour (2-man team, 15 minutes.)	None	
Sampling	Retrieve sampler, open and pour into VOC vial Sampling cost will include labor - 1 manhour (2-man team, 0.5 hour)	Purge well, collect samples with peristaltic pump, manage IDW Sampling cost will include peristaltic pump, battery, tubing, meter(s) for pH, conductance, temperature and turbidity, IDW management and labor - 3 manhours (2-man team, 1.5 hours)	
Analytical	VOCs	VOCs	

Section IV

Conclusion



PDB Implementation and Utilization at CCAFS

Section
IV

Conclusion

- PDB samplers currently being used at 5 sites at CCAFS
 - Sampling results used to evaluate and adjust the LTM sampling and analysis programs
 - 2 of the 5 sites were granted No Further Action after 2 consecutive PDB sampling events without any VOC detections above applicable screening criteria (regulatory action levels) and a final round of confirmatory sampling with PDB samplers and low-flow sampling techniques
- The use of PDB samplers is now evaluated with the addition of each new VOC LTM site at CCAFS



Thank You!

