

**WORK PLAN ADDENDUM
INDOOR AIR AND SOIL GAS SAMPLING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK**

INTRODUCTION

This Work Plan Addendum supplements the August 2010 Work Plan Addendum and has been prepared to address indoor air and soil gas sampling activities planned for November 2010 and February 2011 at Site 1 – Former Drum Marshalling Area at Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York. Soil vapor testing conducted in January 2008, October 2008, and January 2009 identified the presence of elevated concentrations of Volatile Organic Compounds (VOCs) existing along the eastern boundary of Site 1 and in the nearby residential neighborhood. Additional soil vapor testing and indoor air monitoring has been ongoing in residential homes and the neighborhood since January 2009.

In December 2009, construction of a Soil Vapor Extraction (SVE) Containment System along the eastern boundary of Navy property was completed and operation of the system started in January 2010. The SVE Containment System continues to operate.

Soil gas sampling and Sub-Slab Depressurization (SSD) system stack sampling were conducted in August 2010 to evaluate the effectiveness of the SVE Containment System on reducing the concentrations of VOCs in onsite and offsite soil gas monitoring points. Preliminary evaluation of the data has been positive and has shown up to 99% reduction of VOCs in the offsite soil gas.

The indoor air and soil gas sampling activities that will begin on November 8, 2010 will include indoor air, sub-slab soil vapor, and outdoor air sampling in the neighborhood located adjacent to Site 1. Air samples will be analyzed for VOCs via EPA TO-15 method. With concurrence from the New York State Department of Health (NYSDOH) and the New York State Department of Environmental Conservation (NYSDEC), the TO-15 list was previously modified to analyze for site specific compounds associated with Site 1. The fieldwork outlined in this Work Plan Addendum is being conducted in accordance with NYSDOH Guidance for Evaluating Soil Vapor Intrusion in the State of New York (NYSDOH 2006) and previous work plans and work plan addendums (Tetra Tech, 2008 and 2010).

SAMPLING APPROACH

Each indoor/outdoor air and sub-slab soil vapor sample will be collected over a 24 hour time period and analyzed by Air Toxics, an Environmental Laboratory Approval Program (ELAP) certified laboratory (USEPA, 1999). Corresponding sample nomenclatures are presented in Table 1. Outdoor air samples will be collected simultaneously during the indoor air and sub-slab soil vapor sampling to evaluate the potential influence of outdoor air on indoor air quality. Outdoor air samples will be collected, as necessary, to provide representative air samples from an upwind location. It is anticipated that one outdoor air sample may be collected for every two homes targeted for indoor air sampling. Site specific conditions will be evaluated at the time of sampling and the outdoor air samples will be collected accordingly.

Soil gas sampling will also be conducted in November 2010 and February 2011 to further evaluate the effectiveness of the SVE Containment System. Soil gas samples will be collected over a 30-minute time period. Field activities will include the sampling of 11 Soil Vapor Pressure Monitor (SVPM) points as presented on Table 2. Soil gas and indoor air sampling will occur simultaneously and will be analyzed for VOCs via EPA TO-15 method.

Field and sampling procedures will be conducted as outlined in the 2008 work plan and subsequent work plan addendums.

TABLE 1
SOIL GAS AND INDOOR AIR SAMPLING - NOVEMBER 2010 AND FEBRUARY 2011
SAMPLE NOMENCLATURE AND ANALYTICAL METHOD
NWIRP BETHPAGE, NEW YORK

Location	Sample ID	SAMPLE TYPE	VOCs-TO15A ⁽¹⁾
HOME 1	BPS1-AR001-INDL-4	LIVING SPACE	X
	BPS1-AR001-SSB-2	SUBSLAB	X
HOME 2	BPS1-AR002-INDL-5	LIVING SPACE	X
	BPS1-AR002-INDB-5	BASEMENT	X
	BPS1-AR002-SSB-2	SUBSLAB	X
HOME 3	BPS1-AR003-INDL-6	LIVING SPACE	X
	BPS1-AR003-INDB-6	BASEMENT	X
	BPS1-AR003-SSB4	SUBSLAB	X
HOME 4	BPS1-AR004-INDB-5	BASEMENT	X
	BPS1-AR004-SSB-2	SUBSLAB	X
HOME 6	BPS1-AR006-INDB-5	BASEMENT	X
	BPS1-AR006-SSB-2	SUBSLAB	X
HOME 7	BPS1-AR007-INDB-4	BASEMENT	X
	BPS1-AR007-SSB-2	SUBSLAB	X
HOME 9	BPS1-AR009-INDB-2	BASEMENT	X
	BPS1-AR009-SSB-2	SUBSLAB	X
HOME 10	BPS1-AR010-INDB-4	BASEMENT	X
	BPS1-AR010-SSB-3	SUBSLAB	X
HOME 12	BPS1-AR012-INDB-4	BASEMENT	X
	BPS1-AR012-SSB-2	SUBSLAB	X
HOME 13	BPS1-AR013-INDB-5	BASEMENT	X
	BPS1-AR013-SSB-2	SUBSLAB	X
HOME 14	BPS1-AR014-INDB-3	BASEMENT	X
	BPS1-AR014-SSB-2	SUBSLAB	X
HOME 15	BPS1-AR015-INDB-2	BASEMENT	X
	BPS1-AR015-SSB-2	SUBSLAB	X
HOME 18	BPS1-AR018-INDB-3	BASEMENT	X
	BPS1-AR018-SSB-2	SUBSLAB	X

Notes:

Quality Assurance samples such as duplicates and field blanks will be collected in accordance with the sampling SOP. One outdoor air sample will be collected each day.

VOCs: Volatile Organic Compounds. (Site specific list: 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethen, trans-1,2-dichloroethene, trichloroethene, tetrachloroethene, vinyl chloride).

⁽¹⁾ : 21-Day results from Navy-approved laboratory via method TO-15

Table 2
SVPM SAMPLING - NOVEMBER 2010 AND FEBRUARY 2011
SAMPLE NOMENCLATURE AND ANALYTICAL METHOD
NWIRP BETHPAGE, NEW YORK

Location	Sample ID	VOCs-TO15A ⁽¹⁾
SVPM 2002	BPS1-SVPM2002S-XXXXXX	X
	BPS1-SVPM2002I-XXXXXX	X
	BPS1-SVPM2002D-XXXXXX	X
SVPM 2003	BPS1-SVPM2003I-XXXXXX	X
	BPS1-SVPM2003D-XXXXXX	X
SVPM 2004	BPS1-SVPM2004I-XXXXXX	X
	BPS1-SVPM2004D-XXXXXX	X
SVPM 2007	BPS1-SVPM2007I-XXXXXX	X
	BPS1-SVPM2007D-XXXXXX	X
SVPM 11S	BPS1-SVPM11S-XXXXXX	X
SVPM 12S	BPS1-SVPM12S-XXXXXX	X

Notes:

Quality Assurance samples such as duplicates and field blanks will be collected in accordance with the sampling SOP.

One outdoor air sample will be collected each day.

VOCs: Volatile Organic Compounds. (Site specific list: 1,1-dichloroethane, 1,1-dichloroethene, 1,1,1-trichloroethane, 1,2-dichloroethane, cis-1,2-dichloroethen, trans-1,2-dichloroethene, trichloroethene, tetrachloroethene, vinyl chloride).

XXXXXX: Sample Date. For example, BPSI-SVPM2004D-110910, would be collected on November 9, 2010.

SVPM-11 and SVPM-12 will not be sampled. After further evaluation, it has been determined that both points cannot be repaired and will be abandoned.

⁽¹⁾ : 21-Day results from Navy-approved laboratory via method TO-15

SVPM: Soil Vapor Pressure Monitor