



TETRA TECH

NOR-00800

August 10, 2010

Mr. Stephen Scharf
New York Department of Environmental Conservation
Division of Environmental Remediation
Bureau of Remedial Action A
625 Broadway, 11th Floor
Albany, New York 12233-7015

Reference: CLEAN Contract No. N62470-08-D-1001
Contract Task Order WE06

Subject: Soil Gas Sampling Work Plan Addendum
Site 1 – Former Drum Marshalling Area
NWIRP Bethpage, New York

Dear Mr. Scharf:

On behalf of the Navy, please find the enclosed copy of the "Soil Gas Sampling Work Plan Addendum" for Site 1 – Former Drum Marshalling Area at NWIRP Bethpage that presents the planned field activities and sampling procedures for the gas sampling scheduled for the week of August 23, 2010.

This testing is being conducted to evaluate the effectiveness of the Site 1 – Soil Vapor Extraction Containment System at reducing the concentration of VOCs in the residential neighborhood adjacent to Site 1.

If you have any questions please contact Ms. Lora Fly, NAVFAC Mid-LANT, at (757) 341-2012.

Sincerely,

Dave Brayack
Project Manager

NOR- 00800
Mr. Stephen Scharf
New York Department of Environmental Conservation
August 10, 2010 - Page 2

Enclosure: Soil Gas Sampling Work Plan Addendum

Distribution:

NYSDOH, Steve Karpinski
Nassau County DOH, Joseph DeFranco
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NAVFAC, Lora Fly
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Administrative Record

**SOIL GAS SAMPLING
WORK PLAN ADDENDUM**

NWIRP BETHPAGE
Bethpage, New York



**Naval Facilities Engineering Command
Mid-Atlantic**

**Contract No. N62470-08-D-1001
Contract Task Order WE06**

AUGUST 2010

WORK PLAN ADDENDUM
SOIL GAS SAMPLING
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

1.0 INTRODUCTION

This Work Plan has been prepared for the soil gas sampling activities at the Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage, Long Island, New York. Site 1 was identified as having been impacted by historic releases of chlorinated solvents and was remediated via an air sparging/soil vapor extraction (AS/SVE) system between 1998 and 2002. The treatment and remedial goals were based on protection of groundwater. Soil vapor testing conducted in January 2008, October 2008, and January 2009 indicated elevated concentrations of VOCs existing along the eastern boundary of Site 1 and in the nearby residential neighborhood. See Table 1 for a summary of soil gas results from these sampling events.

From January through April 2009, soil vapor intrusion sampling was conducted in the residential neighborhood located east and adjacent to Site 1. A total of 18 residential homes were sampled during investigation activities through April 2009. As an interim measure, air purification units (APUs) were placed in homes to treat vapors that may have entered the homes. Based on the sample results, eight homes did not require further sampling/remediation. Based on sub-slab soil vapor and indoor air sampling results, Sub-slab Depressurization (SSD) systems were installed in six residential homes in May 2009. Residential homes were sampled and monitored from June 2009 to March 2010.

In December 2009, construction of an SVE Containment System along the eastern boundary of Navy property was completed. System start up activities began in December 2009. The SVE Containment System is currently in operation at Site 1.

The purpose of the soil gas sampling outlined in this work plan is to evaluate the effectiveness of the SVE Containment System on reducing the concentrations of VOCs observed in the 2008 and 2009 soil gas sampling events and the SSD system stack sampling conducted in March 2010. Field activities will include the sampling of 13 existing soil vapor monitoring (SVPM) points and 5 SSD system stacks. Soil gas and SSD system stack samples will be analyzed for volatile organic compounds (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.

2.0 FIELD ACTIVITIES

The soil gas sampling locations are presented on Figure 1. The specific activities for the soil gas sampling are as follows:

1. Collect an initial round of vacuum readings from the 13 SVPMs
2. Construct ¼ inch sampling points within the offsite SVPMs
3. Conduct another round of vacuum readings from the 13 SVPMs
4. Collect air samples from the five SSD system stacks
5. Turn the SVE Containment System off
6. Evaluate the integrity of the onsite monitoring point SVPM 11
7. Collect soil gas samples from the 13 SVPMs
8. Restart the SVE Containment System

Sample nomenclature and analysis for the soil gas and SSD system stack sampling are presented in Table 2. The field sampling team will maintain a Soil Gas Sample Log Sheet, as presented in Attachment A, for each sample collected. Other pertinent information regarding sample identification or sample collection will be recorded in the field logbook.

SUMMA[®] canisters will be utilized for collecting all soil gas and SSD stack samples. The soil gas and SSD stack samples will be obtained over a 30 minute time period. SUMMA[®] canisters will be shipped to the laboratory via overnight carrier (e.g., Federal Express) for analysis.

Ambient air samples will also be collected simultaneously during the soil gas sampling. The SUMMA[®] canister will be positioned at an upwind location near the associated SVPM at a height of 4 ft above grade. The ambient air sample will be obtained over an eight-hour period. If more than one set of SVPMs is sampled in an eight-hour day, then the canister will be moved as sampling progresses to sequential SVPMs. Ambient air samples will be shipped to the laboratory as described above.

3.0 SAMPLING PROCEDURES

A vacuum reading and flow rate will be recorded from the SVE Containment System. An initial round of vacuum readings will also be collected from the 13 SVPMs with a pressure gauge to confirm the SVE Containment System is running.

To minimize potential surface air infiltration and purge time, the existing offsite SVPMs in the neighborhood will be converted to sampling/pressure monitoring points. These will be constructed a similar manner as the onsite SVPMs (see Attachment B for existing SVPM construction diagrams). Tubing (1/4 inch) with a 6-inch long stainless steel screen will be placed in the 1-inch PVC down to the screened interval in each SVPM. Annular space inside the PVC casing will be filled with filter sand and a bentonite seal (approximately 2-foot thick) will be installed approximately 2 or 3 feet above the screen. The bentonite will be allowed to hydrate a minimum of 24 hours prior to sampling. The remaining annular space will be filled with sand to the ground surface and the poly tubing will be fixed with barbed fittings to a PVC cap and sampling port.

SSD system stack samples will be collected prior to the SVE Containment System shutdown. The same procedures followed during the previous sampling of the SSD stacks will be used as presented in the Indoor Air Sampling work plan.

The SVE Containment System will be shutdown prior to soil gas sampling to avoid potential interferences and insure collection of representative soil gas. After SVE Containment System shutdown and prior to soil gas sampling, integrity testing will be conducted at BPS1-SVPM11 to determine whether it is a viable SVPM and soil gas sampling point. Historical vacuum readings collected from BPS1-SVPM11 during the SVE Pilot test (January 2009) have indicated no response or vacuum at this SVPM during SVE operation. Therefore, the integrity of this SVPM is in question.

Utilizing a vacuum pump and a vacuum gauge, a flow rate of approximately 0.2 liters per minute or more will be applied to BPS1-SVPM11S (for baseline) and BPS1-SVPM11. Vacuum readings will be collected over time (approximately every 2 to 5 minutes) at both SVPM's. If vacuum readings indicate an increasing vacuum at BPS1-SVPM11 over time, and/or a significantly higher vacuum at BPS1-SVPM11 when compared to the readings at BPS1-SVPM11S, then the SVPM will be determined unusable/unreliable and no soil gas sample will be collected at BPS1-SVPM11.

The soil gas sampling procedures for each SVPM will be as follows:

1. Connect tee and valve assembly to the sampling port of the SVPM.

2. Connect a vacuum pump to the tee and valve assembly. Purge 2500 to 3000 mL volumes of air from the soil gas point and sampling line using the vacuum pump at a rate of approximately 100 to 200 milliliter per minute (mL/min).
3. Record on the Soil Gas Sample Log Sheet and/or field notebook the flow controller number with the appropriate SUMMA® canister number. Isolate vacuum pump and collect soil gas sample with SUMMA® canister.

After all soil gas samples are collected, the SVE Containment System will be re-started.

TABLE 2
SOIL GAS SAMPLING - AUGUST 2010
SAMPLE NOMENCLATURE AND ANALYTICAL METHOD
NWIRP BETHPAGE, NEW YORK

Location	Sample ID	Matrix	VOCs-TO15A ⁽¹⁾
SVPM 2002	BPS1-SVPM2002S-XXXXXX	Air	1
	BPS1-SVPM2002I-XXXXXX	Air	1
	BPS1-SVPM2002D-XXXXXX	Air	1
SVPM 2003	BPS1-SVPM2003I-XXXXXX	Air	1
	BPS1-SVPM2003D-XXXXXX	Air	1
SVPM 2004	BPS1-SVPM2004I-XXXXXX	Air	1
	BPS1-SVPM2004D-XXXXXX	Air	1
SVPM 2007	BPS1-SVPM2007I-XXXXXX	Air	1
	BPS1-SVPM2007D-XXXXXX	Air	1
SVPM 11	BPS1-SG2008-XXXXXX	Air	1
SVPM 11S	BPS1-SG2008-XXXXXX	Air	1
SVPM 12	BPS1-SG2008-XXXXXX	Air	1
SVPM 12S	BPS1-SG2008-XXXXXX	Air	1
AR002	BPS1-AR002-ST05	Air	1
AR003	BPS1-AR003-ST05	Air	1
AR004	BPS1-AR004-ST05	Air	1
AR013	BPS1-AR013-ST05	Air	1
AR014	BPS1-AR014-ST05	Air	1
Duplicate (SVPM)	BPS1-DUP01	Air	1
Duplicate (SVPM)	BPS1-DUP02	Air	1
Duplicate (SSD Stack)	BPS1-DUP03	Air	1
Field Blank	BPS1-FB2001-XXXXXX	Air	1
Field Blank	BPS1-FB2002-XXXXXX	Air	1
Field Blank	BPS1-FB2003-XXXXXX	Air	1

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

XXXXXX: Sample date. For example, BPS1-SVPM2004D-082610, would be collected on August 26, 2010.





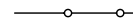

1 : 21-Day results from Navy-approved laboratory via method TO-15.

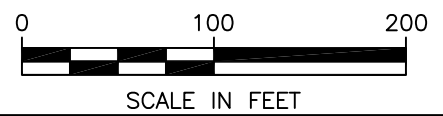
SSD: Sub-slab Depressurization system

SVPM: Soil Vapor Pressure Monitoring



LEGEND

-  SOIL VAPOR PRESSURE MONITORING POINT (SVPM)
-  PILOT TEST SVE CONTAINMENT WELL
-  APPROXIMATE SVE CONTAINMENT WELL LOCATION
-  PROPERTY LINE
-  FENCE LINE
-  SITE BOUNDARY



SOIL VAPOR PRESSURE
MONITORING POINT LOCATION MAP
SITE 1
NWIRP BETHPAGE
BETHPAGE, NEW YORK

FILE 112G02019GM01	SCALE AS NOTED
FIGURE NUMBER FIGURE 1	REV DATE 0 08/04/10

ATTACHMENT A
SOIL GAS SAMPLING LOG



Project Site Name: NWIRP Bethpage
Project No.: 112G02019

Sample ID No.: _____
Sample Location: Home # _____
Sampled By: _____

SAMPLING DATA:						
Date:	Wind speed	Wind Direction	Ambient temperature	Barometric Pressure	Relative Humidity	Other
Time:	(Visual)	(estimated)	(°F)	(in.)	(%)	
Method:						

Summa Canister #	
Filter Type/Flow	

Duplicate (if collected) _____

Start Time Vacuum		in Hg
End Time Vacuum		in Hg

	in Hg
	in Hg

He check	Start	Stop	Reading

Purge Data	Start	Stop	Notes:

Readings:
Liters/minute
_____ @ _____
_____ @ _____
_____ @ _____

Notes:

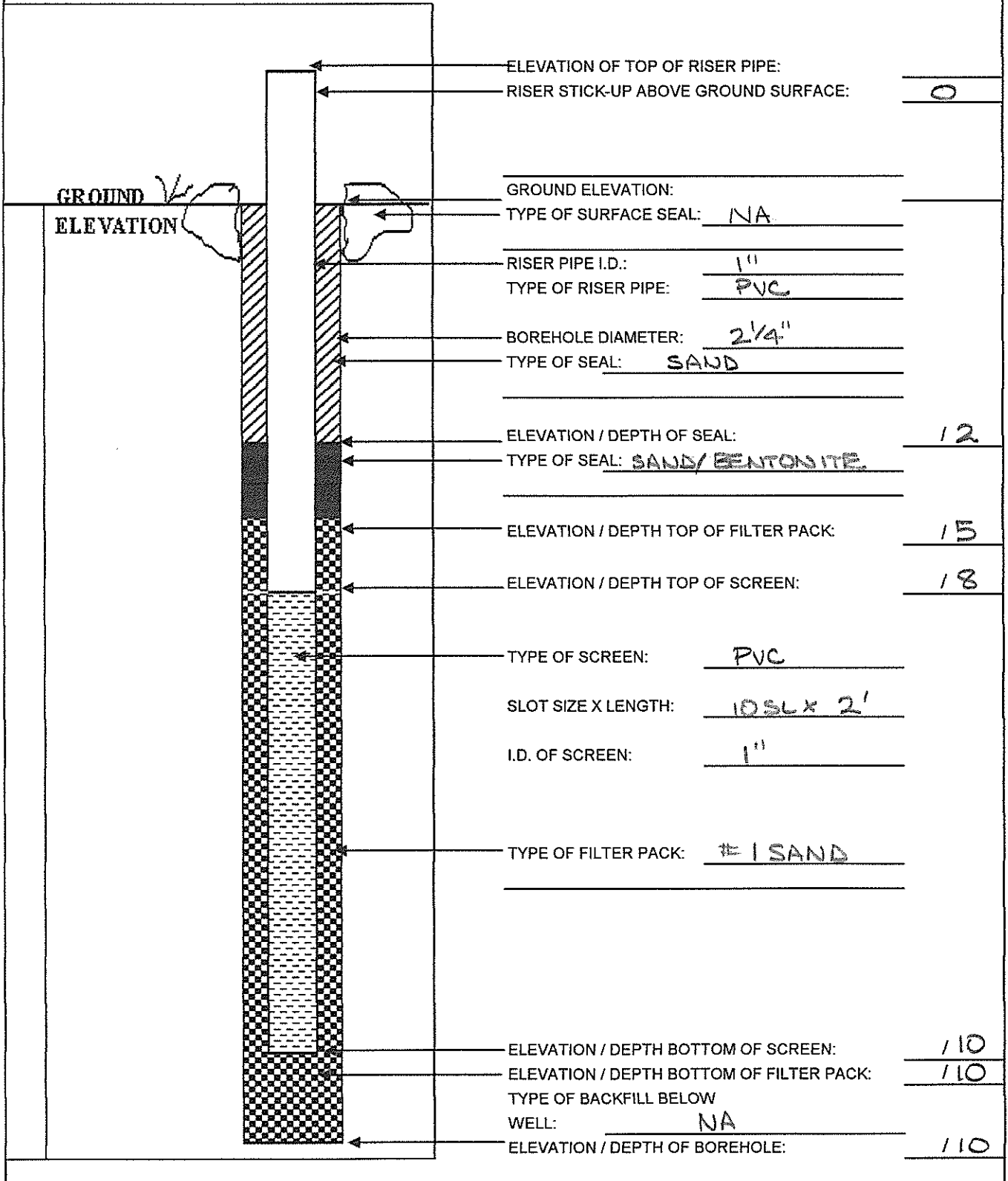
ATTACHMENT B
SVPM CONSTRUCTION DIAGRAMS



Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

BORING NO.: 2002S

PROJECT:	<u>NWIRP Bethpage II</u>	DRILLING Co.:	<u>Zebra</u>	BORING No.:	<u>BPSI-PZ 2002S</u>
PROJECT No.:	<u>112G01687</u>	DRILLER:	<u>MORANIS</u>	DATE COMPLETED:	<u>1/7/09</u>
SITE:	<u>Site 1</u>	DRILLING METHOD:	<u>DPT</u>	NORTHING:	<u> </u>
GEOLOGIST:	<u>Conti</u>	DEV. METHOD:	<u> </u>	EASTING:	<u> </u>

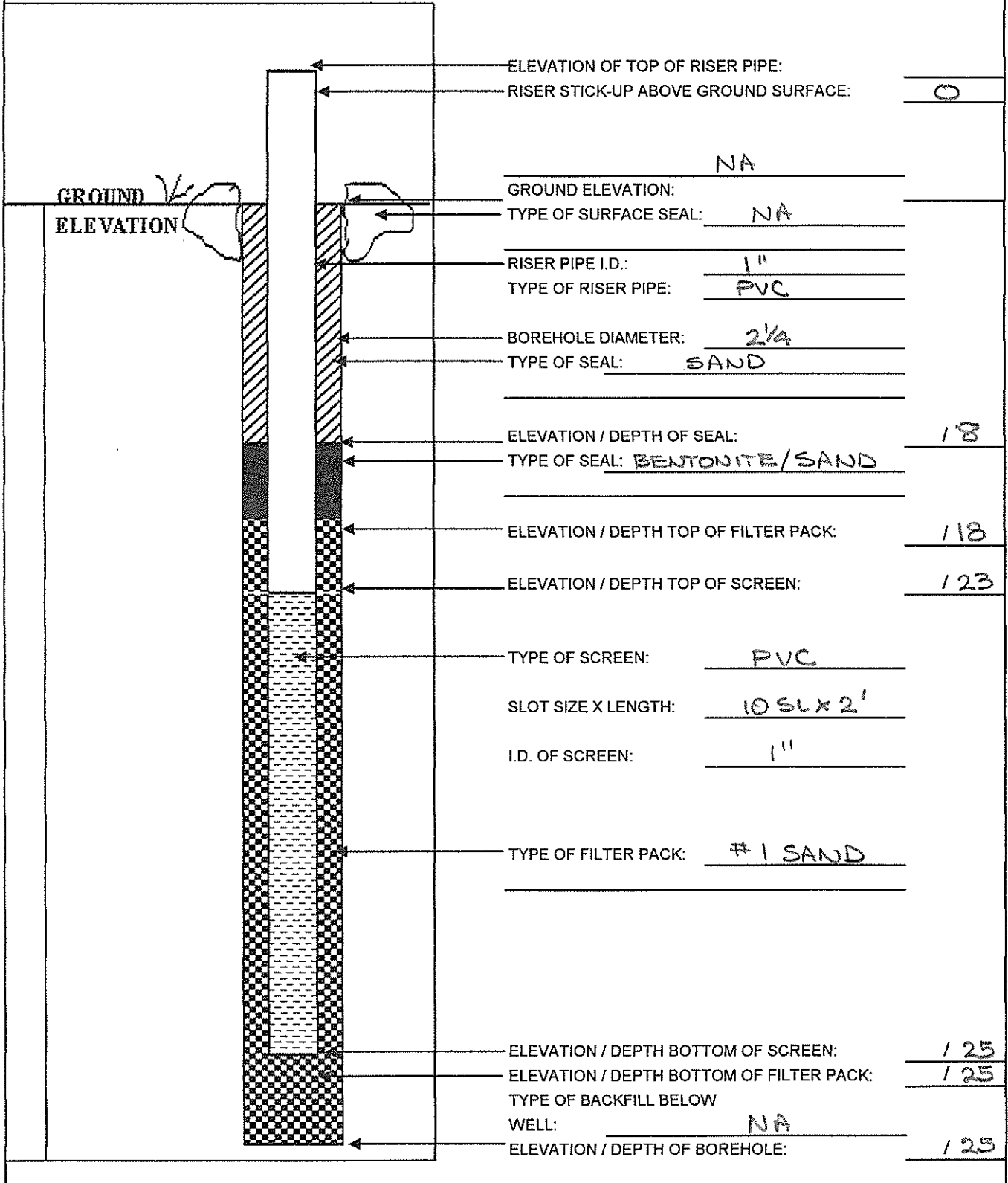




Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

BORING NO.: 2002 I

PROJECT:	<u>NWIRP Bethpage II</u>	DRILLING Co.:	<u>Zebra</u>	BORING No.:	<u>BFSI-PZ 2002 I</u>
PROJECT No.:	<u>112G01687</u>	DRILLER:	<u>MORANTIS</u>	DATE COMPLETED:	<u>1/7/09</u>
SITE:	<u>Site 1</u>	DRILLING METHOD:	<u>DPT</u>	NORTHING:	_____
GEOLOGIST:	<u>Conti</u>	DEV. METHOD:	_____	EASTING:	_____

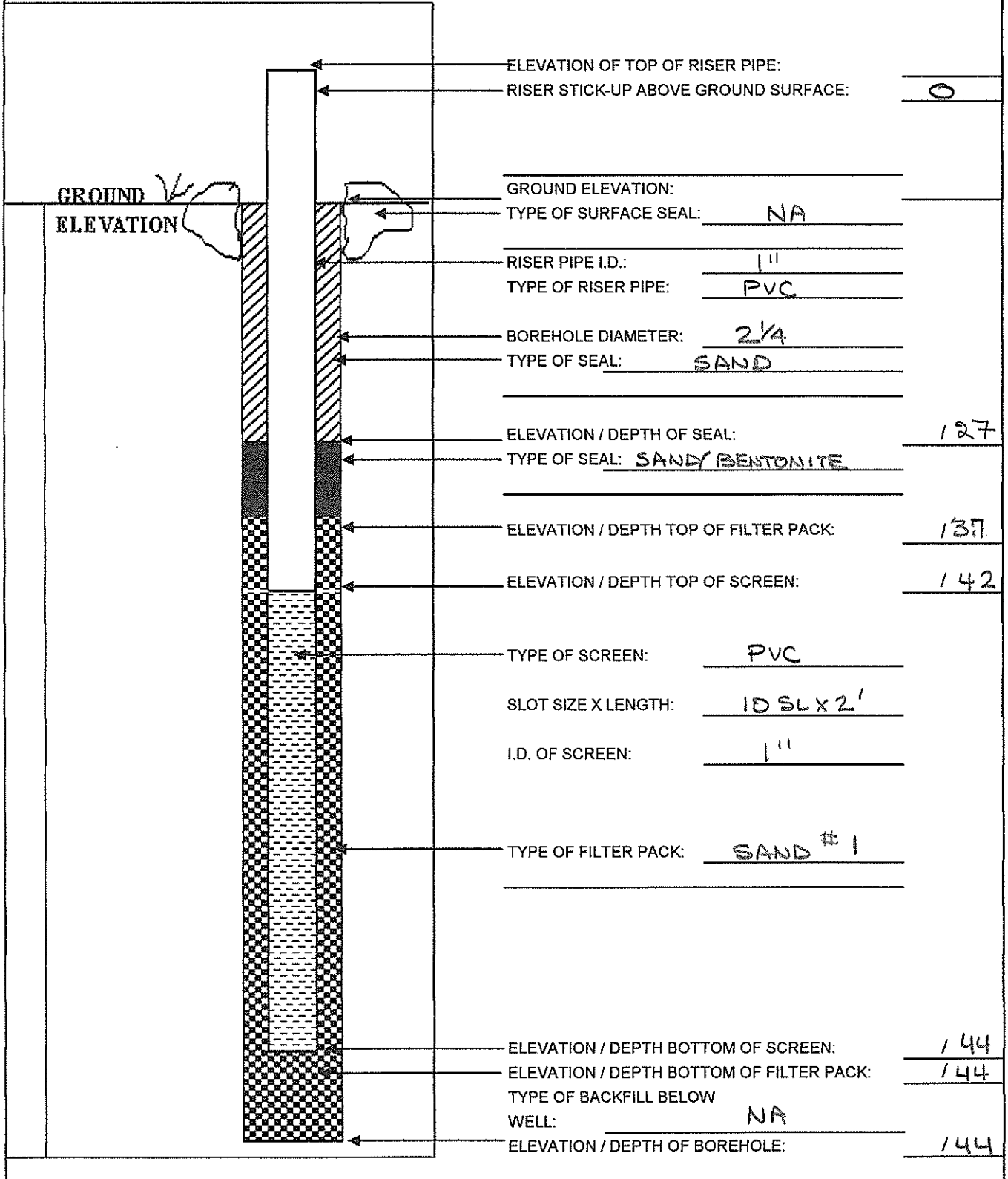




Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

BORING NO.: 2002 D

PROJECT:	<u>NWIRP Bethpage II</u>	DRILLING Co.:	<u>Zebra</u>	BORING No.:	<u>BFS1-PZ2002 D</u>
PROJECT No.:	<u>112G01687</u>	DRILLER:	<u>MORRIS</u>	DATE COMPLETED:	<u>1/7/09</u>
SITE:	<u>Site 1</u>	DRILLING METHOD:	<u>DPT</u>	NORTHING:	
GEOLOGIST:	<u>Conti</u>	DEV. METHOD:		EASTING:	

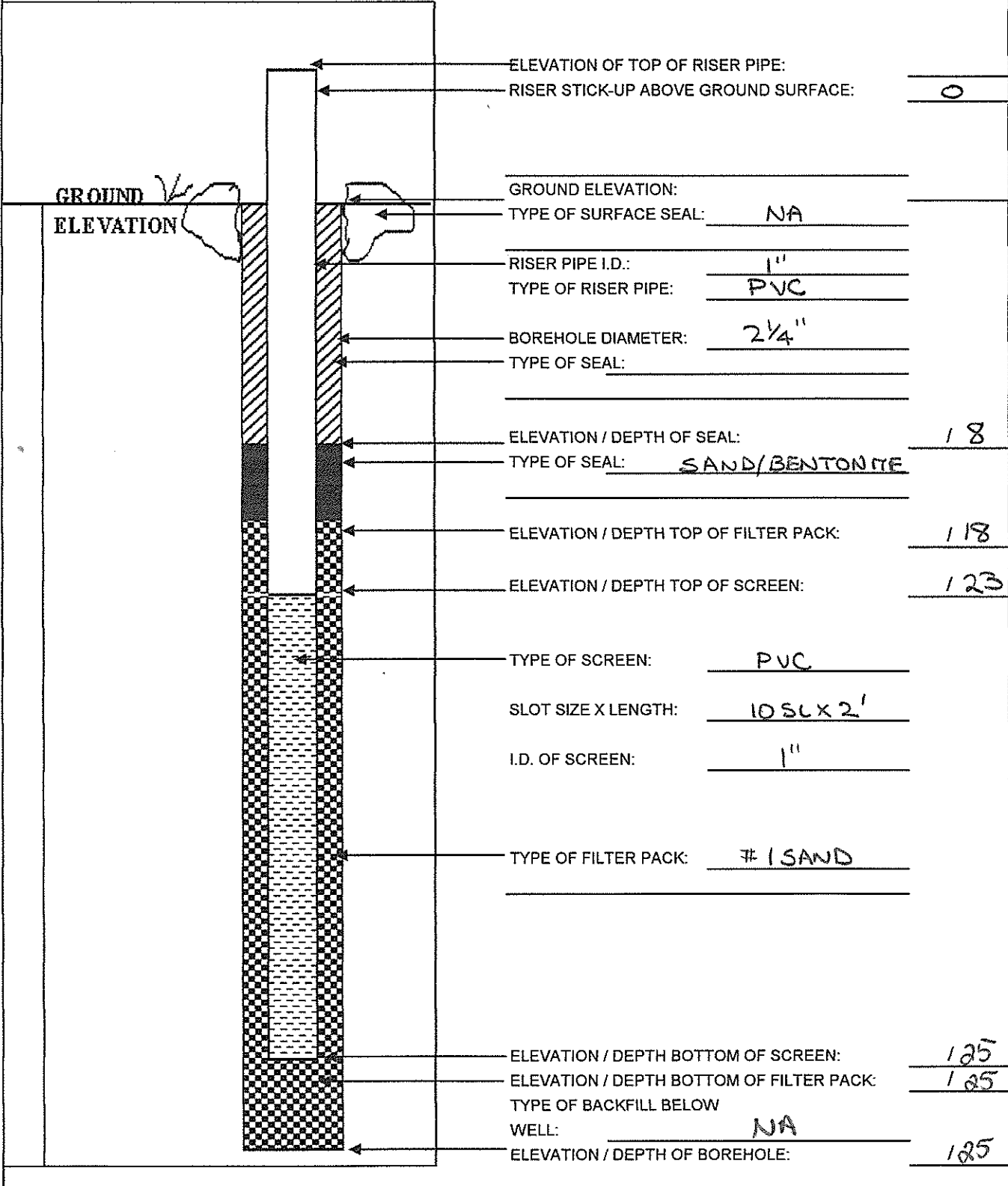




Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

BORING NO.: 2003I

PROJECT:	<u>NWIRP Bethpage II</u>	DRILLING Co.:	<u>Zebra</u>	BORING No.:	<u>BPSI-P2 2003I</u>
PROJECT No.:	<u>112G01687</u>	DRILLER:	<u>MORAITIS</u>	DATE COMPLETED:	<u>1/6/09</u>
SITE:	<u>Site 1</u>	DRILLING METHOD:	<u>DPT</u>	NORTHING:	
GEOLOGIST:	<u>Conti</u>	DEV. METHOD:	<u>—</u>	EASTING:	



ELEVATION OF TOP OF RISER PIPE: _____
 RISER STICK-UP ABOVE GROUND SURFACE: 0

GROUND ELEVATION: _____
 TYPE OF SURFACE SEAL: NA

RISER PIPE I.D.: 1"
 TYPE OF RISER PIPE: PVC

BOREHOLE DIAMETER: 2 1/4"
 TYPE OF SEAL: _____

ELEVATION / DEPTH OF SEAL: 18
 TYPE OF SEAL: SAND/BENTONITE

ELEVATION / DEPTH TOP OF FILTER PACK: 118

ELEVATION / DEPTH TOP OF SCREEN: 123

TYPE OF SCREEN: PVC

SLOT SIZE X LENGTH: 10 SL X 2'

I.D. OF SCREEN: 1"

TYPE OF FILTER PACK: #1 SAND

ELEVATION / DEPTH BOTTOM OF SCREEN: 125

ELEVATION / DEPTH BOTTOM OF FILTER PACK: 125

TYPE OF BACKFILL BELOW WELL: NA

ELEVATION / DEPTH OF BOREHOLE: 125

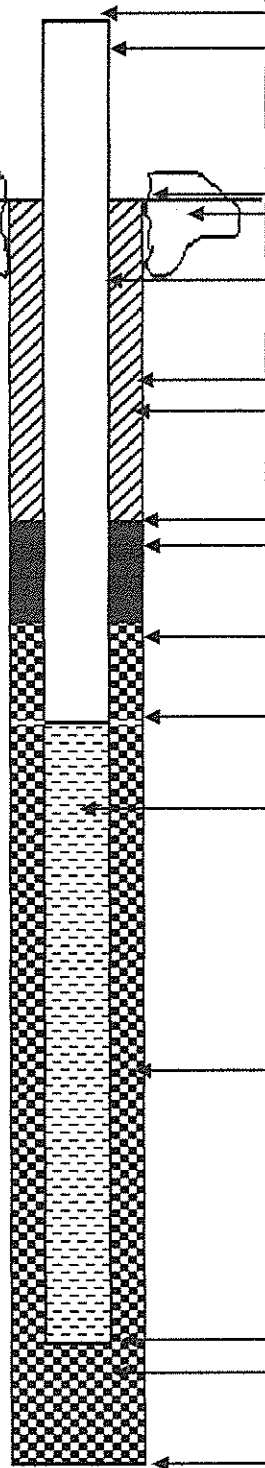


Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

BORING NO.: 2003D

PROJECT:	<u>NWIRP Bethpage II</u>	DRILLING Co.:	<u>Zebra</u>	BORING No.:	<u>BPSI-PZ 2003D</u>
PROJECT No.:	<u>112G01687</u>	DRILLER:	<u>MORAITIS</u>	DATE COMPLETED:	<u>1/6/09</u>
SITE:	<u>Site 1</u>	DRILLING METHOD:	<u>DPT</u>	NORTHING:	
GEOLOGIST:	<u>Conti</u>	DEV. METHOD:	<u>---</u>	EASTING:	

GROUND
ELEVATION



ELEVATION OF TOP OF RISER PIPE:	
RISER STICK-UP ABOVE GROUND SURFACE:	<u>0</u>
GROUND ELEVATION:	
TYPE OF SURFACE SEAL:	<u>NA</u>
RISER PIPE I.D.:	<u>1"</u>
TYPE OF RISER PIPE:	<u>PVC</u>
BOREHOLE DIAMETER:	<u>2 1/4"</u>
TYPE OF SEAL:	<u>SAND</u>
ELEVATION / DEPTH OF SEAL:	<u>128</u>
TYPE OF SEAL:	<u>SAND/BENTONITE</u>
ELEVATION / DEPTH TOP OF FILTER PACK:	<u>138</u>
ELEVATION / DEPTH TOP OF SCREEN:	<u>143</u>
TYPE OF SCREEN:	<u>PVC</u>
SLOT SIZE X LENGTH:	<u>10SL X 2'</u>
I.D. OF SCREEN:	<u>1"</u>
TYPE OF FILTER PACK:	<u>SAND # 1</u>
ELEVATION / DEPTH BOTTOM OF SCREEN:	<u>145</u>
ELEVATION / DEPTH BOTTOM OF FILTER PACK:	<u>145</u>
TYPE OF BACKFILL BELOW WELL:	<u>NA</u>
ELEVATION / DEPTH OF BOREHOLE:	<u>145</u>

PROJECT NWIRP – BETHPAGE SITE 1

DRILLING METHOD HSA

JOB NO. 106-3570

WELL NO. SVPM-2004I

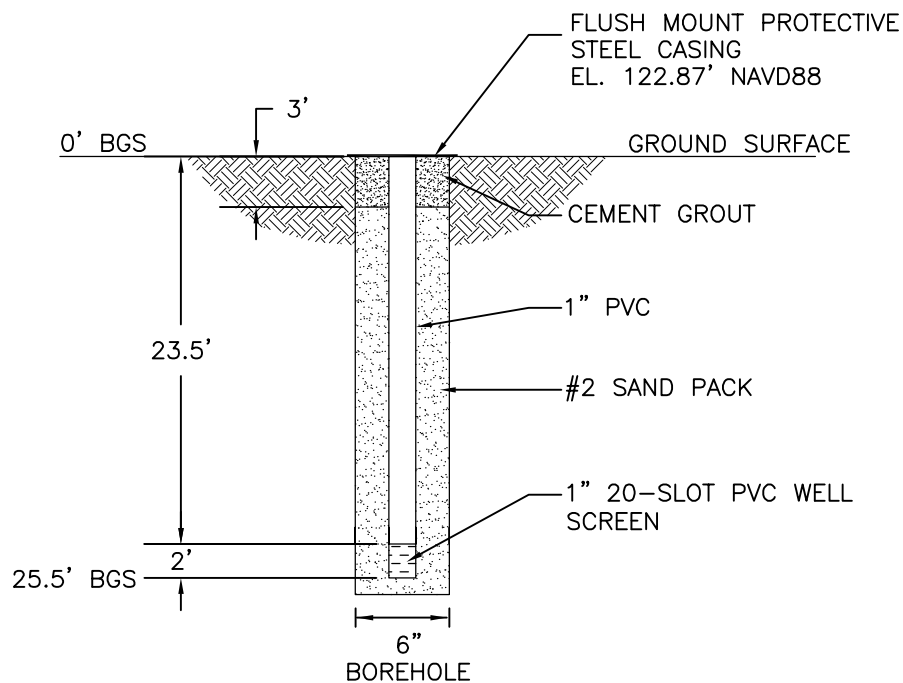
DRILLING SUBCONTRACTOR DELTA WELL AND PUMP CO.

DATE OF WELL INSTALLATION 10-12-09

DRILLER J. GUECI

DATE OF WELL DEVELOPMENT N/A

GEOLOGIST C. JOBLON/TTECI



NAVAL FACILITIES ENGINEERING COMMAND
MID-ATLANTIC

NWIRP BETHPAGE SITE 1
SVE CONTAINMENT SYSTEM

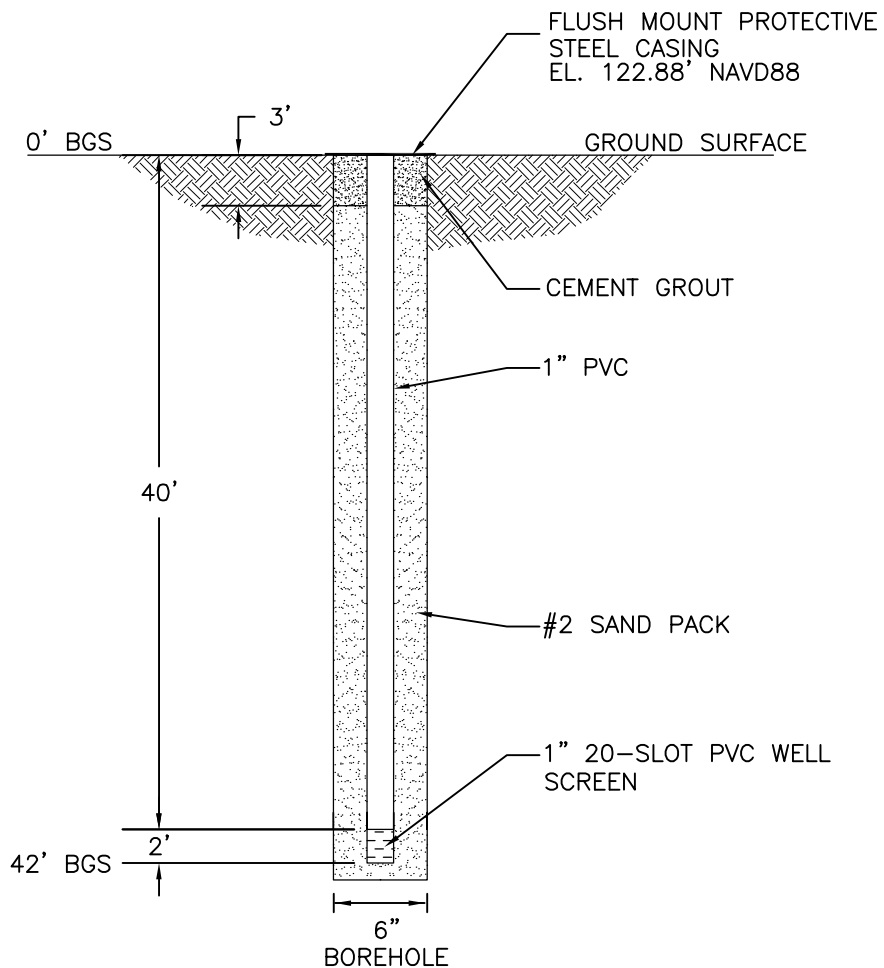
INTERMEDIATE SOIL VAPOR MONITORING POINT
CONSTRUCTION DIAGRAM – SVPM-2004I



TETRA TECH EC, INC.

PROJECT NWIRP – BETHPAGE SITE 1
 JOB NO. 106-3570
 DRILLING SUBCONTRACTOR DELTA WELL AND PUMP CO.
 DRILLER J. GUECI

DRILLING METHOD HSA
 WELL NO. SVPM-2004D
 DATE OF WELL INSTALLATION 10-12-09
 DATE OF WELL DEVELOPMENT N/A
 GEOLOGIST C. JOBLON/TTECI



NAVAL FACILITIES ENGINEERING COMMAND
 MID-ATLANTIC

NWIRP BETHPAGE SITE 1
 SVE CONTAINMENT SYSTEM

DEEP SOIL VAPOR MONITORING POINT
 CONSTRUCTION DIAGRAM – SVPM-2004D



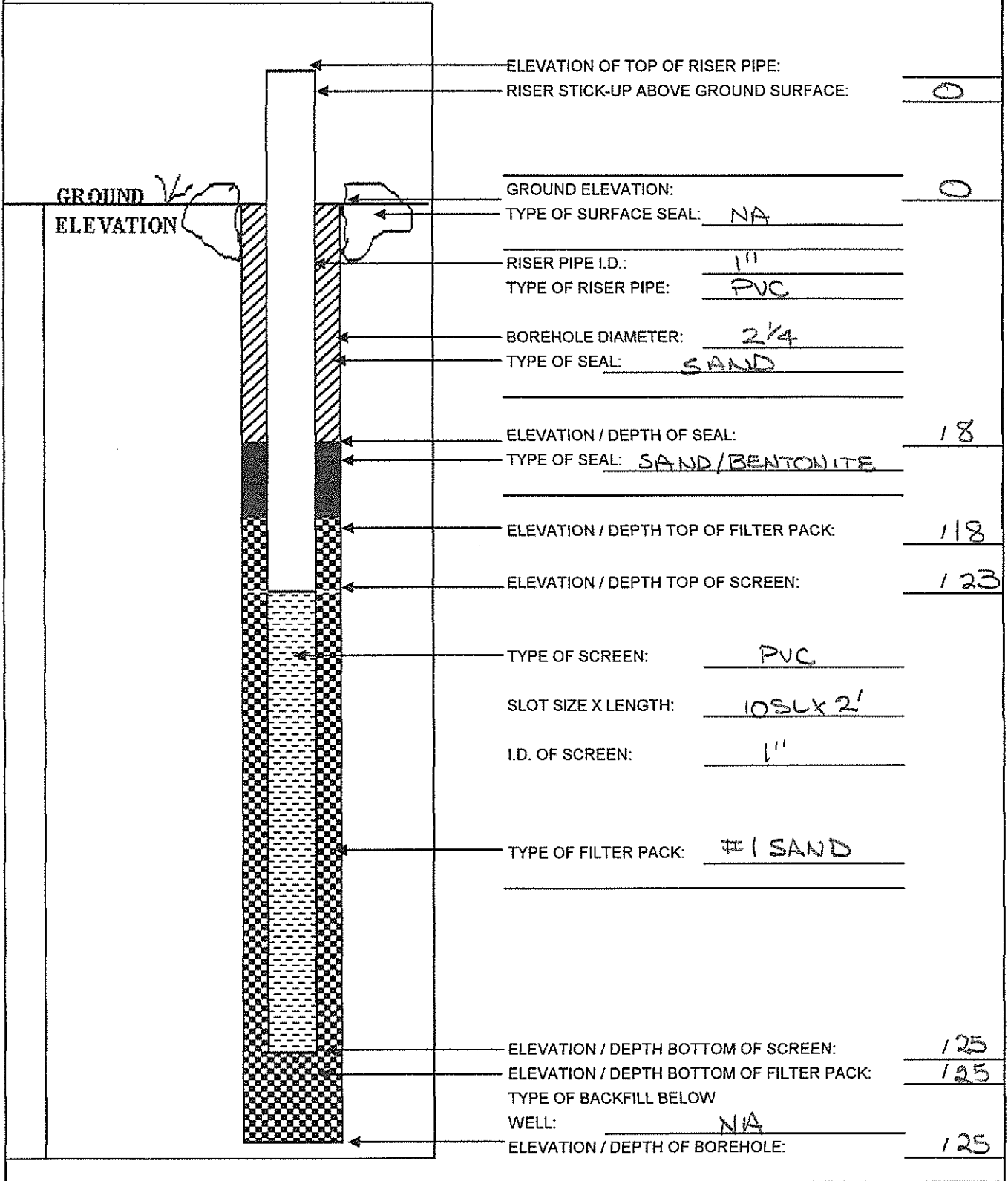
TETRA TECH EC, INC.



Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

BORING NO.: 2007I

PROJECT:	<u>NWIRP Bethpage II</u>	DRILLING Co.:	<u>Zebra</u>	BORING No.:	<u>BFSI-PZ 2007I</u>
PROJECT No.:	<u>112G01687</u>	DRILLER:	<u>MORANTIS</u>	DATE COMPLETED:	<u>1/7/09</u>
SITE:	<u>Site 1</u>	DRILLING METHOD:	<u>DPT</u>	NORTHING:	
GEOLOGIST:	<u>Conti</u>	DEV. METHOD:		EASTING:	

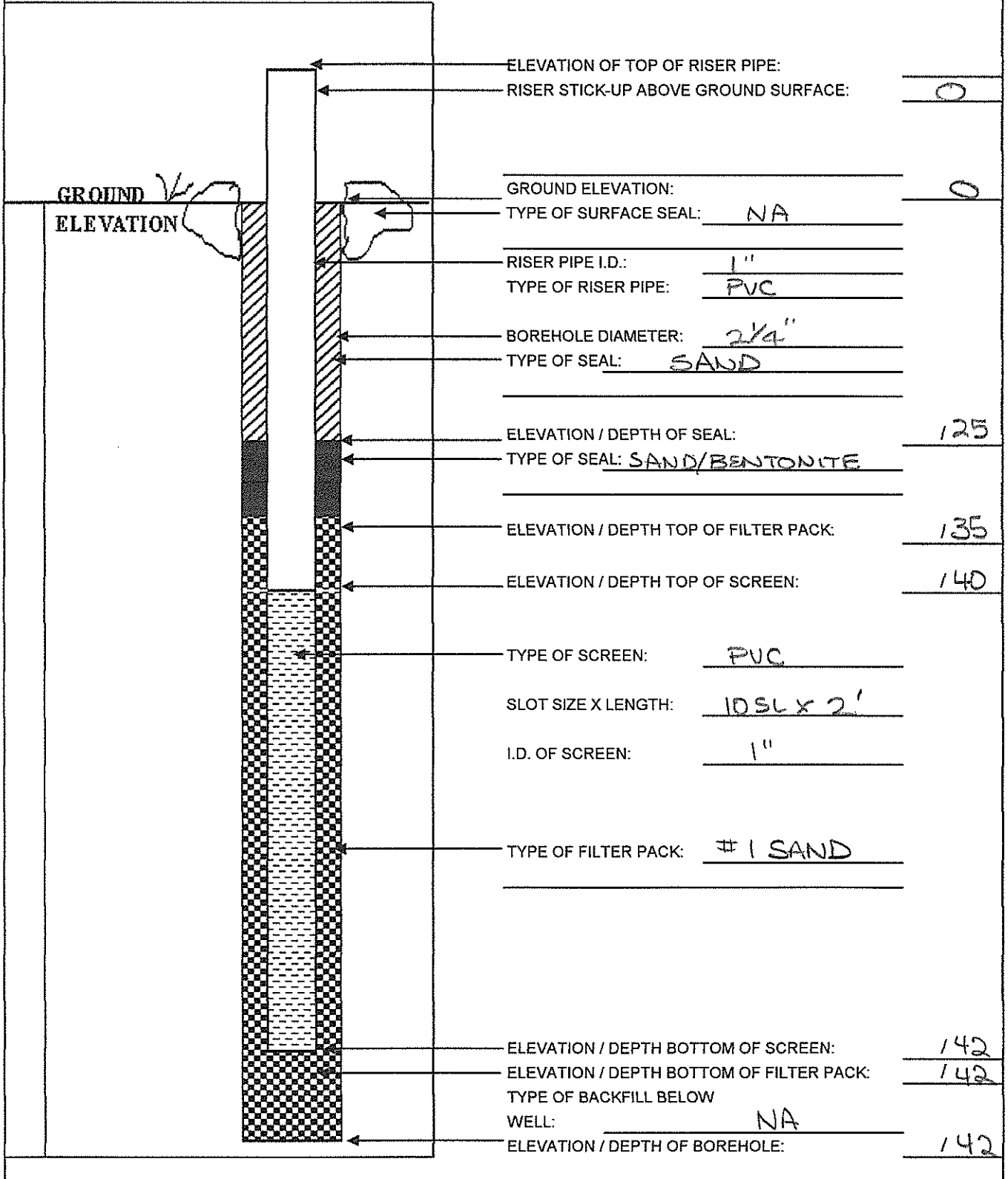




Tetra Tech NUS, Inc. **TEMPORARY WELL SHEET**

BORING NO.: 2007 D

PROJECT:	<u>NWIRP Bethpage II</u>	DRILLING Co.:	<u>Zebra</u>	BORING No.:	<u>BPSI-PZ 2007 D</u>
PROJECT No.:	<u>112G01687</u>	DRILLER:	<u>MORATE</u>	DATE COMPLETED:	<u>1/7/09</u>
SITE:	<u>Site 1</u>	DRILLING METHOD:	<u>DPT</u>	NORTHING:	
GEOLOGIST:	<u>Conti</u>	DEV. METHOD:		EASTING:	





OVERBURDEN MONITORING WELL SHEET STICK-UP

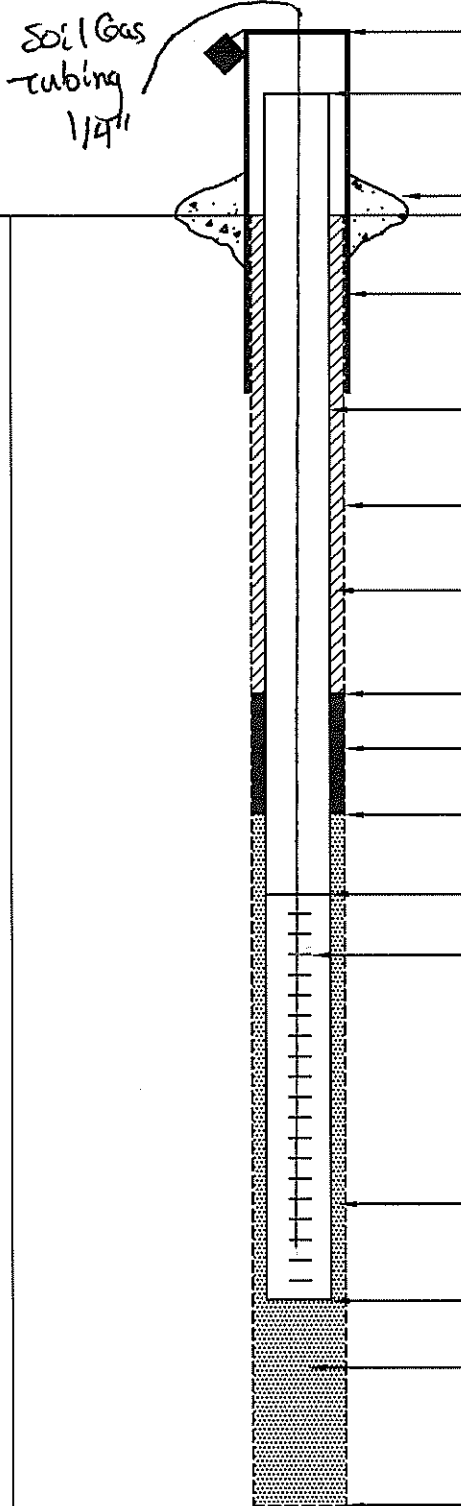
WELL NO.: S1PM-115

Tetra Tech NUS, Inc.

Retrofitting for Permanent Soil Gas Monitoring Point

PROJECT <u>NWIRP Bethpage</u>	LOCATION <u>Site 1</u>	DRILLER <u>Luke Reiss</u>
PROJECT NO. <u>CTO-002</u>	BORING _____	DRILLING METHOD <u>Geoprobe</u>
DATE BEGUN <u>1-22-08</u>	DATE COMPLETED <u>1-22-08</u>	DEVELOPMENT METHOD _____
FIELD GEOLOGIST _____	DATUM _____	
GROUND ELEVATION _____		

ACAD:FORM_MWSU.dwg 07/20/99 INL



ELEVATION/HEIGHT OF TOP OF SURFACE CASING:	<u>NA</u>
ELEVATION/HEIGHT OF TOP OF RISER PIPE:	<u>NA</u>
TYPE OF SURFACE SEAL:	<u>NA</u>
I.D. OF SURFACE CASING:	_____
TYPE OF SURFACE CASING:	_____
RISER PIPE I.D.:	_____
TYPE OF RISER PIPE:	_____
BOREHOLE DIAMETER:	_____
TYPE OF BACKFILL:	_____
ELEVATION/DEPTH TOP OF SEAL:	<u>10'</u>
TYPE OF SEAL:	<u>Bentonite</u>
DEPTH TOP OF SAND PACK:	<u>13'</u>
ELEVATION/DEPTH TOP OF SCREEN:	<u>20'</u>
TYPE OF SCREEN:	<u>Stainless Steel</u>
SLOT SIZE x LENGTH:	<u>NA</u>
I.D. OF SCREEN:	<u>NA</u>
TYPE OF SAND PACK:	<u>NA</u>
ELEVATION/DEPTH BOTTOM OF SCREEN:	<u>24'</u>
ELEVATION/DEPTH BOTTOM OF SAND PACK:	<u>25'</u>
BACKFILL MATERIAL BELOW SAND:	<u>NA</u>
ELEVATION/DEPTH OF HOLE:	<u>25'</u>



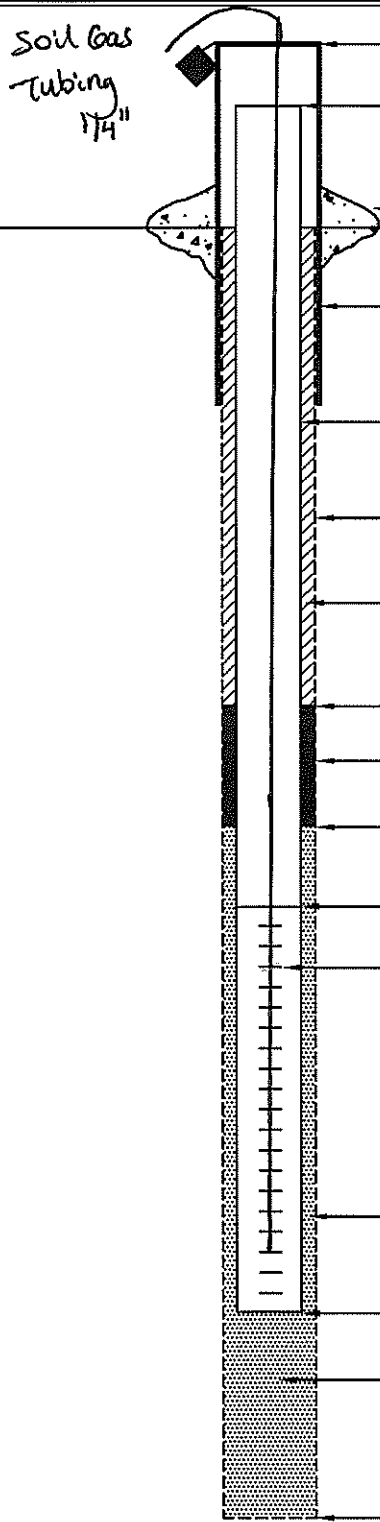
OVERBURDEN MONITORING WELL SHEET STICK-UP

WELL NO.: SIPM-11

Tetra Tech NUS, Inc. *Retrositting for Permanent Soil Gas Monitoring Point*

PROJECT <u>MWRP Bethpage</u>	LOCATION <u>Side 7</u>	DRILLER <u>Luke Kelss</u>
PROJECT NO. <u>C70-0020</u>	BORING _____	DRILLING METHOD <u>Geoprobe</u>
DATE BEGUN <u>1-22-08</u>	DATE COMPLETED <u>1-22-08</u>	DEVELOPMENT METHOD _____
FIELD GEOLOGIST _____	DATUM _____	
GROUND ELEVATION _____		

ACAD: FORM_MWSU.dwg 07/20/99 INL



ELEVATION/HEIGHT OF TOP OF SURFACE CASING:	<u>/ NA</u>
ELEVATION/HEIGHT OF TOP OF RISER PIPE:	<u>/ NA</u>
TYPE OF SURFACE SEAL:	<u>NA</u>
I.D. OF SURFACE CASING:	_____
TYPE OF SURFACE CASING:	_____
RISER PIPE I.D.:	_____
TYPE OF RISER PIPE:	_____
BOREHOLE DIAMETER:	_____
TYPE OF BACKFILL:	_____
ELEVATION/DEPTH TOP OF SEAL:	<u>135'</u>
TYPE OF SEAL:	<u>Bentonite</u>
DEPTH TOP OF SAND PACK:	<u>38'</u>
ELEVATION/DEPTH TOP OF SCREEN:	<u>145'</u>
TYPE OF SCREEN:	<u>Stainless Steel</u>
SLOT SIZE x LENGTH:	<u>NA</u>
I.D. OF SCREEN:	<u>NA</u>
TYPE OF SAND PACK:	<u>NA</u>
ELEVATION/DEPTH BOTTOM OF SCREEN:	<u>149'</u>
ELEVATION/DEPTH BOTTOM OF SAND PACK:	<u>150'</u>
BACKFILL MATERIAL BELOW SAND:	<u>NA</u>
ELEVATION/DEPTH OF HOLE:	<u>150'</u>



**OVERBURDEN
MONITORING WELL SHEET
STICK-UP**

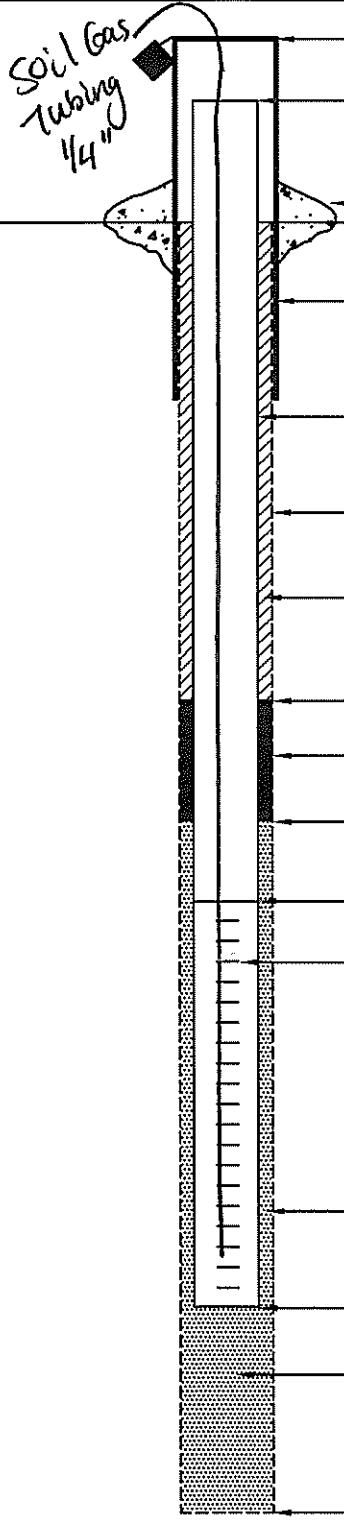
WELL NO.: SVPM-12S

Tetra Tech NUS, Inc.

Retrofitting for Permanent Soil Gas Monitoring Point

PROJECT <u>NWMP Bethpage</u>	LOCATION <u>Site 1</u>	DRILLER <u>Luke Belss</u>
PROJECT NO. <u>CTW-101 602</u>	BORING _____	DRILLING METHOD <u>Geoprobe</u>
DATE BEGUN <u>1-22-08</u>	DATE COMPLETED <u>1-22-08</u>	DEVELOPMENT METHOD _____
FIELD GEOLOGIST _____	DATUM _____	
GROUND ELEVATION _____		

ACAD:FORM_MWSU.dwg 07/20/99 INL



ELEVATION/HEIGHT OF TOP OF SURFACE CASING: NA

ELEVATION/HEIGHT OF TOP OF RISER PIPE: NA

TYPE OF SURFACE SEAL: NA

I.D. OF SURFACE CASING: _____
TYPE OF SURFACE CASING: _____

RISER PIPE I.D.: _____
TYPE OF RISER PIPE: _____

BOREHOLE DIAMETER: _____

TYPE OF BACKFILL: _____

ELEVATION/DEPTH TOP OF SEAL: 12'

TYPE OF SEAL: Bentonite

DEPTH TOP OF SAND PACK: 15'

ELEVATION/DEPTH TOP OF SCREEN: 21'

TYPE OF SCREEN: stainless steel

SLOT SIZE x LENGTH: NA

I.D. OF SCREEN: NA

TYPE OF SAND PACK: NA

ELEVATION/DEPTH BOTTOM OF SCREEN: 25'

ELEVATION/DEPTH BOTTOM OF SAND PACK: 27.1'
BACKFILL MATERIAL BELOW SAND: NA

ELEVATION/DEPTH OF HOLE: 27.1'



Tetra Tech NUS, Inc.

OVERBURDEN MONITORING WELL SHEET STICK-UP

WELL NO.: SVPM-12

Retrofitting for Permanent Soil Gas Monitoring Point

PROJECT <u>NMARP Bethpage</u>	LOCATION <u>Site 1</u>	DRILLER <u>Luke Reiss</u>
PROJECT NO. <u>070-002</u>	BORING _____	DRILLING METHOD <u>Geoprobe</u>
DATE BEGUN <u>1-22-08</u>	DATE COMPLETED <u>1-22-08</u>	DEVELOPMENT METHOD _____
FIELD GEOLOGIST _____	DATUM _____	
GROUND ELEVATION _____		

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Soil Gas Tubing 1/4"

ELEVATION/HEIGHT OF TOP OF SURFACE CASING:	<u>NA</u>
ELEVATION/HEIGHT OF TOP OF RISER PIPE:	<u>NA</u>
TYPE OF SURFACE SEAL:	<u>NA</u>
I.D. OF SURFACE CASING:	_____
TYPE OF SURFACE CASING:	_____
RISER PIPE I.D.:	_____
TYPE OF RISER PIPE:	_____
BOREHOLE DIAMETER:	_____
TYPE OF BACKFILL:	_____
ELEVATION/DEPTH TOP OF SEAL:	<u>137'</u>
TYPE OF SEAL:	<u>Bentonite</u>
DEPTH TOP OF SAND PACK:	<u>40'</u>
ELEVATION/DEPTH TOP OF SCREEN:	<u>146'</u>
TYPE OF SCREEN:	<u>Stainless steel</u>
SLOT SIZE x LENGTH:	<u>NA</u>
I.D. OF SCREEN:	<u>NA</u>
TYPE OF SAND PACK:	<u>NA</u>
ELEVATION/DEPTH BOTTOM OF SCREEN:	<u>150'</u>
ELEVATION/DEPTH BOTTOM OF SAND PACK:	<u>152.1'</u>
BACKFILL MATERIAL BELOW SAND:	<u>NA</u>
ELEVATION/DEPTH OF HOLE:	<u>152.1'</u>