



**TETRA TECH**

PHIL-24455

September 8, 2011

Project Number 02014

Base Realignment and Closure  
Program Management Office, Northeast  
4911 South Broad Street  
Philadelphia, Pennsylvania 19112-1303

Attn: Mr. Jeff Dale

Reference: Contract No. N62470-08-D-1001  
Contract Task Order (CTO) No. WE05

Subject: Site 1 Land Use Controls - 2011 Annual Inspection Report  
NAS JRB Willow Grove, Pennsylvania

Dear Mr. Dale:

Tetra Tech NUS, Inc. (Tetra Tech) is pleased to provide this Annual Letter Report documenting the status of compliance with the land use controls (LUCs) that have been placed by the Navy on Site 1 Groundwater at the NAS JRB Willow Grove, Pennsylvania. A description of the LUCs, along with a brief site description and the historical perspective, are contained in the *Remedial Design for Land Use Controls (RDLUC) for Site 1 Groundwater at the NAS JRB Willow Grove, Pennsylvania*, dated August 2010 (Tetra Tech, 2010).

The RDLUC describes the program agreed to by the Navy, the United States Environmental Protection Agency (EPA), and the Pennsylvania Department of Environmental Protection (PADEP) to ensure and document compliance with land use controls placed on Site 1 Groundwater (Operable Unit 3). Compliance monitoring includes on-site inspections of Site 1, interviews of property owner and workers, and completion of an Institutional Control Inspection Checklist. After completion of the "Physical On-Site Inspection" and "Interview Property Owner" sections of the checklist, the "Annual Certification" section is signed by the Navy.

The Institutional Control Inspection Checklist provides verification of compliance with the land-use controls that were previously identified in the Interim Record of Decision (ROD) for Site 1 Groundwater (Tetra Tech, 2008), or referenced in the Sampling and Analysis Plan for Groundwater Monitoring (Tetra Tech, 2011), and deed covenants. Site 1 Groundwater is addressed below, documenting the inspection findings, items of non-compliance, if any, and measures taken to correct the items of non-compliance during the year 2011. The signed Institutional Control Checklist is included as Attachment A.

The following land use controls have been placed on the designated land or areas while the Interim ROD is in force for Site 1 groundwater:



- No new groundwater well(s) may be installed without written consent from EPA and PADEP.
- Access to existing and any additional groundwater monitoring wells, including supply wells, will be limited by the Navy or subsequent land owner to the organization responsible for groundwater monitoring.

Figure 1 identifies the area for land use limitations.

#### On-Site Inspection

The annual institutional control on-site inspection of Site 1 was performed on August 15, 2011. The construction of the Army Reserve Training Center, which was in progress during the previous inspection, has been completed by the Air Force Reserve contractor, Clayco. Monitoring well cluster 01MW01, consisting of monitoring wells 01MW01SO, 01MW01S, and 01MW01I, has been abandoned to allow for the installation of a storm water retention basin. Monitoring wells 01MW01SO and 01MW01S have been replaced with two new wells, 01MW01SO-R and 01MW01S-R, located along Johnson Street near the corner with Griffiss Street (Figure 1). These two wells are included in the groundwater monitoring program required by the Interim ROD for Site 1 Groundwater. Both wells are fitted with locked caps. The completion reports for the two wells are included as Attachment B. Other than these two replacement monitoring wells, no evidence of new groundwater wells was encountered during the LUC inspection.

As noted in the previous inspection report, monitoring well 01MW02S was damaged during construction activities. The steel protective casing was observed to be dented at ground level, and the inner PVC casing was obstructed by soil or sand at a depth of approximately 3.5 feet below the top of casing. If the damage to the well is irreparable, the well should be properly abandoned and, if necessary, replaced.

As a result of the landscaping for the new building, monitoring wells 01MW02S, 01MW02I, 01MW03S, and 01MW03I are located in a drainage swale that drains into the newly constructed storm water retention basin.

#### Interview with Property Owner

On August 15, 2011, Bill Heil from the NAS JRB Willow Grove Environmental Division, confirmed that no permits, construction, directives, or other guidance had been issued that would change the use of site groundwater.

The operation of the two supply wells and the responsibility for compliance with the drinking water permit associated with their use have been transferred to the Pennsylvania Air National Guard (PaANG).

Mr. Heil said that the Air Force Reserve is in the process of confirming that the stick-up heights of the four monitoring wells located within the newly constructed drainage swale are high enough to prevent their submersion when the swale fills with storm water. The stick-ups were previously extended by a drilling subcontractor to Clayco, however, they have not been surveyed. Clayco plans to have a surveyor confirm that the stick-ups are high enough, and if not, they will be extended further.

#### Summary

Based on the data obtained for the RDLUC inspection, there was no non-compliance with the land use controls placed by the Navy on Site 1 groundwater. The Navy has communicated with the current property owner of Site 1 (the Air Force Reserve) notifying them of current LUCs compliance status.



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Monitoring wells 01MW01S and 01MW01SO have been replaced, allowing groundwater monitoring to continue.

If you have any questions or require revisions regarding this report, please do not hesitate to contact me.

Sincerely,

Andrew Frebowitz  
Project Manager

AF/nfs

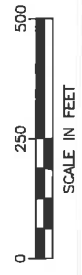
Enclosure

c: Lisa Cunningham (EPA Region 3)  
Kathleen Patnode (EPA Region 3 BTAG)  
Tim Sheehan (PADEP)  
Marty Schy (Navy Caretaker Office)  
Horsham Township Library  
Glenn Wagner (Tetra Tech)  
Garth Glenn (Tetra Tech) (without enclosures)  
File

## FIGURES



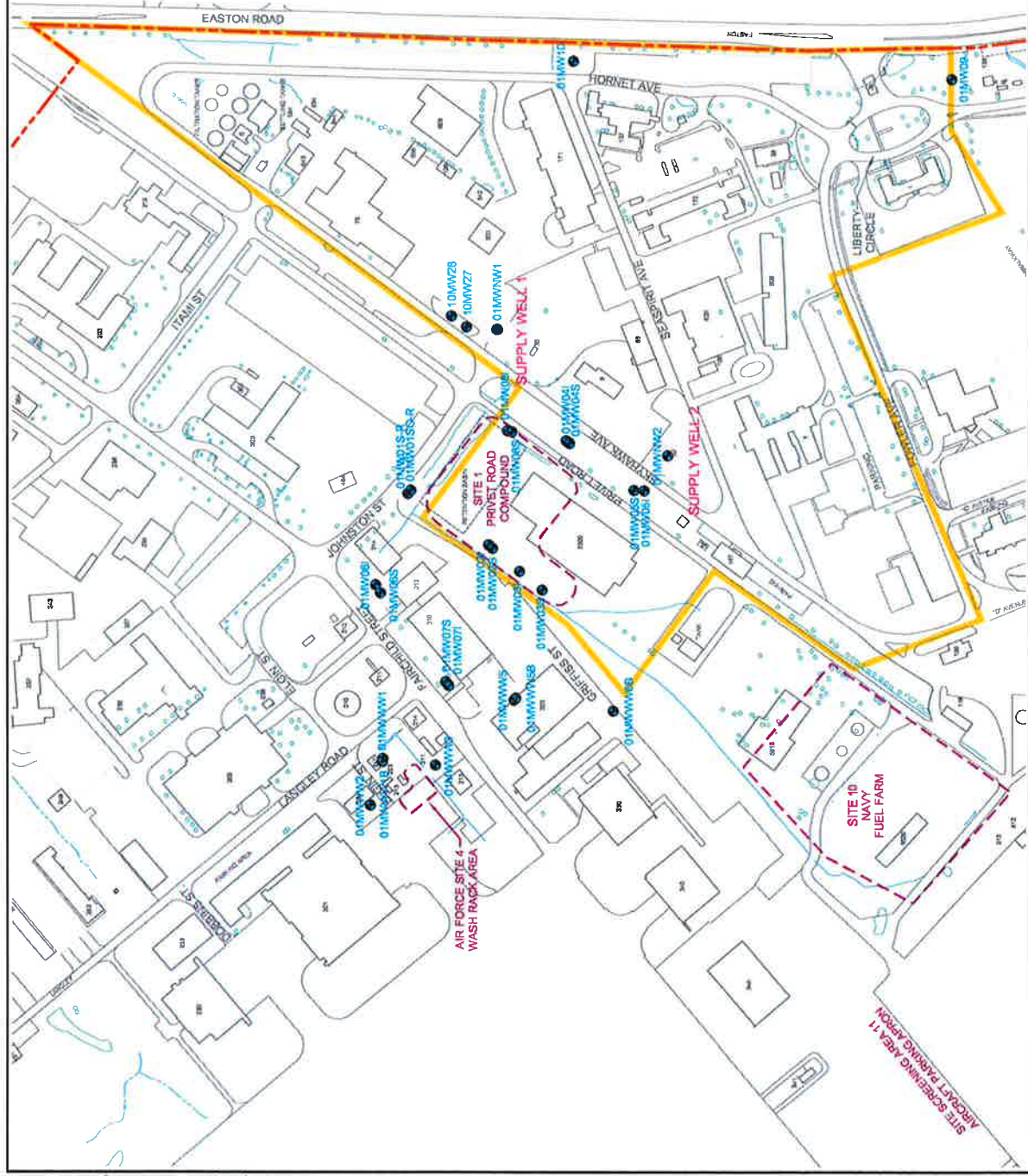
- LEGEND**
- MONITORING WELL LOCATION
  - PERIODIC GROUNDWATER MONITORING WELL LOCATION
  - BOUNDARY OF INSTITUTIONAL CONTROLS



TETRA TECHNUS, INC.

**SITE LAYOUT AND PROPOSED LAND USE CONTROL AREA**  
**SITE 1 - PRIVET ROAD**  
**NAS JRB WILLOW GROVE**  
**WILLOW GROVE, PENNSYLVANIA**

FILE	112G02014GM01-2	SCALE	AS NOTED
FIGURE NUMBER	FIGURE 1	REV	0
		DATE	08/22/11



**ATTACHMENT A**  
**INSTITUTIONAL CONTROL INSPECTION CHECKLIST**

**INSTITUTIONAL CONTROL INSPECTION CHECKLIST**  
**FOR LAND USE CONTROLS**  
**SITE 1-PRIVET ROAD COMPOUND GROUNDWATER (OU 3)**  
**NAS JRB WILLOW GROVE, HORSHAM TOWNSHIP, PENNSYLVANIA**

**A. Annual certification**

Name: Robert Lewandowski  
Affiliation: NAVY BRAC ENVIRONMENTAL COORDINATOR  
Signature: *Robert Lewandowski*  
Date: 8/29/11

**B. Interview Property Owner**

Person Interviewed: Bill Heil (NAS JRB Willow Grove)  
Date: 8/15/11

**Check as appropriate:**

- No permits, construction, directives, or other guidance has been issued that would change the use of site groundwater.  
Comments: Monitoring Wells O1MW013, O1MW010, and O1MW015 have been abandoned due to construction activities. O1MW013 and O1MW010 have been replaced.

Changes have been made that may change the use of site groundwater  
Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**C. Physical On-Site Inspection**

Name: Donald Whalen  
Affiliation: Tetra Tech  
Signature: *Donald Whalen*  
Date: 8/15/11

In accordance with the Land Use Controls of Site 1 Groundwater (OU 3), the following numbered and checked items are being inspected to ensure compliance.

Item	Check one	Comments *
1. Land Use Condition: Uses of treated/untreated groundwater?  If yes, is there evidence of use of untreated groundwater in violation of the remedy?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	The Base obtains its potable water from two supply wells located east of Site 1. The water is treated to remove VOCs prior to distribution.
2. Any groundwater supply wells found?  If yes, is there evidence of damage to the remedy?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	see above.
3. Weather Conditions		80°F, cloudy

\* If the answer to a question is 'yes', use the Comments column to list type(s) and name(s) of notices, permits, variances, or notices of intent found: Describe the type and location where the non-conforming groundwater use was observed or reported.

**ATTACHMENT B**

**REPLACEMENT MONITORING WELL COMPLETION REPORTS**

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES  
 BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY  
 WATER WELL LICENSING/WATER WELL INVENTORY SECTION  
 3240 Schoolhouse Rd  
 Middletown, PA 17057  
 717-702-2017

<b>WATER WELL COMPLETION REPORT</b>		
Well Driller: <b>EICHELBERGERS INC.</b>	Driller Well ID: <b>DS10050-MW015</b>	
Driller License: <b>0198</b>	Local Permit #:	
Type of Activity: <b>New Well</b>	Original Well By: <b>Current Driller</b>	
Date Drilled: <b>4/20/2011</b>	Drilling Method: <b>AIR ROTARY</b>	
Owner: <b>USACE</b> Address of Well: <b>1301 EASTON RD</b> <span style="float: right;">Zipcode: <b>19090</b></span> County: <b>MONTGOMERY</b> Municipality: <b>HORSHAM</b> <span style="float: right;">Municipality Type: <b>T</b></span> Coordinate Method: <b>Commercial Street Atlas Program</b> Quadrangle: <span style="margin-left: 100px;">Latitude: <b>40.15848</b></span> <span style="float: right;">Longitude: <b>-75.12258</b></span>		
Well Depth (ft): <b>40</b>	Well Finish: <b>SCREEN</b>	
Depth to Bedrock (ft): <b>24</b>	Did Not Encounter Bedrock:	
Well Yield (gpm):	Yield Measure Method:	
Static Water Level: (ft below land surface)	Water level after yield test: (ft below land surface)	
Length of Yield Test: (minutes)	Saltwater Zone (ft):	
Use of Well: <b>OBSERVATION</b>	Use of Water: <b>UNUSED</b>	

<b>DRILLER'S LOG</b>		
<u>UNIT TOP</u>	<u>UNIT BOTTOM</u>	<u>DESCRIPTION OF UNITS PENETRATED</u>
Unit Top 1: <b>0</b>	Unit Bottom 1: <b>15</b>	Unit 1: <b>OVERBURDEN</b>
Unit Top 2: <b>15</b>	Unit Bottom 2: <b>24</b>	Unit 2: <b>WEATHERED RED SILTSTONE</b>
Unit Top 3: <b>24</b>	Unit Bottom 3: <b>40</b>	Unit 3: <b>RED SILTSTONE AND SANDSTONE</b>



<b>BOREHOLE</b>			
Section 1:	Top: <b>0</b>	Bottom: <b>40</b>	Diameter: <b>6</b>

<b>CASING</b>
Casing 1:

Top: 0	Bottom: 32	Diameter: 2	Material: PVC OR OTHER PLASTIC
<b>Seal(Grout) 1:</b>			
Top: 0	Bottom: 30	Type: BENTONITE CHIPS/PELLETS	

<b>SCREEN/SLOT</b>			
<b>Screen 1:</b>	Top: 32	Bottom: 40	Diameter: 2
	Type: SCREEN		
	Material: PLASTIC		Slot Size: 20
	Packing: Screened Sand		

I hereby certify that the above information is true and complete to the best of my knowledge and belief.

 \_\_\_\_\_ 

Driller's Signature (required) Date

DEPARTMENT OF CONSERVATION & NATURAL RESOURCES  
 BUREAU OF TOPOGRAPHIC AND GEOLOGIC SURVEY  
 WATER WELL LICENSING/WATER WELL INVENTORY SECTION  
 3240 Schoolhouse Rd  
 Middletown, PA 17057  
 717-702-2017

<b>WATER WELL COMPLETION REPORT</b>		
Well Driller: <b>EICHELBERGERS INC.</b>	Driller Well ID: <b>DS10050-MW0150</b>	
Driller License: <b>0198</b>	Local Permit #:	
Type of Activity: <b>New Well</b>	Original Well By: <b>Current Driller</b>	
Date Drilled: <b>4/20/2011</b>	Drilling Method: <b>AIR ROTARY</b>	
Owner: <b>USACE</b>		
Address of Well: <b>1301 EASTON RD</b>	Zipcode: <b>19090</b>	
County: <b>MONTGOMERY</b>		
Municipality: <b>HORSHAM</b>	Municipality Type: <b>T</b>	
Coordinate Method: <b>Commercial Street Atlas Program</b>		
Quadrangle:	Latitude: <b>40.15864</b>	Longitude: <b>-75.12262</b>
Well Depth (ft): <b>24</b>	Well Finish: <b>SCREEN</b>	
Depth to Bedrock (ft):	Did Not Encounter Bedrock: <b>X</b>	
Well Yield (gpm):	Yield Measure Method:	
Static Water Level: (ft below land surface)	Water level after yield test: (ft below land surface)	
Length of Yield Test: (minutes)	Saltwater Zone (ft):	
Use of Well: <b>OBSERVATION</b>	Use of Water: <b>UNUSED</b>	


<b>DRILLER'S LOG</b>		
<u>UNIT TOP</u>	<u>UNIT BOTTOM</u>	<u>DESCRIPTION OF UNITS PENETRATED</u>
Unit Top 1: <b>0</b>	Unit Bottom 1: <b>13</b>	Unit 1: <b>OVERBURDEN</b>
Unit Top 2: <b>13</b>	Unit Bottom 2: <b>24</b>	Unit 2: <b>WEATHERED RED SILTSTONE</b>

<b>BOREHOLE</b>			
Section 1:	Top: <b>0</b>	Bottom: <b>24</b>	Diameter: <b>6</b>

<b>CASING</b>			
Casing 1:			
Top: <b>0</b>	Bottom: <b>11</b>	Diameter: <b>2</b>	Material: <b>PVC OR OTHER PLASTIC</b>

<b>Seal(Grout) 1:</b>		
Top: 0	Bottom: 9	Type: BENTONITE CHIPS/PELLETS

<b>SCREEN/SLOT</b>			
<b>Screen 1:</b>	Top: 11	Bottom: 24	Diameter: 2
	Type: SCREEN		
	Material: PLASTIC		Slot Size: 20
	Packing: Screened Sand		

I hereby certify that the above information is true and complete to the best of my knowledge and belief.	
	6/24/11
Driller's Signature (required)	Date