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NAS CECIL FIELD, FL
5090.3a

SAMPLING AND ANALYSIS PLAN FOR BUILDING 900 NAS CECIL FIELD FL
6/4/1999
TETRA TECH NUS INC

**Sampling and Analysis Plan
Building 900
NAS Cecil Field
Jacksonville, Florida**

June 4, 1999

The objective of the installation and sampling of the monitoring wells and the collection of a soil sample is to confirm the results of groundwater and soil samples collected on behalf of Northrop-Grumman as part of a due diligence investigation at Building 900. In that investigation, six shallow and six intermediate temporary monitoring wells were installed, sampled and analyzed for organic and inorganic parameters. Note that the temporary wells were left in place and a flush mounted concrete pad was installed. The groundwater results showed the presence of (Trihalomethanes) THMs and lead at concentrations greater than FDEP criteria. Chromium and vanadium were also detected at concentrations greater than FDEP criteria, but only in one well. Twelve soil samples were collected and analyzed for organic and inorganic parameters. At one soil sample location, the benzene concentration was greater than the FDEP criteria. The installation and sampling of two monitoring wells and collection of the soil sample is proposed for Building 900 per the April 20, 1999 BCT Meeting.

Two monitoring wells will be installed as shown on Figure A. These locations correspond to the locations that had the highest THM concentration and high lead concentration.

Prior to the installation of the wells, utilities must be located or cleared.

Each well will be installed with a depth of 50 feet and with a well screen length of 5 feet. The screen will be 0.010-inch slot. Each well will be constructed with certified-clean well construction material and constructed of 2-inch, flush-threaded PVC well screen and riser. One well will be designated as CEF-900-1I, the other as CEF-900-2I. The locations and top of casing elevations will be surveyed by a registered surveyor.

The groundwater will be sampled using low-flow techniques. Note that sample for dissolved metals analysis is to be filtered through a 1-micron filter.

The soil sample will be collected from a depth of 0 to 1 feet as shown on Figure A. The Northrop-Grumman sample was collected from the temporary monitoring well boring. Since the protective casing of the wells extends a foot or so around the original boring, the selected location is to be 2 feet northwest of the edge of the pad so that undisturbed soil will be collected.

At the soil sample location, containers will be filled for both VOC analysis and Synthetic Precipitation Leaching Procedure (SPLP) (VOC fraction, including benzene) analysis. The laboratory will analyze the VOC sample first, and based on the results, the SPLP (VOC fraction, including benzene) will be performed. The SPLP sample bottle will be taped closed and "Do not analyze until directed by TTNUS" will be written on the label. The chain of custody shall be noted with instructions to analyze the soil for VOCs first, report the results to TTNUS, then TTNUS will direct the laboratory to perform the SPLP (VOC fraction, including benzene), if needed. If the benzene concentration is greater than 7 ug/kg, then the SPLP will be performed.

The well installation, sampling activities, and procedures described in this Work Plan will be performed in accordance with the U.S. EPA Region 4 Environmental Investigation Standard Operating Procedures and Quality Assurance Manual (EISOPQAM) and the Base-Wide Generic Work Plan for Naval Air Station (NAS) Cecil Field. Specifically, the Base-Wide Generic Work Plan includes procedures for management of investigation-derived wastes in Volume I and standard operating procedures in the Project Operations Plan in Volume II.

Personnel protection equipment and other waste trash will not be considered hazardous and will be disposed in a municipal landfill. Such trash will be collected in a plastic bag and disposed in a

suitable trash receptacle. Drill cuttings and development water shall be drummed and analyzed for disposal purposes.

Sample handling requirements, the bottleware required, preservation, and holding time requirements for the analysis proposed for this sampling event are as identified in the following table:

| Analysis | Analytical Method | Bottleware | Preservation | Holding Time ⁽¹⁾ |
|------------------------------------|-------------------|----------------------------------------------------|------------------------------------------|---------------------------------------------------|
| TCL VOCs (Aqueous) | SW-846 8260B | Two 40 mL glass vials with Teflon-lined septum cap | HCl to pH<2, cool to 4°C, zero headspace | 14 days to analysis |
| Lead, chromium, vanadium (Aqueous) | SW-846 6010B | 1-Liter glass or polyethylene | HNO ₃ to pH<2 cool to 4°C | 6 months |
| TCL VOCs (Soil) | SW-846 5035/8260B | Encore samplers | Cool to 4°C; preservation by laboratory | 48 hours to preservation; 14 days to analysis. |
| SPLP (VOCs, including benzene) | SW-846 1312/8260B | 8-oz. glass jar | Cool to 4°C | 14 days to leach preparation, 14 days to analysis |

1 Holding times are measured from the date/time of sample collection.

Analytical results will be provided on a 14-day turn around basis.

The laboratory contracted to do this work is as follows:

ACCUTEST SOUTHEAST
 4405 Vineland Road, Suite C-15
 Orlando, Florida 32881
 Attention: Susan Gaudios
 (407) 425-5700
 Fax: (407) 425-0707

As agreed upon by the BCT, the collection of rinsate and trip blanks has been eliminated at NAS Cecil Field. In addition, field blanks will not be collected during this sampling program because there will be no decontamination of sampling equipment. Because only two samples are being collected, no duplicate sample will be collected. In accordance with these changes, the following table summarizes the frequency and type of field Quality Assurance/Quality Control (QA/QC) samples to be collected for this sampling program.

| Type of Samples | Frequency | Samples to be Collected |
|-----------------|---------------------|-------------------------|
| Field Duplicate | 1/10 sample/matrix | 0 |
| Lab MS/MSD | 1/20 samples/matrix | 1 |

As agreed upon by the BCT, formal data validation has been eliminated from the installation restoration program at NAS Cecil Field. However, the analytical data packages generated by the analytical laboratory will be reviewed by Tetra Tech NUS personnel to eliminate false positives and false negative results.

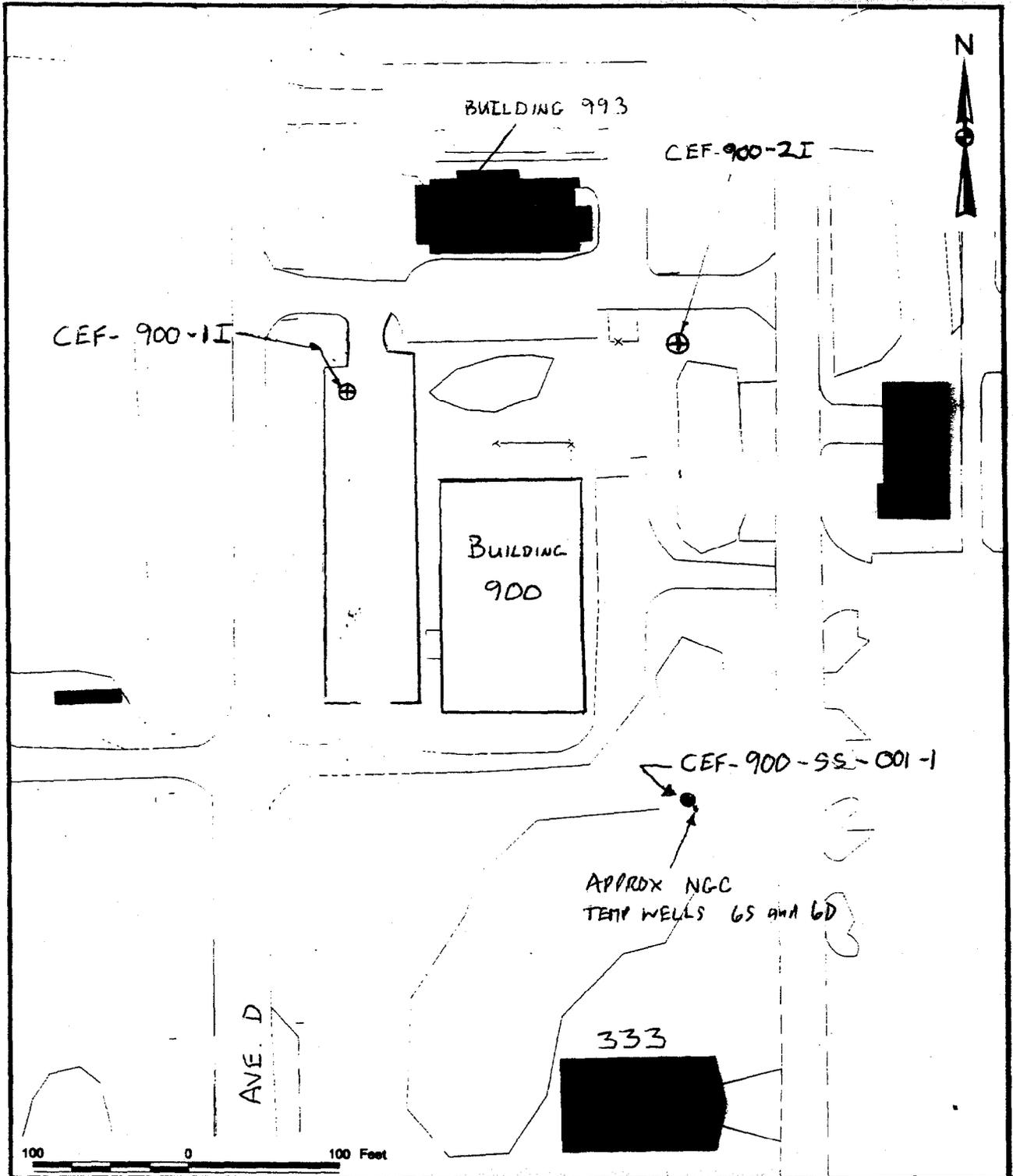
Table 1
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| Sample location | Sample Number | TCL VOCs | SPLP (VOCs) | Total Lead, Chromium, Vanadium | Dissolved (1) Lead, Chromium, Vanadium |
|------------------------------|------------------|-------------|----------------|--------------------------------------|-------------------------------------------------|
| CEF-900-1I | CEF-900-GW-01I-1 | X | | | |
| CEF-900-2I | CEF-900-GW-02I-1 | | | X | X |
| CEF-900-SS-001 (0-1' bgs) | CEF-900-SS-001-1 | X | X(2) | | |

Note

- (1) - Filter through 1-micron filter
 - (2) - Perform based on VOC analysis.
- bgs - below ground surface



| | |
|--------------------|------|
| DRAWN BY | DATE |
| CHECKED BY | DATE |
| COST/SCHEDULE-AREA | |
| SCALE AS NOTED | |



PROPOSED WELL LOCATIONS

BUILDING 900 AREA

| | |
|-----------------|------|
| CONTRACT NUMBER | |
| APPROVED BY | DATE |
| APPROVED BY | DATE |
| DRAWING NO. | REV |
| A | 0 |