Enclosures for

JL Colter Letter of December 27, 2002

NWIRP Bethpage, New York

130003 B

X **Enclosure 1 - Navy Responses to NYSDEC Comments on Petition to Modify Boundaries**

X **Enclosure 2 – Sites 2 and 3, Construction Completion Report Certification**

X **Enclosure 3 – Legal Description of Property to be Retained by Navy**

X **Enclosure 4 – Navy Responses to various NYSDOH comments**

X **Enclosure 6 – NYSDEC Letter of October 23, 1997**

X **Enclosure 7 – Supplemental Surface Soil Results for Site 2**

Delist Petition Enclosures

COMMENT RESPONSES FROM ENGINEERING FIELD ACTIVITY, NORTHEAST REGARDING PETITION TO MODIFY NAVAL WEAPONS INDUSTRIAL RESERVE PLANT SITE ID #130003B

Comments from New York State Department of Environmental Conservation (NYSDEC) dated October 29, 2002:

The incompleteness of the petition consists of the following omissions:

1. **Finding of Suitability to Transfer (FOST - 105 Acre Parcel), Enclosure 2, Deed Notification and Restriction**: The Department of Navy needs to revise the deed restriction and institutional controls listed in Enclosure 2 of the FOST. These revisions must be submitted to and accepted by the Department's Division of Environmental Remediation (DER) and Division of Solid and Hazardous Materials (DSHM).

   The deed restriction must then be filed with the Nassau County Office of Records (NCOR). The following revisions should be made to the deed restrictions:

   a) Tables 9-1 through 9-6 of the FOST Appendix should be included on the deed notice filed with the NCOR.

   b) Figures 8A and 9A (2 by 3 foldout sheets) of the FOST should be included with the deed restriction filed with the NCOR.

   c) Institutional Controls and deed restrictions, specified in the NWIRP OU 1 Soils Record of Decision (ROD) for Sites 2 and 3 must be in place before the portion of the property petitioned can be delisted and transferred to NCOR.

   d) The Department of Navy needs to submit a draft of the declaration of the covenants and restrictions along with the metes and bounds description of the area where digging will be prohibited/restricted for our review and acceptance.

   e) The groundwater use restrictions also need to be specified in the declaration of the covenants and restrictions.

RESPONSE TO 1: The Department of the Navy is presently without the requisite authority to place an encumbrance on any Federal property, including the 105-acres, prior to conveyance. The Navy's real estate disposal authority for the 105-acres, as well as for Plant 20, is special authority issued as part of Special Legislation. This authority allows the Department of Navy to issue restrictions as part of the deeds of transfer for property that is to be conveyed. Regarding the 105-acre property, all required deed restrictions will be included in the Quitclaim deed(s) that will be used to convey title to the ultimate transferee. That Quitclaim deed(s), with the restrictions, will then be recorded with the NCOR.

RESPONSE TO 1a: Reference to Tables 9-1 through 9-6 in Appendix A of the FOST for the 105-Acre Parcel will be included in the deed of transfer as recommended.

RESPONSE TO 1b: Reference to Figures 8A and 9A in Appendix A of the FOST for the 105-Acre Parcel will be included in the deed of transfer as recommended.

RESPONSE TO 1c: The institutional control of a soil cover atop Sites 2 and 3 has been completed (see Construction Completion Report dated May 2002).

For reasons stated in the Navy's response to Item 1 above, the Navy can not encumber property prior to conveyance. However, notification of those areas where residual compounds remain, will be included in the appropriate transfer documents.

RESPONSE TO 1d: By issuance of the Draft FOST, including enclosure (2) to the FOST, the Navy has provided the NYSDEC with the covenants and restrictions expected to be part placed on the property that is to be conveyed.

Please note that the Navy is not restricting digging in those AOCs where residual compounds remain. The Navy is simply notifying the transferee of their existence so that the appropriate precautions can be taken by the transferee for worker protection and to insure appropriate soil disposal. Therefore, since an actual restriction is not being placed on these areas, the Navy does not feel that metes and bounds survey of each AOC is warranted. Instead, the Navy developed tables and figures depicting each AOC location where a residual compound remains and included this information into Appendix A of the FOST.

RESPONSE TO 1e: Agreed. Item 6 of the Environmental Covenants, Conditions, and Restrictions (enclosure 2 of the FOST) is vague regarding groundwater use restrictions. This item will be amended to be more specific regarding the restriction of groundwater use beneath the 105-acre parcel.

2. **NWIRP Plant 3 (105 Acre Parcel) Installation and Restoration (IR) Operable Unit 1, Sites 1, 2 and 3 Construction Completion Report**: The Bureau of Construction Services is the project lead for this part of the project and Sites 2 and 3 are part of the areas to be delisted and subsequently transferred as part of the FOST. This report was commented on by the Bureau of Construction Services and their comments have yet to be addressed. This Construction Report needs to be finalized before this portion of the site can be delisted (see also comment 1C above).

RESPONSE TO 2: Comment noted. There were only 2 comments issued regarding the above Report. The first was to include a new figure in the front of the document. A revised figure was developed and forwarded to NYSDEC via email for inclusion into their copy of the report. The second was to have a New York licensed Professional Engineer declare that the work at Site 2 was completed as designed. A New York State licensed P.E. from

Tetra Tech NUS, who provided oversight during installation of the permeable soil/gravel cover, has performed an engineering review of the work conducted by CAPE Environmental. His findings have been summarized in a Declaration Page. The Declaration page and the revised Figure will be forwarded to Mr. Gerard Burke or NYSDEC's Bureau of Construction Services. These pages should be inserted appropriately into the Construction Completion Report dated May 2002.

3. The Major Modification of the 6NYCRR Pat 373 Permit Removal of the 105 acres site Statement of Basis Report must be approved by the DSHM before the petition to modify the boundaries of the 105-acre parcel can be approved.

RESPONSE TO 3: Comment noted. The document referenced above was prepared by the Northrop Grumman Corporation and submitted to Mr. Steve Kaminski of NYSDEC for review back in February 2001. The Navy is not aware of any comments that were forwarded to Northrop Grumman regarding the referenced document. Therefore, the Navy has assumed that NYSDEC concurs with the document as submitted.

4. **Finding of Suitability to Transfer (FOST - Plant 20 Parcel), Enclosure 2, Deed Notification and Restriction**: The deed restrictions included in Enclosure 2 of the FOST must be filed with the NCOR. The Plant 20 parcel can be delisted separately form the main 105 acre parcel.

RESPONSE TO 4: As stated in the Response to 1 above, the Department of the Navy is presently without the requisite authority to place an encumbrance on any Federal property, including Plant 20, prior to conveyance. The Navy's real estate disposal authority for Plant 20, as well as for the 105-acress, is special authority issued as part of Special Legislation. This authority allows the Department of Navy to issue restrictions as part of the deeds of transfer for property that is to be conveyed. Regarding the Plant 20 property, all required deed restrictions have been included in the Quitclaim deed that will be used to convey title to the ultimate transferee. That Quitclaim deed, with the restrictions, will then be recorded with the NCOR.

5. The tax map numbers and a metes and bounds description for the remaining 8.7 acres of the main 105 acres parcel need to be provided.

RESPONSE TO 5: A property survey map for the entire 105-acre parcel, including the 8.7 acres that is to be retained by the Navy, was previously submitted as enclosure 2 to the Boundary Modification Request that was sent to Ms. Erin Crotty of NYSDEC on May 31, 2002. A legal description of the 8.7-acre parcel has been completed and will be forwarded to NYSDEC and to the attention of Mr. Dennis Farrar and Mr. Steve Scharf. This legal description will be used to describe this area in the quickclaim deed.

The New York State Department of Health's comments (Gilday to Scharf/Wilkie) regarding the FOST for Plants 3 and 20, the Construction Completion Report for Installation and Restoration (IR) for sites 2 and 3, the Phase II Environmental Baseline Survey, NWIRP, Bethpage, and the petition to delist portions of the 105 acre facility and Plant 20 from the Department's registry of Inactive Hazardous Waste Disposal Sites were dent directly to the Department of Navy on October 1, 2002. The comments need to be addressed before the requested boundary modifications can be approved.

RESPONSE: Navy responses to NYSDOH comments referenced above have been completed and presented in a separate comment response document.

CERTIFICATION OF COMPLETION

CONSTRUCTION COMPLETION REPORT
FOR SITE 2 – RECHARGE BASIN AREA AND SITE 3 – SALVAGE STORAGE AREA
NWIRP BETHPAGE, NEW YORK

In July 1995, the United States Navy and New York State Department of Environmental Conservation signed a Record of Decision (ROD) for soils at Sites 1 – Former Drum Marshalling Area, Site 2 – Recharge Basin Area, and Site 3 – Salvage Storage Area at the Naval Weapons Industrial Reserve Plant, Bethpage, located in Nassau County, New York. The ROD identified several actions to be conducted including excavation and off site disposal of a portion of the contaminated soils, in-situ treatment of soils contaminated with volatile organic compounds, and placing a permeable cover over the soils with residual contamination. In addition, the ROD specified restrictions on the future use of the land so as to prevent unacceptable exposure to residual site contamination.

The majority of contamination identified at the NWIRP Bethpage, and in particular those contaminants that represent a threat to groundwater quality (i.e. volatile organic compounds), were associated with Site 1. Contaminants and associated risks identified with Site 2 and Site 3 were primarily associated with relatively low volatile and water insoluble organics and metals, and represent a potential risk to those personnel that would directly contact the contaminated soils over a long period of time.

Prior to the placement of a permeable cover in 2001, other remedial activities were conducted at Site 2 and Site 3. In 1996, the Navy excavated and disposed off site, PCB-contaminated soils from Site 2. In 1998, as part of the general facility cleanup, Northrop Grumman removed the large debris, scraped surface soils to collect smaller surface debris, and then placed two inches of cover soil over Site 3. Asphalted areas at Site 3 were not disturbed.

Based on these remedial actions, the Navy determined that the quality of the surface soil at Site 2 – Recharge Basin Area and Site 3 – Salvage Storage Area at the NWIRP Bethpage, New York should be re-evaluated, and in particular, surface soil testing should be conducted to delineate areas that require additional permeable cover.

Surface soil samples were collected in late February 2001 and analyzed for site specific chemicals of concern consisting of metals, polynuclear aromatic hydrocarbons, and polychlorinated biphenyls. Based on the analytical testing, the chemicals of concern were found to be present in one or more samples at concentrations greater than the remedial goals. The test results were presented in a report for Site 2 and Site 3 "Soil Sampling Results and Workplan for Application of Permeable Cover; NWIRP Bethpage, New York" dated June 21, 2001. This report recommended that a permeable soil/gravel cover be placed over most of Site 2. The report also recommended that additional permeable cover, beyond that placed at Site 3 in 1998, was not required.

The Navy then contracted Cape Environmental to install the permeable cover for Site 2. Cape Environmental prepared a "Implementation Work Plan for Application of a Permeable Soil/Gravel Cover at IR Site 2 – Recharge Basin Area" dated October 5, 2001. The Navy provided construction oversight services during the implementation of the remedy. Construction details and records are provided in "Construction Completion Report for Site 2 – Recharge Basin Area and Site 3 – Salvage Storage Area" dated May 2002.

The June 2001 and October 2001 plans detailed the placement of a permeable cover at Site 2. This permeable cover was to consist of a minimum of 6 inches of soil or gravel at locations as indicated in the June 21, 2001 report. Based on a review of the data presented in the May 2002 report, including weigh tickets, photographs, test hole cover thickness measurements, and site records, minimum cover thickness requirement was met.

The Site 2 permeable soil cover was vegetated using a hydro-seeding method. This activity occurred in December 2001, and beyond a normal season for seeding. As such, seed germination and plant growth were slow. By the fall of 2002, the entire area was observed to be vegetated, although the quantity of vegetation was sparse. The silt fence was removed from the site in October and November 2002, and this removal completed the remedial activities.

On November 21, 2002, I conducted an inspection of Site 2 and Site 3. The soil cover at Site 2 and Site 3 is intact and stable with no significant evidence of erosion. Only minor soil erosion was noted near a storm drain in the center of the recharge basins at Site 2. However because of its minimal nature, no additional action is required. The gravel roads constructed at Site 2 were noted to be relatively stable, with no evidence of rutting. Natural and planted vegetation is sparse, but established and present throughout Sites 2 and 3.

With the exception of the recharge basins, both Site 2 and Site 3 are relatively flat. However, because of the concern for potential erosion of the cover soil around the Site 2 recharge basins, the edges of the recharge basins were inspected. The edges of the basins were observed to be surrounded with soil berms that would limit erosion associated with surface water flow directly into the basins. Also, there was no evidence of significant soil erosion from Site 2 directly into these basins or on the relatively steep basin side walls. Because of the naturally sandy nature of the soils, precipitation at Site 2 does not likely pond or runoff on the surface, but infiltrates directly into the soils. Natural brush type vegetation was also noted to be growing on some of the recharge basin side walls.

Therefore, based on a review of the historical data, the construction completion report documentation, and the November 2002 site visit, I certify that the remedial construction for Site 2 and Site 3 was completed in accordance with the approved remedial design and complies with the intent of the work specified in the design.

David D. Brayack P.E.
NY LN 080336
(Stamp)

12-9-02
Date

(Seal)

Unauthorized alteration or addition to this report is a violation of Section 7209 of the New York State Education Law.

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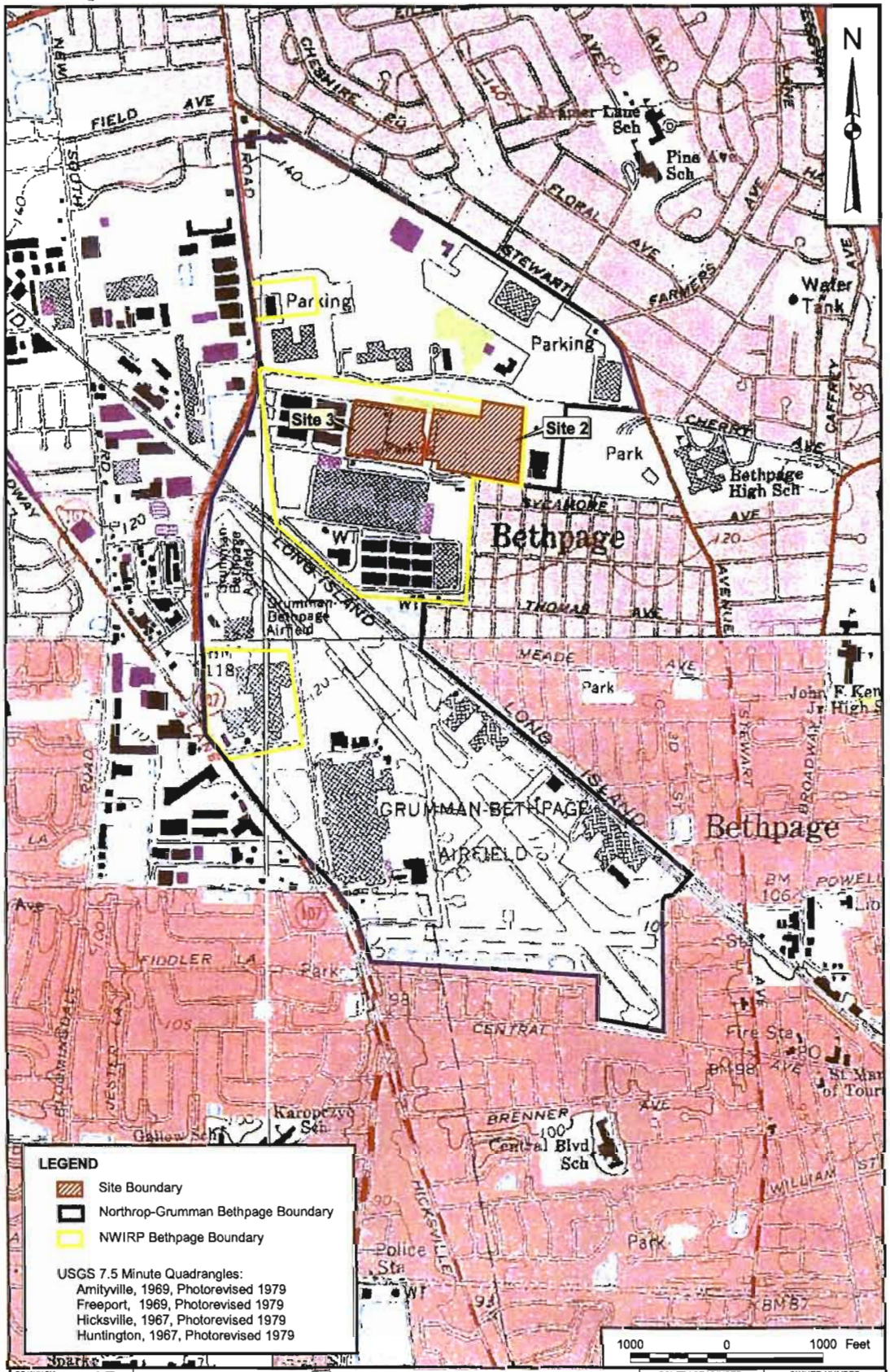

DRAWN BY J. LAMEY	DATE 8/29/02	Tetra Tech NUS, Inc.	CONTRACT NUMBER — / OWNER NUMBER —
CHECKED BY —	DATE —		APPROVED BY — / DATE —
COST/SCHEDULE-AREA		SITE LOCATION MAP NAVAL WEAPONS INDUSTRIAL RESERVE PLANT BETHPAGE, NEW YORK	APPROVED BY — / DATE —
SCALE AS NOTED			DRAWING NO. FIGURE 1-1 / REV 0

LEGAL DESCRIPTION
PARCEL TO TBE RETAINED BY NAVY

ALL that certain piece or parcel of land together with all the improvements thereon, situateD, lying and being at Bethpage, Town of Oyster Bay, County of Nassau, State of New York more particularly bounded and described as follows:

BEGINNING at a corner formed by the intersection of the easterly side of South Oyster Bay Road (as now open and in use) and the northeasterly line of lands of Long Island Railroad;

RUNNING THENCE South 49 degrees 41 minutes 36 seconds East, 1112.77 feet to the northerly side of Thomas Avenue;

THENCE easterly along the northerly side of Thomas Avenue, South 86 degrees 09 minutes 41 seconds East, 1077.83 feet to the westerly side of 11th Street;

THENCE northerly along the westerly side of 11th Street, North 03 degrees 50 minutes 19 seconds East, 612.50 feet to the True Point or Place of BEGINNING;

THENCE North 86 degrees 06 minutes 24 seconds West, 1220.38 feet;

THENCE South 04 degrees 41 minutes 41 seconds West, 45.34 feet;

THENCE North 83 degrees 01 minutes 48 southeasterly West, 261.89 feet;

THENCE North 04 degrees 41 minutes 41 seconds East, 190.01 feet;

THENCE South 80 degrees 57 minutes 05 seconds East, 262.44 feet;

THENCE South 04 degrees 41 minutes 41 seconds West, 33.01 feet;

THENCE South 80 degrees 50 minutes 55 seconds East, 310.02 feet;

THENCE North 09 degrees 15 minutes 02 seconds East, 39.96 feet;

THENCE South 80 degrees 49 minutes 36 seconds East, 247.51 feet;

THENCE South 09 degrees 15 minutes 02 seconds West, 27.90 feet;

THENCE South 80 degrees 49 minutes 27 seconds East, 165.19 feet;

THENCE North 09 degrees 15 minutes 02 seconds East, 25.90 feet;

THENCE South 80 degrees 49 minutes 02 seconds East, 130.35 feet;

MAY 6 2002

THENCE North 09 degrees 05 minutes 13 seconds East, 286.40 feet;

THENCE North 80 degrees 50 minutes 46 seconds West, 106.58 feet;

THENCE North 09 degrees 10 minutes 36 seconds East, 319.81 feet;

THENCE South 78 degrees 24 minutes 06 seconds East, 96.84 feet;

THENCE North 78 degrees 32 minutes 49 seconds East, 123.21 feet;

THENCE South 80 degrees 27 minutes 06 seconds East, 200.16 feet to the westerly side of 11th Street;

THENCE southerly along the westerly side of 11th Street, South 03 degrees 50 minutes 19 seconds West, 675.03 feet to the True Point or Place of **BEGINNING**.

ABOVE DESCRIBED PARCEL CONTAINS **8.7061 ACRES** (379237.7 SQ.FT.)

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RESPONSE TO STATE OF NEW YORK DEPARTMENT OF HEALTH COMMENTS DATED SEPTEMBER 27, 2002 RE: NORTHROP GRUMMAN SITE, NAVAL WEAPONS INDUSTRIAL RESERVE PLANT (NWIRP) BETHPAGE, GRUMMAN STEEL LOS SITE, NASSAU COUNTY SITES NO. 130-003A, B&C

I have reviewed the documentation record of remedial/corrective action activities for the Navy Weapons Industrial Reserve Plant (NWIRP), Bethpage in conjunction with the U.S. Navy petition, dated May 31, 2002, to reclassify portions of the NWIRP. The Navy petition includes four supporting documents as enclosures. I offer the following comments on the petition and associated enclosures, with reference to other relevant documents as noted in my comments.

Petition

1. **Comment:** The Petition should reference the Air Sampling Results and Report, dated April 10, 2001, for the 105-acre parcel. Alternatively the Air Report could be included as, or within, a supporting document.

   Response: The April 10, 2001 was submitted as a draft. Since no comments were received, this report will be considered final and will be attached to the petition.

2a. **Comment:** Re: Air Sampling Results and Report, Indoor air sampling results indicate the presence of trichloroethene (TCE) at levels above typical background concentrations in most of Plant 3; in most cases (all but locations BP-P3-07 and BP-P3-09) the levels were only slightly elevated. These results indicate the presence of one or more TCE sources within or beneath Plant 3 and possibly in the vicinity of the 17-S warehouses. These results may be indicative of vapor intrusion from residual subsurface vapor contaminants and/or may represent residual TCE sources within the buildings (e.g., historic leaks into cracks or TCE sorbed onto construction materials).

   Response: TCE was used throughout the buildings for decades. During this period, minor quantities of TCE liquids and/or vapors would have likely absorbed into porous building materials including concrete, paint, insulation, and wood block flooring.

Over the past 10 years, several soil gas investigations have been conducted to specifically identify potential sources of solvent contamination underneath Plant 3. These investigations identified two areas where the concentrations of VOCs in soil vapors were thought to pose a potential for concern - facilities maintenance area and former honeycomb area pit. Subsequent testing of the soils beneath the former honeycomb area found that subsurface soils did not contain significant concentrations of VOCs to warrant a remedial action. However, soils beneath the former honeycomb area were later excavated by Northrop Grumman as part of their efforts to vacate the Navy's property due to elevated concentrations of chromium.. In addition, soils beneath the facilities maintenance area were also excavated by Northrop Grumman because of VOCs.

Although detectable levels of TCE were found in the ambient building air, (i.e. greater than background), the concentrations detected were much lower than applicable standards established by OSHA for an industrial setting.

2b. **Comment:** Previous soil gas testing beneath Plant 3 identified TCE and tetrachloroethene (PCE) at levels up to about 600,000 ug/m^3 and 5,000,000 ug/m^3, respectively. Remediation of volatile organic compound (VOC)-contaminated soil has since occurred as part of facility closure activities. However, no post-remediation soil vapor testing has been done. Soil gas must be re-tested beneath Plant 3, particularly the eastern portion of the building, to determine if the pre-remediation soil vapor contaminants have dissipated. Such testing will also aid in determining if the levels of TCE detected in indoor air in the building are from internal sources and whether any subsequent building reconstruction/reuse scenarios may result in indoor air quality impacts. The testing should include at least one point near E. Pit 23 in the Northeastern Machining Area. Soil vapor should also be tested between the southeast corner of Plant 3 and over to (and in the vicinity of) the 17-S warehouse (identified as "BLDG. 19" on the 105-acre property survey) that air sample BP-P3-11 was obtained from.

Response: Soil gas results do not necessarily confirm the presence of contaminant sources. Soil gas data is collected to quickly and efficiently locate potential areas and depths where contaminated soil and/or groundwater may be present. Based on soil gas

results, it is routine to collect soil and/or groundwater samples to determine if contaminated media is actually present.

Prior to the remediation of VOC-contaminated soils at IR Site 1, soil samples were also collected in the eastern portion of Plant 3, in accordance with the Navy's OU 1 Soils ROD. The results of these samples confirmed that despite detecting VOCs during the various soil gas surveys, contaminated soils were not present in this area. These results were published in a Report entitled "Remedial Design, Phase II Pre-Design Investigation Letter Report for Site 1, July 1995". The study findings are summarized as follows.

Approximately 120 soil samples were collected from underneath and just outside of the eastern end of Plant 3 in 1995. A total of nine soil borings were advanced to a depth of 60 beet bgs and split spoons were taken every 5 feet and screened in the field using a photoionization detector (PID). PID readings ranged from none detected to as high as 50,000 ppb-v. Twenty-seven (27) of the samples with the highest PID readings were submitted to a fixed base laboratory for VOC analysis. Of these 27 samples, VOCs were only detected in 2 samples, and none of the results were in excess of the cleanup goals established in the Navy's OU 1 ROD. Based on these findings, as well as other pre-design field activities, it was concluded that extension of the AS/SVE system to address soils beneath Plant No. 3 was not required. The above conclusion was presented in a Report entitled "Design Analysis Report" that was submitted to the NYSDEC on September 25, 1997 to which a response was published in a letter dated October 23, 1997 that "the DEC concurs with the design parameters established in the report specifically the number of extraction, injection and monitoring wells and their spacing, and the sizing and specification for transmission piping and process equipment."

Also note that the referenced soil gas test results for TCE and tetrachloroethene (PCE) at levels of 600,000 ug/m^3 and 5,000,000 ug/m^3, respectively, were collected from an area that Northrop Grumman has since excavated.

2c. **Comment:** Freon 113 was detected in air sample BP-P3-07 at a level higher than typically found in indoor air samples. Freon 113 is commonly used as a refrigerant and its presence in the building may be related to air cooling units. The Navy may wish to

consult a ventilation contractor to evaluate the condition of cooling units in the building and to test for Freon leaks.

Response: The above comment is noted. The Navy would like to point out, however, that the detected concentrations do not exceed applicable standards for an industrial setting as established by OSHA.

3. **Comment:** Re: Effects of Installation Restoration (IR) Site 1 Soil Vapor Extraction (SVE) System on vadose zone vapors beneath Plant 3

The May 1995 Record of Decision (ROD) for the NWIRP Sites 1, 2, 3 makes reference to the presence of VOC "hot spots" in the vadose zone at Site 1 and beneath Plant 3 (see Page 27 of 41 in the ROD). The selected remedy in the 1995 ROD, Alternative 6, includes in-situ soil vapor extraction (SVE) for VOC-contaminated soil at Site 1 and underneath Plant No. 3 (see page ii and page 30 of 41, 1995 ROD). Consistent with this, the Major Modification of the Bethpage Facility Part 373 Permit – Removal of the 105-Acre GOCO Site Statement of Basis dated August 2002 notes that the ROD requirement for SVE includes removal of VOCs from the vadose zone soil below IR Site 1 and beneath Plant 3.

Information contained in the Close-Out Report for the Air-Sparging/Soil Vapor Extraction System, IR Site 1 NWIRP, dated March 30, 2001, indicates that contaminated vapors have been collected at depth east of Plant 3. However, the Close-Out Report provides no definitive information concerning the removal of contaminated soil vapors from beneath Plant 3. The most recent extraction well-specific data from the SVE points nearest the building indicate that between 6,000 to 45,000 ug/m^3 of PCE and up to about 5,000 ug/m^3 of TCE are SVE influent analyses, reported in the February 2002 Monthly Operations Summary for the VE/AS System, dated April 8, 2002, suggest that these concentrations may be somewhat lower at the present time. However, data presented in the Operations Summary (see the Concentrations vs. Time plot) also indicate that average vadose zone vapor concentrations for TCE and PCE in the vicinity of the VE/AS system continue to rebound to approximately 18,000 ug/m^3 and 50,000 ug/m^3, respectively, after each period of system shutdown.

Consistent with comment 2 above, soil vapor testing beneath and immediately east of Plant 3 will provide definitive information as to the effects of remedial activities on subsurface VOC vapors that were present prior to commencement of the activities.

Response: As stated above, the cleanup objectives and therefore the basis for selected areas for treatment, monitoring treatment performance, and shutdown criteria are based on the VOC concentration in soils, not soil vapor concentrations.

The referenced values of 18,000 and 50,000 ug/m^3 for TCE and PCE are less than potentially applicable standards of 270,000 and 170,000 ug/m^3 that assume plant workers directly breath only this soil gas on a continuous basis. In addition, because there is minimal mass of VOCs present in the soil gas, these measured soil gas values do not represent a threat to groundwater. For example, assuming that the soil is dry with a porosity of 25%, the referenced soil gas concentrations correspond to equivalent soil concentrations of 0.002 mg/kg to 0.006 mg/kg. The OU 1 ROD specified cleanup goals for TCE and PCE in site soils are 0.030 mg/kg and 0.081 mg/kg, respectively.

Petition Enclosure 1: The Construction Completion Report for IR Sites 2 and 3

4. **Comment:** Appendix A of the Construction Completion Report contains surface soil sampling results from Sites 2 and 3. Delineation of PCB-contaminated soil around the perimeter of each Site must be done to levels of less than 1 milligram per kilogram (mg/kg or ppm). This level of delineation appears to be sufficiently achieved for Site 3 and for the eastern and western lot lines of Site 2. Additional surface soil sampling (0-2") should be done at the north fenceline of Site 2 and along the grassy strip immediately south of the access road at the southern part of Site 2. For consistency with the ongoing off-site PCB surface soil investigations along the access road, one surface soil sample should be collected in the grassy strip opposite each of the four residential properties.

Response: As requested, the Navy collected additional surface soil samples from the referenced areas. Please note that the soils were collected in the depth range of generally 0 to 4 inches, consistent with the normal definition of surface soils.

The results are attached, and are summarized as follows.

Grassy Strip along Fence South of Recharge Basins: PCBs were detected in four of four samples at concentrations ranging from 0.45 mg/kg to 1.60 mg/kg. The average PCB concentration of these four samples is 0.80 mg/kg, which is less than the industrial cleanup standard for the site of 10 mg/kg, as well as a residential cleanup standard of 1.0 mg/kg. Note that historically the Navy sampled three of the four residential properties south of the fence as part of a Site 1 investigation and did not find detectable concentrations of PCBs in these properties.

Wooded Area and Ditch North of Former Sludge Drying Beds: PCBs were detected in seven of seven samples at concentrations ranging from 0.132 mg/kg to 1.9 mg/kg. The average concentration of these seven samples is 1.0 mg/kg, which is less than the industrial cleanup standard for the site of 10 mg/kg, as well as a residential cleanup standard of 1.0 mg/kg.

Area North of Northeast Recharge Basin: PCBs were detected in three of three samples at concentrations ranging from 0.077 to 0.17 mg/kg. The average PCB concentration of these four samples is 0.11 mg/kg, which is less than the industrial cleanup standard for the site of 10 mg/kg, as well as a residential cleanup standard of 1.0 mg/kg.

5. **Comment:** The Navy proposes to rely on Grumman's remedial activities at Site 3 as an equivalent implementation of the ROD requirements. While this seems reasonable, DEC should confirm that a ROD amendment is not necessary.

Response: The Navy has determined that an amendment to the Navy's OU 1 ROD is not required.

6. **Comment:** Figure 2-1 of the Completion Report should specify the units for the [apparent] excavation depth values (i.e., clarify if the depths noted are inches or feet). Delineation and endpoint sample results associated with the soil removal should also be included in the Completion Report.

Response: The units on Figure 2-1 are in feet, (i.e. the excavation was conducted to a depth of up to 14 feet below ground surface.)

Delineation and endpoint samples associated with the soil removal have been previously submitted to the NYSDEC in a Report entitled Post-Remedial Action Letter Report for Site 2, Phase 1 dated June 1996. Attached are tables and figures that provide the information requested.

7. **Comment:** The Completion Report would be improved if previous soil testing results for Sites 2 and 3, particularly those from the remedial investigation, were included for reference.

Response: This data was provided to the state in previous submittals. However, the data presented in the Construction Completion Report is more current and extensive than that previous collected. Since 1991, debris in the salvage storage area has been removed and the surface soils scraped. Surface conditions at Site 2 have been reworked from road maintenance, removal of staged soils, and excavation of PCB-contaminated soils.

Petition Enclosure 2: Property Survey for 105-Acre Parcel

8. **Comment:** Information contained in the Environmental Baseline Survey to Transfer, Revison 1 – February 2002 (EBST), particularly on Page 8, suggests that AOC 34 – Former Autoclave Area will be included in the revised boundary definition for IR Site 1. However, the Former Autoclave Area does not appear to be the portion of the Plant 3 building included within the revised property line for the 105-Acre Parcel (compare with Features 35 and 36 on EBST Figure 8). Neither Figure 8 nor the property survey appears to agree with the building liens as depicted in Figure 10 of the EBST.

Response: AOC 34 – Former Autoclave Area was divided into several sub areas. The former autoclave area located within Plant 3 (AOC 34) is not the same as the dry well referenced on Page 8. Only the dry well (AOC 34-07) located outside of Plant 3 has been identified as requiring additional remediation and is therefore being retained by the Navy. The reference to "(including AOC 34 – Former Autoclave Area)" will be deleted.

Petition Enclosure 3: Property Survey for Plant 20 Parcel

Comment: No comments.

Petition Enclosure 4: Final Phase II EBS (Revision I dated May 2002)

9. **Comment:** Inclusion of Tables 9-1 through 9-6, along with the Figures 8A and 9A, is an excellent feature of the EBS and EBST documents. Comparison of the residual contaminant concentrations tabulated in these tables with the pre-remedial concentrations demonstrates that substantial amounts of contaminated soil have been removed from various areas of concern (AOCs) across the site. Because some residual contaminants remain at concentrations in excess of NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives (RSCOs) that could present a potential exposure concern under certain scenarios, deed restrictions will be necessary at the site. These tables and the corresponding maps will provide a useful reference tool for evaluating future proposals for ground-intrusive activities at the site with respect to the need for investigation and/or protective measures.

Response: Comment noted. The Navy would like to thank NYSDEC and NYSDOH for their appreciation of the time and effort that was required for the development of these tables and figures.

10. **Comment:** Figure 9A of the EBST should include hatching at the appropriate locations of IR Sites 2 and 3 (i.e., those locations with residual contaminant concentrations in excess of TAGM 4046 RSCOs). Figure 9A should also identify the "hatching" as is done in Figure 8A.

Response: The Navy agrees. Cross- hatching will be added to Figure 9A and the legend revised, as presented in Figure 8A. A note will also be added to the figure that states that IR Sites 2 and 3 contain residual chemical concentrations in excess of TAGM 4046 criteria.

11. **Comment:** The Phase I EBS identified a ditch within the wooded area at the northeastern perimeter of the 105-acre parcel. This ditch apparently connected a landfill area north of the site to a landfill area east of the site. According to the Phase II EBS (Page 3-50), soil samples from the ditch were tested for metals. Given recent information about PCB-contamination of soil associated with former fill areas in the vicinity of Plant 3, surface soil samples should be collected from the ditch and tested for PCBs. This testing could be done in conjunction with that recommended in Comment 4 above.

Response: The Navy is not aware of a landfill area identified to the north of the site. Rather the ditch was investigated for metal contamination because of potential lead migration from a former skeet range that was historically located in the area.

However, the Navy did recognize a need to sample the ditch north of IR Site 2 for PCBs in order to ensure that the area within the fenced portion of Site 2 that was excavated for PCBs to a concetration of 10 mg/kg was completed. Therefore, as requested, the Navy collected several samples to the north of IR Site 2, including a sample from this ditch. PCBs were detected in the ditch at a concentration of 1.4 mg/kg which is below the industrial cleanup standard of 10 mg/kg specified in the Navy's OU 1 ROD. . Therefore, the Navy is satisfied that the remedial action to remove PCB-contaminated soils from IR Site 2 is complete as previously stated in the Navy's June 1996 Post Remedial Action Letter Report. Also, the concentration of PCBs detected within this ditch were similar to concentrations found in the surrounding upland soil samples (0.95 to 1.9 mg/kg), suggesting that the ditch does not represent a separate pathway for contaminant migration.

12. **Comment:** Re: Statements in the Phase II EBS and the October 2, 2002 Navy Response to NYSDEC Comments Regarding the Draft Phase II EBS Report for the NWIRP

TAGM 4046 does not include a RSCO of 10 ppm for carcinogenic PAHs (cPAHs). Other factors, such an benzo(a)pyrene equivalents and local background concentrations of cPAHs, must be considered when selecting appropriate cleanup objectives. For this

reason, and based upon a review of post-remedial analytical data, deed restrictions (as are proposed) will be necessary for several locations at the 105-acre parcel.

If residual contaminant levels exceed RSCOs, the inability to leach (e.g. no TCLP failures) to groundwater does not mean deed restrictions can be waived. Potential exposure routes other than using contaminated groundwater may be present now or in the future, thereby requiring implementation of appropriate deed restrictions (similar to that proposed). In the case of VOCs, elevated levels of subsurface contaminants could also lead to exposure via subsurface vapor migration into overlying or nearby structures. This latter issue should be addressed pursuant to comments 2 and 3 above.

Response: The Navy agrees. All areas on the NWIRP that have been identified as having contaminant levels in excess of RSCOs have been indicated as such.

Re: Finding of Suitability to Transfer (FOST) – 105-Acre Parcel, Revision dated February 2002

13. **Comment:** Paragraph 3 of the Environmental Covenants, Conditions, Reservations and Restrictions (ECCRRs, also commonly referred to as "deep restrictions"), Enclosure 2 of the FOST, should have a statement, second to last sentence, similar to the following:

"Said activities shall also be performed with necessary precautions, including appropriate monitoring and controls, to ensure that these are done in a manner protective of public health and environment."

Response: The Navy agrees. The requested language will be added to the FOST.

14. **Comment:** The reference to NYSDEC TAGM 4046 levels should describe these as Recommended Soil Cleanup Objectives. Paragraph 7 of the ECCRRs should clarify which party prepares the written permission for excavation. Paragraph 7 should also clarify if only contaminated soil that is excavated must be disposed of off-site, or all soil (contaminated and non-contaminated alike) that is excavated.

Response: The text will be revised from "NYSDEC TAGM 4046 State Cleanup Guidance Standards" to "NYSDEC TAGM 4046 Recommended Soil Cleanup Objectives".

The text will be clarified as follows.

"In addition, the GRANTEE must prepare and submit a request that is to be reviewed and approved by the NYSDEC and NYSDOH before excavating or otherwise disturbing subsurface soils. "

"Any contaminated soils that are excavated from the 105-Acre Parcel must be properly disposed at appropriate off-site locations.

15. **Comment:** The ECCRRs must require future owners to annually certify to NYSDEC that:

Protective covers and any other engineering controls associated with site remedies and correction actions have been maintained; and

The conditions at the site are fully protective of public health and the environment in accordance with specifications of the 1995 ROD, the FOST, the EBST, SEQRA Findings, and any other remedial decision documents, as appropriate.

Response: The cover atop IR Site 2 was only added as an additional factor of safety over residual chemicals that were to remain on-site. Just as the floor of Plant 3 acts as an additional safety barrier to residual chemicals that remain beneath Plant 3. For Plant 3, as well as Site 2, it is not the Navy's intention to preclude future occupants from re-working these areas as part of beneficial re-development. Rather, it was the Navy's intention to alert future occupants who may want to disturb soils in these areas to the presence of residual compounds, their location, and their concentrations and to also remind them to take the necessary precautions when working with these soils and to inform the NYSDEC of their plans prior to disturbing soils in these areas.

Therefore, the Navy will not mandate that future occupants must maintain the various barriers that exist over areas where residual compounds remain.

Further, if a remedial action taken by the Navy would result in the restricted use of an area, it would be the Navy, and not the future property owner, who would have to make the above certifications to the NYSDEC.

16. **Comment:** The ECCRRs should include a clause that allows the owner, with agency approval, to remove certain conditions and restrictions in the event that additional remediation done in the future renders the restrictions no longer necessary.

Response: Future occupants of former Navy property can always petition the Navy to remove a land use restriction in the event that additional remediation is completed that renders the restriction no longer necessary. Language to this effect is not normally included in the Navy's deeds of transfer but can be added as requested.

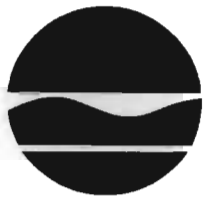
Please note that the Department of Navy is the real estate agent for conveyance of former Navy property, therefore, it must be the Department of Navy that grants final approval regarding any petition to modify the deed of transfer. Please be assured that the Navy's approval will not be granted without consultation with NYSDEC and NYSDOH to insure that any proposed actions conducted by future occupants remains protective of human health and the environment.

Re: Finding of Suitability to Transfer (FOST) – Plant 20, June 2002

Comment: Nassau County Department of Health should be consulted to determine if the revised FOST – Plant 20 satisfactorily addresses the concerns raised in their letter dated March 20, 2002.

Response: No additional comments were submitted to the Navy from Nassau County Department of Health regarding the latest version of the Plant 20 FOST. However, in a recent meeting of the Nassau County's legislative body, the Nassau County legislators voted unanimously to accept the Navy's Plant 20 Parcel and the Navy's Plant 5 building. Accordingly, the Navy has turned over the quickclaim deeds for these two areas to Nassau County.

New York State Department of Environmental Conservation
50 Wolf Road, Albany, New York 12233-7010



John P. Cahill
Commissioner

October 23, 1997

Mr. James L. Colter
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway, MSC #82
Lester, PA 19113-2090

Re: Naval Weapons Industrial Reserve Plant - Bethpage, NY (DEC Site #130003B)
Design Analysis Report for Air Sparging/Soil Vapor Extraction System

Dear Mr. Colter:

The NYSDEC has reviewed the above-referenced document and has the following comments. Generally, the DEC concurs with the design parameters established in the report, specifically the number of extraction, injection and monitoring wells and their spacing, and the sizing and specification for transmission piping and process equipment.

1. The DEC's experience is that SVE systems can be operated through the winter, even upstate, with above-ground transmission piping. The Navy should consider operating the SVE system, without the air sparging component, throughout the year. Because remediation of groundwater impacts is a secondary goal of this system, full-time SVE operation could potentially accelerate overall completion of the project.

2. The Preliminary Remediation Goals (PRGs) listed in the document are well below the soil cleanup guidelines which the DEC considers for remediation projects. The ROD modified action levels of three times the PRGs are also below these cleanup guidelines. While achieving these goals would represent a higher degree of contaminant removal, the feasibility of achieving them in a reasonable timeframe is questionable. Because groundwater impacts from this area will be addressed in the off-site remedy, and because completion of the SVE/AS process is a prerequisite to beginning the removal of PCB-contaminated soils, extended operation of the system to achieve the PRGs may not be desirable. This issue may need to be discussed further as the performance of the system is evaluated.

3. The NYSDEC is concerned that the cesspools, a likely source of the VOC contamination, may interfere with the performance of the SVE system, either by short-circuiting subsurface airflow or by creating a barrier to it. The Design Analysis Report references the July 1997 Interim Results letter report, which concludes that the cesspool structures do not appear to restrict air flow through the system. However, the Interim Results letter does not present any

discussion or justification of this conclusion. Only one sentence on page 20 reiterates the conclusion. Please provide a narrative evaluation of the data used to justify this statement.

4. The NYSDEC confirms the statement on page 25 that an air discharge permit is not required, but that an application form and associated information will be necessary. The report correctly states that "Air Guide 1 provides a range of air modeling procedures to correlate stack emissions with ground level concentrations", but does not indicate whether this will be performed. The use of vapor-phase carbon is a Best Available Control Technology, and so a modelling analysis of emissions from the system is not required. If the Navy elects to construct a model for this analysis, the work should begin soon to avoid delays in obtaining approval. Note that in the table presented on page 25, the AGCs for Trichloroethene and Tetrachloroethene should be 0.45 ug/m^3 and 1.2 ug/m^3, respectively.

   The operating criterion listed on page 20 (#3), states that the carbon will be changed if VOC levels exceed Air Guide 1 criteria in the exhaust stack. Although the text does not indicate whether the Short Term Guideline Concentrations (SGCs) or Annual Guideline Concentrations (AGCs) would be used for this determination, this approach may be overly conservative and difficult to implement. The (AGCs) listed in Air Guide 1 are relevant to ambient levels of exposure, not source concentrations. The AGCs may also be difficult to detect by laboratory analysis for certain compounds. To avoid confusion, specific levels indicative of breakthrough should be developed for changing out the carbon.

5. The proposed groundwater remediation goals listed in Section 2.6 (pg 23) are acceptable only because groundwater impacts are being addressed in the remedy for Operable Unit #2. The proposed goals would not be acceptable if the off-site remedy does not intercept contamination migration from this source area. Also, a third option to consider if VOC removal is ineffective (pg 24) is to operate the SVE/AS system in cyclical mode. This would involve shutting down the system and monitoring rebound concentrations to evaluate desorbtion equilibrium and kinetics, then re-starting the system. In this way, a more informed re-evaluation of achieving the PRGs could be performed.

For the DEC's purposes, these comments may be addressed in a letter response, and there is no need to revise the Design Analysis Report. Please call me at (518) 457-3395 if you have any questions about these comments.

Sincerely,

George W. Heitzman, P.E.
Senior Environmental Engineer
Division of Environmental Remediation

LETTER REPORT
SUPPLEMENTAL SURFACE SOIL SAMPLE RESULTS
NWIRP BETHPAGE, NEW YORK

INTRODUCTION

This letter report summarizes collection methods and analytical results for surface soil samples taken in October 2002 from Naval Weapons Industrial Reserve Plant (NWIRP) Bethpage. The samples were collected at the request of the New York State Department of Health to provide supplemental information on the quality of surface soils beyond the boundary of Installation Restoration Site 2 – Recharge Basin Area (Site 2). Even though the samples were collected beyond Site 2, the samples are located on the NWIRP Bethpage site. Tetra Tech NUS, Inc. (TtNUS) performed the work under contract to the U.S. Navy Engineering Field Activity Northeast (EFA Northeast) under Contract Task Order (CTO) 812 of the Comprehensive Long-Term Environmental Action Navy (CLEAN) Contract Number N62467-94-D-0888. Severn Trent Laboratories, Inc. (STL) of Pittsburgh, Pennsylvania performed the analytical testing on the surface soil samples under contract to TtNUS.

SCOPE OF WORK

A total of 14 surface soil samples, plus 2 duplicate samples were taken at locations as shown on Figure 1. Samples (BP-S2-267 through BP-S2-280) were taken in October 2002. Other analytical results presented in Figure 1 are from samples collected in early 2001, prior to the placement of the permeable cover. The cover, as indicated in Figure 1, was completed in December 2001.

SOIL SAMPLING

The surface soil samples were taken in accordance with Tetra Tech NUS, Inc. Standard Operating Procedure SA 1.3. The surface soil samples were collected using a disposable trowel. The depths of the samples ranged from approximately 0 to 6-inches. Actual depths for each sample are provided on the sample logs sheets and on Table 1. Prior to collecting the samples, all vegetation, roots, and twigs, etc. were removed to expose an adequate soil surface area to accommodate sample volume requirements. After exposing the sample area the soil was thoroughly mixed in-situ and then transferred to the sample containers. Each sample was labeled

and put on ice until shipment to the laboratory. Soil sample log sheets for the soil samples collected have been provided and are attached to this letter report.

FIELD FORMS AND ANALYTICAL RESULTS

The field forms and results associated with the surface soil samples are attached and include the following:

- Soil and sediment sample log sheet
- Chain of custody records
- Analytical results
- Validation reports
- Photographs

PCBs were detected in all 14 samples, at concentrations ranging from 76 ug/kg to 1,900 ug/kg.

TABLE 1

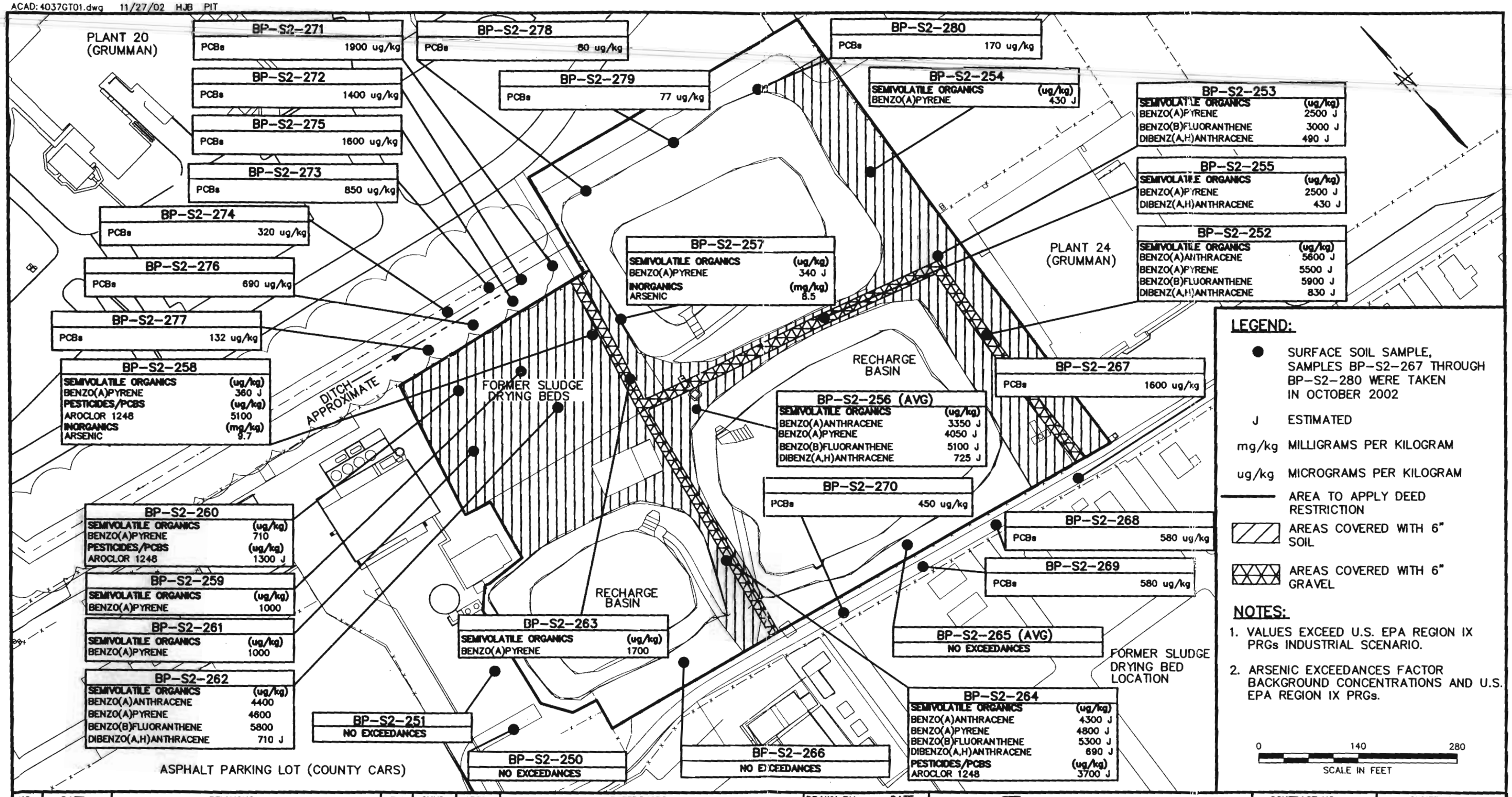
SUPPLEMENTAL SURFACE SOIL SAMPLE RESULTS
POLYCHLORINATED BIPHENYLS
NAVAL WEAPONS INDUSTRIAL RESERVE PLANT
BETHPAGE, NEW YORK

Sample ID	Depth (bgs) in inches	Total PCBs (ug/kg)	Comments
BP-S2-267	1-5	1600	Grass strip between fence and roadway
BP-S2-DUP1	1-5	1600	Duplicate of BP-S2-267
BP-S2-268	1-5	580	Grass strip between fence and roadway
BP-S2-269	1-4	580	Grass strip between fence and roadway
BP-S2-270	1-4	450	Grass strip between fence and roadway
BP-S2-271	1-4	1900	Mowed area between gate and road
BP-S2-272	1-5	1400	Eastern edge of ditch
BP-S2-273	1-4	850	Wooded area approximately 11 feet north of ditch
BP-S2-274	1-5	320	Wooded area approximately 15 feet north of ditch
BP-S2-275	1-5	1600	Brush area between fence and ditch
BP-S2-276	1-4	690	Brush area between fence and ditch
BP-S2-277	1-4	132	Brush area between fence and ditch
BP-S2-278	1-5	80	Upland area between basin and fence
BP-S2-279	1-4	77	Upland area between basin and fence
BP-S2-DUP2	1-4	76	Duplicate of BP-S2-279
BP-S2-280	1-5	170	Upland area between basin and fence

Notes: bgs: Below ground surface
Samples were collected from October 7 through October 10, 2002
See Figure 1 for approximate locations

BP0211PCBDATA, 12-9-02

ACAD: 4037GT01.dwg 11/27/02 HJB PIT



NO.	DATE	REVISIONS	BY	CHKD	APPD	REFERENCES

DRAWN BY HJB DATE 11/26/02
CHECKED BY DATE
COST/SCHED-AREA
SCALE AS NOTED

Tetra Tech NUS, Inc.

SUPPLEMENTAL PCB SAMPLING
SITE 2 - RECHARGE BASIN AREA
CONSTRUCTION COMPLETION REPORT
NWIRP BETHPAGE
BETHPAGE, NEW YORK

CONTRACT NO. 4037 | OWNER NO. ---
APPROVED BY DATE
APPROVED BY DATE
DRAWING NO. FIGURE 1 | REV. 0

FORM CADD NO. TtNUS_BH.DGN - REV 0 - 1/20/98

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-267
Sample Location: 267
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-7-02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1230	0-6"	GRAY BRN	SILTY SAND, TR ROOTS TR. GRAVEL - DAMP
Method: DISP. TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

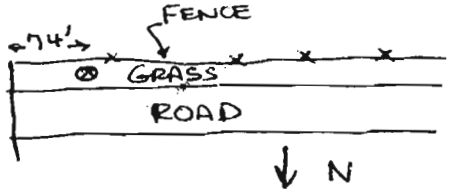
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOC's~~ PCB's	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH ≈ 1 → 5"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:
	BP-S2-DUP1

Signature(s):

SJ Conti

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-268
Sample Location: S68
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date:	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Date: 10/7/02	0-6"	GRAY BRN.	SILTY SAND - TR ROOTS & GRAVEL
Time: 1250			DAMP
Method: DISP TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

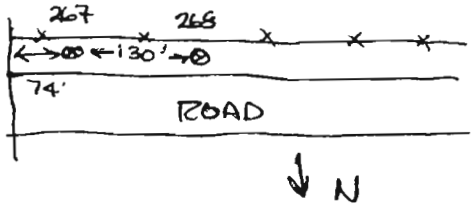
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCBs	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1-5"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): SJ Conti

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-269
Sample Location: 269
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-7-02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1315	0-4"	GRAY BRN	SILTY SAND - TR ROOTS TR GRAVEL DAMP
Method: DISP TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

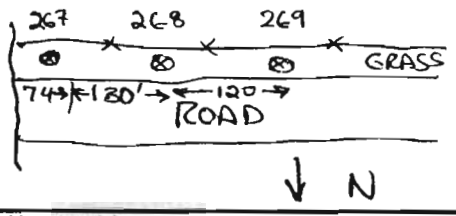
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCBS	4°C	1-4oz Glass Jar	V	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1"-4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): SJ Conti

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-270
Sample Location: 270'
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-07-02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1340	0-6"	BRN	SILTY SAND - SOME GRAVEL TR- ROOTS DAMP
Method: DISP TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

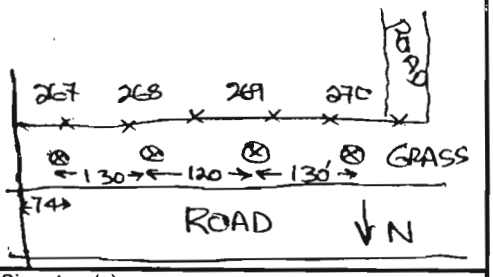
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOC's~~ PCB's	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1 - 4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SJ Conte

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-271
Sample Location: 271
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-8-02 / Time: 1000 / Method: DISP TROWEL / Monitor Reading (ppm): 0	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
	0-6"	BRN	SILTY SAND - SOME GRAVEL TR ROOTS DAMP

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

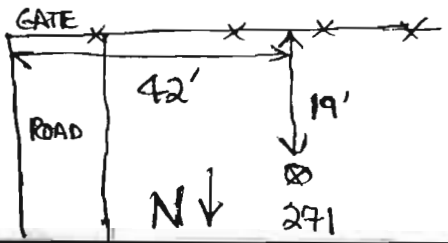
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOC's~~ PCBS	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH - 1" - 4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Sj Conti

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Sample ID No.: BP-S2-272
Sample Location: 272
Sampled By: SJC
C.O.C. No.: BP-S2-100702

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10-8-02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1020	0-6"	BRN	SILTY SAND - TR ROOTS TR GRAVEL DAMP
Method: DISP TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

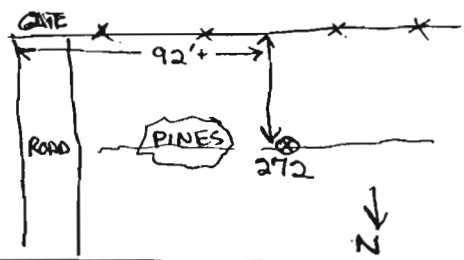
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCBs	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1" - 5"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s): SJConte

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-273
Sample Location: 273
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date:	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1150	0-6"	BRN	SANDY SILT - TR GRAVEL, TR ROOTS, DAMP
Method: DISP TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

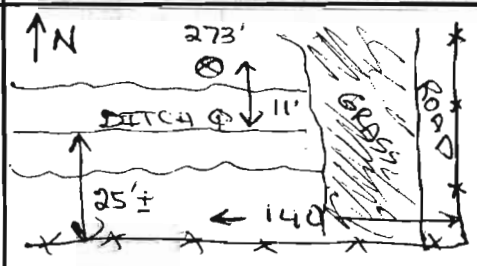
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOC's~~ PCB's	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1" ⇒ 4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SJ Conte

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-274
Sample Location: 274
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date:	Time:	Method:	Monitor Reading (ppm):	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/8/02	1140	DISP TROWEL	0	0-6"	BRN	SANDY SILT - TR ROOTS GRAVEL DAMP

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

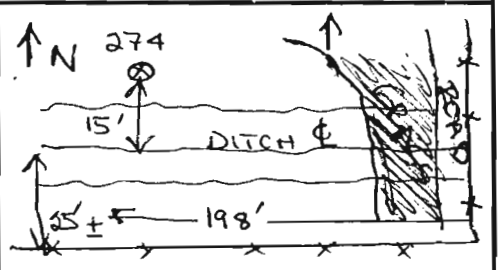
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCBs	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1" → 5"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SJ Conti

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-275
Sample Location: 275
Sampled By: STC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/8/02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1035	0-6"	BRN	SAND - SOME GRAVEL - TR ROOTS
Method: DISP TROWEL			DAMP
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

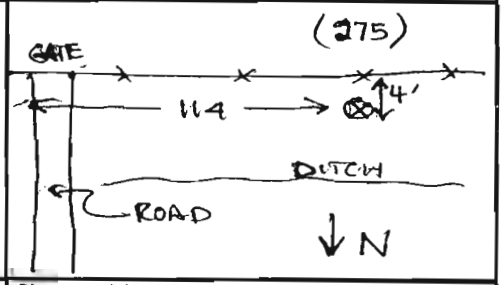
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOC's~~ PCB's	4°C	1-4oz Glass Jar	V	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH — 1" → 5"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-276
Sample Location: 276
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date:	Time:	Method:	Monitor Reading (ppm):	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
10/8/02	1045	DISP TROWEL	0	0-6"	BRN	SILTY SAND - TR GRAVEL TR ROOTS DAMP

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

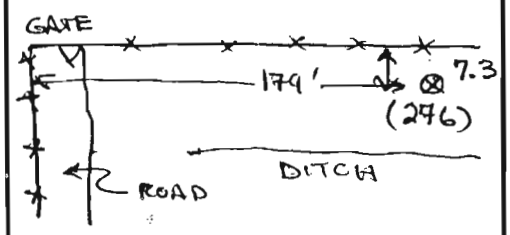
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCBs	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1" → 4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SJConte

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-277
Sample Location: 277
Sampled By: SJC
C.O.C. No.: BP-S2-100702

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/8/02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1100	0-6"	BRN	SILTY SAND - GRAVEL - ROOTS DAMP
Method: DISP - TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

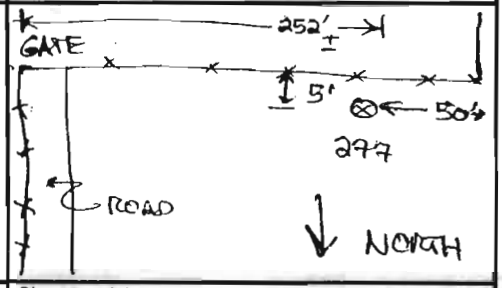
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCB's	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1" → 4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SJ Conte

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-278
Sample Location: 278
Sampled By: SJC
C.O.C. No.: BP-S2-101002

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1010	0-6"	YELLOW BRN	SAND AND GRAVEL TR ROOTS DAMP
Method: DISP TROWEL.			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

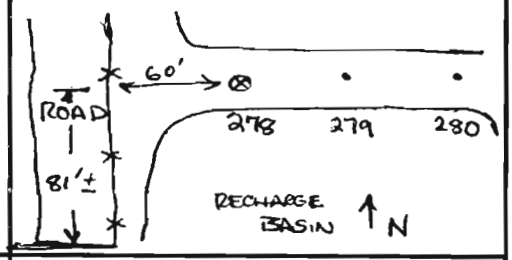
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOC's~~ PCBs	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1" → 5"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SJ Conte

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-279
Sample Location: 279
Sampled By: SJC
C.O.C. No.: BP-S2-101002

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1020	0-6"	YELLOW BRN	SAND AND GRAVEL – TR ROOTS DAMP
Method: DISP TROWELL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

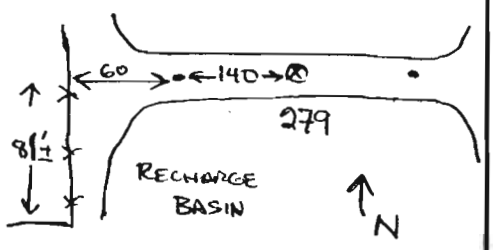
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCBs	4°C	1-4oz Glass Jar	✓	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

– TOOK DUP HERE ALSO
– ACTUAL DEPTH 1"-4"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.: BP-S2-DUP2

Signature(s): SJ Conti

Tetra Tech NUS, Inc.

SOIL & SEDIMENT SAMPLE LOG SHEET

Project Site Name: NWIRP Bethpage
Project No.: N4037

Sample ID No.: BP-S2-280
Sample Location: 280
Sampled By: SJC
C.O.C. No.: BP-S2-101002

[X] Surface Soil
[ ] Subsurface Soil
[ ] Sediment
[ ] Other:
[ ] QA Sample Type:

Type of Sample:
[X] Low Concentration
[ ] High Concentration

GRAB SAMPLE DATA:

Date: 10/10/02	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Time: 1030	0-6"	BRN	SANDY SILT/SILTY F SAND TR ROOTS & GRAVEL DAMP
Method: DISP TROWEL			
Monitor Reading (ppm): 0			

COMPOSITE SAMPLE DATA:

Date:	Time	Depth	Color	Description (Sand, Silt, Clay, Moisture, etc.)
Method:				
Monitor Readings (Range in ppm):				

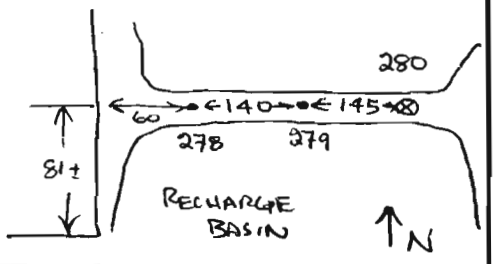
SAMPLE COLLECTION INFORMATION:

Analysis	Preservative	Container Requirements	Collected	Other
~~VOCs~~ PCBs	4°C	1-4oz Glass Jar	V	
VOC's +Extra	4°C	1-8oz Glass Jar	NO	
TCLP, Cadmium, Chrome, Total Solids	4°C	1-8oz Glass Jar	NO	

OBSERVATIONS / NOTES:

ACTUAL DEPTH 1" ⇒ 5"

MAP:



Circle if Applicable:

MS/MSD	Duplicate ID No.:

Signature(s):

SJConta

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER BP-S2-100702 | PAGE 1 OF 1

PROJECT NO:	SITE NAME:	PROJECT MANAGER AND PHONE NUMBER	LABORATORY NAME AND CONTACT:
N4037	NWIRP-BETHPAGE	D. BRAYACK 412 921 8375	STL LAB / VERONICA B.
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER AND PHONE NUMBER	ADDRESS
S Conti		S CONTI 412 921 8422	450 WILLIAM PITT WAY
		CARRIER/WAYBILL NUMBER	CITY, STATE
		FED EX AB# 831673329489	PITTSBURGH, PA 15238

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2002	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS: PCBs (4 OZ GLASS) 4°C							COMMENTS
								G							
10/7	1230	BP-S2-267	SOIL	G	2	2									DO MS/MSD
10/7	0000	BP-S2-DUP1	"	"	1	1									DUP OF 267
10/7	1250	BP-S2-268	"	"	1	1									
10/7	1315	BP-S2-269	"	"	1	1									
10/7	1340	BP-S2-270	"	"	1	1									
10/8	1000	BP-S2-271	"	"	1	1									
10/8	1020	BP-S2-272	"	"	1	1									
10/8	1035	BP-S2-275	"	"	1	1									
10/8	1045	BP-S2-276	"	"	1	1									
10/8	1100	BP-S2-277	"	"	1	1									
10/8	1140	BP-S2-274	"	"	1	1									
10/8	1150	BP-S2-273	"	"	1	1									

1. RELINQUISHED BY S Conti	DATE 10/8/02	TIME 1600	1. RECEIVED BY FED EX.	DATE	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS: SURFACE SOIL SAMPLES

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

3/99
FORM NO. TtNUS-001

TETRA TECH NUS, INC. CHAIN OF CUSTODY | NUMBER BP-S2-101002 | PAGE 1 OF 1

PROJECT NO:	SITE NAME:	PROJECT MANAGER AND PHONE NUMBER	LABORATORY NAME AND CONTACT:
N4037	NWIRP- BETHPAGE	D. BRAYACK 412 921 8375	STL LAB - VERONICA B.
SAMPLERS (SIGNATURE)		FIELD OPERATIONS LEADER AND PHONE NUMBER	ADDRESS
S Conti		S CONTI 412 921 8422	450 WILLIAM PITT WAY
		CARRIER/WAYBILL NUMBER	CITY, STATE
		FED EX # 8316 7332 9478	PITTSBURGH PA 15238

STANDARD TAT ☐
RUSH TAT ☐
☐ 24 hr. ☐ 48 hr. ☐ 72 hr. ☐ 7 day ☐ 14 day

DATE YEAR 2002	TIME	SAMPLE ID	MATRIX	GRAB (G) COMP (C)	No. OF CONTAINERS	CONTAINER TYPE PLASTIC (P) or GLASS (G)	PRESERVATIVE USED	TYPE OF ANALYSIS PCBS (4 oz GLASS)								COMMENTS
						G	4°C									
10/10	1010	BP-S2-278	SOIL	G	1	1										
10/10	0000	BP-S2-DUP2	"	"	1	1										DUP OF 279
10/10	1020	BP-S2-279	"	"	1	1										
10/10	1030	BP-S2-280	"	"	1	1										

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1. RELINQUISHED BY S Conti	DATE 10/10/02	TIME 1600	1. RECEIVED BY FED EX.	DATE 10/10/02	TIME
2. RELINQUISHED BY	DATE	TIME	2. RECEIVED BY	DATE	TIME
3. RELINQUISHED BY	DATE	TIME	3. RECEIVED BY	DATE	TIME

COMMENTS 3 ADDL. SURFACE SOIL SAMPLES

DISTRIBUTION: WHITE (ACCOMPANIES SAMPLE) YELLOW (FIELD COPY) PINK (FILE COPY)

3/99
FORM NO. TINUS-001

PROJ_NO: 4037

SDG: 90197 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	BP-S2-267	nsample	BP-S2-268	nsample	BP-S2-269
samp_date	10/7/2002	samp_date	10/7/2002	samp_date	10/7/2002
lab_id	C2J090197001	lab_id	C2J090197003	lab_id	C2J090197004
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	92.1	Pct_Solids	95.2	Pct_Solids	92
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	140	U	
AROCLOR-1221	140	U	
AROCLOR-1232	140	U	
AROCLOR-1242	140	U	
AROCLOR-1248	1600		
AROCLOR-1254	140	U	
AROCLOR-1260	140	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	580		
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	580		
AROCLOR-1254	36	U	
AROCLOR-1260	36	U	

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PROJ_NO: 4037

SDG: 90197 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	BP-S2-270
samp_date	10/7/2002
lab_id	C2J090197005
qc_type	NM
units	UG/KG
Pct_Solids	94.2
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	450		
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

nsample	BP-S2-271
samp_date	10/8/2002
lab_id	C2J090197006
qc_type	NM
units	UG/KG
Pct_Solids	92.8
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	140	U	
AROCLOR-1221	140	U	
AROCLOR-1232	140	U	
AROCLOR-1242	140	U	
AROCLOR-1248	1900		
AROCLOR-1254	140	U	
AROCLOR-1260	140	U	

nsample	BP-S2-272
samp_date	10/8/2002
lab_id	C2J090197007
qc_type	NM
units	UG/KG
Pct_Solids	83
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	40	U	
AROCLOR-1221	40	U	
AROCLOR-1232	40	U	
AROCLOR-1242	40	U	
AROCLOR-1248	1400		
AROCLOR-1254	40	U	
AROCLOR-1260	40	U	

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PROJ_NO: 4037

SDG: 90197 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	BP-S2-273
samp_date	10/8/2002
lab_id	C2J090197012
qc_type	NM
units	UG/KG
Pct_Solids	91.1
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	36	U	
AROCLOR-1221	36	U	
AROCLOR-1232	36	U	
AROCLOR-1242	36	U	
AROCLOR-1248	450		
AROCLOR-1254	400		
AROCLOR-1260	36	U	

nsample	BP-S2-274
samp_date	10/8/2002
lab_id	C2J090197011
qc_type	NM
units	UG/KG
Pct_Solids	86
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	38	U	
AROCLOR-1221	38	U	
AROCLOR-1232	38	U	
AROCLOR-1242	38	U	
AROCLOR-1248	170		
AROCLOR-1254	150		
AROCLOR-1260	38	U	

nsample	BP-S2-275
samp_date	10/8/2002
lab_id	C2J090197008
qc_type	NM
units	UG/KG
Pct_Solids	96.5
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	140	U	
AROCLOR-1221	140	U	
AROCLOR-1232	140	U	
AROCLOR-1242	140	U	
AROCLOR-1248	1600		
AROCLOR-1254	140	U	
AROCLOR-1260	140	U	

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PROJ_NO: 4037

SDG: 90197 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	BP-S2-276
samp_date	10/8/2002
lab_id	C2J090197009
qc_type	NM
units	UG/KG
Pct_Solids	94.9
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	500		
AROCLOR-1254	190		
AROCLOR-1260	35	U	

nsample	BP-S2-277
samp_date	10/8/2002
lab_id	C2J090197010
qc_type	NM
units	UG/KG
Pct_Solids	90.2
DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	37	U	
AROCLOR-1221	37	U	
AROCLOR-1232	37	U	
AROCLOR-1242	37	U	
AROCLOR-1248	79		
AROCLOR-1254	53		
AROCLOR-1260	37	U	

nsample	BP-S2-DUP1
samp_date	10/7/2002
lab_id	C2J090197002
qc_type	NM
units	UG/KG
Pct_Solids	91.7
DUP_OF:	BP-S2-267

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	140	U	
AROCLOR-1221	140	U	
AROCLOR-1232	140	U	
AROCLOR-1242	140	U	
AROCLOR-1248	1600		
AROCLOR-1254	140	U	
AROCLOR-1260	140	U	

A-20

PROJ_NO: 4037

SDG: 110289 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	BP-S2-278	nsample	BP-S2-279	nsample	BP-S2-280
samp_date	10/10/2002	samp_date	10/10/2002	samp_date	10/10/2002
lab_id	C2J110289001	lab_id	C2J110289003	lab_id	C2J110289004
qc_type	NM	qc_type	NM	qc_type	NM
units	UG/KG	units	UG/KG	units	UG/KG
Pct_Solids	99.3	Pct_Solids	99.2	Pct_Solids	95
DUP_OF:		DUP_OF:		DUP_OF:	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	33	U	
AROCLOR-1221	33	U	
AROCLOR-1232	33	U	
AROCLOR-1242	33	U	
AROCLOR-1248	39		
AROCLOR-1254	27	J	P
AROCLOR-1260	14	J	P

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	33	U	
AROCLOR-1221	33	U	
AROCLOR-1232	33	U	
AROCLOR-1242	33	U	
AROCLOR-1248	77		
AROCLOR-1254	33	U	
AROCLOR-1260	33	U	

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	35	U	
AROCLOR-1221	35	U	
AROCLOR-1232	35	U	
AROCLOR-1242	35	U	
AROCLOR-1248	170		
AROCLOR-1254	35	U	
AROCLOR-1260	35	U	

A-21

PROJ_NO: 4037

SDG: 110289 MEDIA: SOIL DATA FRACTION: PEST/PCB

nsample	BP-S2-DUP2
samp_date	10/10/2002
lab_id	C2J110289002
qc_type	NM
units	UG/KG
Pct_Solids	99.3
DUP_OF:	BP-S2-279

Parameter	Result	Val Qual	Qual Code
AROCLOR-1016	33	U	
AROCLOR-1221	33	U	
AROCLOR-1232	33	U	
AROCLOR-1242	33	U	
AROCLOR-1248	76		
AROCLOR-1254	33	U	
AROCLOR-1260	33	U	

A-22

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO: **D. BRAYACK** **DATE:** **NOVEMBER 4, 2002**

FROM: **BERNARD F SPADA III** **COPIES:** **DV FILE**

SUBJECT: **ORGANIC DATA VALIDATION- PCB**
CTO 812, NWIRP BETHPAGE
SDG 90197

SAMPLES: 12/Soil

BP-S2-267	BP-S2-268	BP-S2-269	BP-S2-270
BP-S2-271	BP-S2-272	BP-S2-273	BP-S2-274
BP-S2-275	BP-S2-276	BP-S2-277	BP-S2-DUP1

OVERVIEW

The sample set for CTO 812, NWIRP Bethpage, SDG 90197 consists of eleven (11) environmental soil samples and one (1) field duplicate. All samples were analyzed for polychlorinated biphenyls (PCB). The field duplicate pair included in this SDG was BP-S2-DUP1 and BP-S2-267.

The samples were collected by Tetra Tech NUS on October 7 and 8, 2002 and analyzed by Severn Trent Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Method 8082 analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

	• Data completeness
*	• Holding times
*	• Initial and continuing calibration
*	• Blank results
*	• Surrogate spike recoveries
*	• Internal standard recoveries
*	• Blank Spike/Blank Spike Duplicate Results
*	• Matrix Spike/Matrix Spike Duplicate Results
*	• Field Duplicate Results
	• Detection Limits
*	• Compound Quantitation
*	• Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PCB

Samples BP-S2-267, BP-S2-271, BP-S2-275, and BP-S2-DUP1 were analyzed at dilutions and were not analyzed undiluted. This accounts for the elevated reporting limits for all non-detected analytes in the aforementioned samples.

The recovery of the surrogate decachlorobiphenyl was 0% in sample BP-S2-275. No qualifications were made on this basis because the sample was analyzed at a 4X dilution.

The matrix spike duplicate of sample BP-S2-267 exceeded the percent recovery quality control criteria for Aroclor 1016. No qualifications were made on this basis because all results for Aroclor 1016 were non-detected.

A second column confirmation was not performed for PCB results. The validator verified the pattern for PCB 1248 in sample BP-S2-267.

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines. The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Tetra Tech NUS
Bernard F. Spada III
Chemist/Data Validator

TetraTech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

Tetra Tech NUS **INTERNAL CORRESPONDENCE**

TO:	**D. BRAYACK**	**DATE:**	**NOVEMBER 1, 2002**
FROM:	**BERNARD F SPADA III**	**COPIES:**	**DV FILE**
SUBJECT:	**ORGANIC DATA VALIDATION- PCB CTO 812, NWIRP BETHPAGE SDG 110289**		
SAMPLES:	4/Soil		

BP-S2-278 BP-S2-279 BP-S2-280 BP-S2-DUP2

OVERVIEW

The sample set for CTO 812, NWIRP Bethpage, SDG 110289 consists of three (3) environmental soil samples and one (1) field duplicate. All samples were analyzed for polychlorinated biphenyls (PCB). The field duplicate pair included in this SDG was BP-S2-DUP2 and BP-S2-279.

The samples were collected by Tetra Tech NUS on October 10, 2002 and analyzed by Severn Trent Laboratories. All analyses were conducted in accordance with Naval Facilities Engineering Service Center (NFESC) Quality Assurance/Quality Control (QA/QC) criteria using SW-846 Method 8082 analytical and reporting protocols. The data contained in this SDG were validated with regard to the following parameters:

* • Data completeness
* • Holding times
* • Initial and continuing calibration
* • Blank results
* • Surrogate spike recoveries
* • Internal standard recoveries
* • Blank Spike/Blank Spike Duplicate Results
* • Matrix Spike/Matrix Spike Duplicate Results
* • Field Duplicate Results
* • Detection Limits
* • Compound Quantitation
* • Compound Identification

The symbol (*) indicates that all quality control criteria were met for this parameter. Problems affecting data quality are discussed below; documentation supporting these findings is presented in Appendix C. Qualified Analytical results are presented in Appendix A. Results as reported by the laboratory are presented in Appendix B.

PCB

Positive results below the reporting limit were qualified as estimated (J) due to uncertainty near the detection limit.

EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the EPA Functional Guidelines for Organic Data Validation (10/99) and the NFESC guidelines. The text of this report has been formulated to address only those problem areas affecting data quality.

"I attest that the data referenced herein were validated according to the agreed upon validation criteria as specified in the NFESC guidelines and the Quality Assurance Project Plan (QAPP)."

Bernard F Spada III

Tetra Tech NUS
Bernard F. Spada III
Chemist/Data Validator

Tetra Tech NUS
Joseph A. Samchuck
Data Validation Quality Assurance Officer

Attachments:

1. Appendix A - Qualified Analytical Results
2. Appendix B - Results as Reported by the Laboratory
3. Appendix C - Support Documentation

NWIRP BETHPAGE
PCB SOIL SAMPLES
PHOTO LOG

Looking NE along grass strip at BP-S2-267

Looking NE along grass strip at BP-S2-269, other locations toward top of photo

Looking NE along grass strip at BP-S2-270

SE at sample location BP-S2-270

Looking NW along fence line near location BP-S2-275

Looking NW at location BP-S2-271

Looking SW at ditch running between the fence line and wooded area. Note pine brush pile in foreground

Looking N at berm north of recharge basin. Samples BP-S2-278 through 280 were taken here

Looking N at location BP-S2-278