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FINAL RESOURCE CONSERVATION AND RECOVERY ACT PARTIAL CLOSURE REPORT FOR BUILDING 54 WITH TRANSMITTAL LETTER NAS BRUNSWICK ME

1/21/2011

NAS BRUNSWICK

ENVIRONMENTAL DEPARTMENT
NAVAL AIR STATION
437 HUEY DRIVE
BRUNSWICK, ME 04011

January 21, 2011

Mr. Edward Vigneault
Maine Department of Environmental Protection
Division of Oil and Hazardous Waste Facilities Registration
17 State House Station
Augusta, ME 04333-0017

Subj: Final RCRA Partial Closure Report for Building 54

Dear Mr. Vigneault:

A copy of the Final RCRA Partial Closure Report for Building 54 at Naval Air Station Brunswick is provided as Enclosure (1).

If you have any questions, please contact Mr. Mike Fagan at 921-1717 or via e-mail at michael.fagan1@navy.mil.

Sincerely,

LISA M. JOY
Environmental Director

Enclosure: (1) Final RCRA Partial Closure Report for Building 54

Copy to:
NAVFAC Mid-Atlantic (B. Abraham)
NAS Brunswick (M. Fagan/D. Smith)
EPA Region I (M. Daly)
MRRA (V. Boundy)
Curtis Memorial Library (L. Oliver)
Lepage Environmental (C. Lepage)
BRAC PMO NE (P. Burgio)

RCRA PARTIAL CLOSURE REPORT
for
BUILDING 54 – APPLIED INSTRUCTION BUILDING PARCEL
NAVAL AIR STATION BRUNSWICK, MAINE
USEPA IDENTIFICATION NUMBER ME8170022018
JANUARY 2011

1. INTRODUCTION

The purpose of this report is to present the findings and conclusions of the investigation conducted to determine if the Maine Department of Environmental Protection (MEDEP) RCRA or hazardous waste closure requirements have been completed for the Building 54 parcel at Naval Air Station Brunswick (NAS Brunswick).

2. PROPERTY DESCRIPTION

The Building 54 (Applied Instruction Building) parcel is located in the east-central portion of NAS Brunswick, west of the base housing area (Figure 1). The parcel is bordered along its northern boundary by the Building 644 (the P-3C Operational Trainer building) parcel (directly north of Building 54), the Building 645 (Medical/Dental Clinic) parcel (along the northernmost portion of the parcel boundary), and by the Building 639 (Navy Information Operations Detachment [NIOD] building) parcel, along the westernmost portion of the parcel's northern boundary (Figure 2). Burbank Avenue is also to the northwest, immediately beyond the Building 639 parcel, and Building 54 is accessed via Burbank Avenue.

The eastern boundary of the Building 54 parcel is formed by the Casco Bay Pipeline, which runs approximately northwest-southeast, and is described below in Section 3. Base housing areas (Woodland Village and Gateway Inns) are located beyond the pipeline, east of the Building 54 parcel.

Directly to the south of the Building 54 parcel are Beasley Circle and the secure area occupied by the Building 87 (Anti-Submarine Warfare Operations Center [ASWOC]) parcel. The Building 43 (Telephone Exchange) parcel and Building 228 (Sentry House - CPRW 5) border the Building 54 parcel to the southwest.

Building 54 was constructed in 1988 and served most recently as an applied training facility for three Fleet Aviation Specialized Operational (FASO) programs: Aircraft Maintenance and Management Training (AMAMT), Fleet Anti-Submarine Warfare (ASW) Training, and Survival, Evasion, Resistance, and Escape (SERE). The building consists of a 30,000-square-foot, multi-room, single-level building on a concrete slab foundation and was heated by natural gas. Photographs of the building are provided as an attachment to this report.

3. PROPERTY HISTORY AND RECORDS RESEARCH

The Tetra Tech NUS, Inc. (Tetra Tech) project team interviewed NAS Brunswick Environmental Department personnel and performed records research at both NAS Brunswick and the MEDEP office in Augusta, Maine to collect available information concerning the Building 54 parcel, including past use and operations at that location.

Records reviewed include historical aerial photographs, the NAS Brunswick Other Environmental Liabilities (OEL) Database, area-specific reports, facility plans and drawings, and hazardous waste records. Aerial photographs dated 1953, 1958, 1978, 1981, 1984, 1989, 1993 and 1997 (Sewall, 1953, 1958, 1978, 1981, 1984, 1989, 1993 and 1997) were reviewed. Additional aerial photographs for the parcel dated 1940, 1959, 1965, 1966, 1972, 1978, and 1980 were also reviewed (U.S. EPA, 1987). Public Works Department (PWD) site base maps dated 1943, 1946, 1952, 1956, 1957, 1975, 1978, 1979, 1989, and 2006 (PWD, 1943, 1946, 1952, 1956, 1957,

1975, 1978, 1979, 1989, and 2006a) and site building lists for 1950, 1965, 1976, 2003, 2006 and 2008 (PWD, 1950, 1965, 1976, 2003, 2006b and 2008a) were also reviewed.

The 2006 buildings index is the first available building list to include Building 54, and indicates it to be a 30,000-square-foot structure constructed in 1988. This construction date is consistent with aerial photographs and historical site plans. The following summarizes other historical observations relating to the Building 54 parcel and proximal areas:

- The 1940 aerial photograph shows the Building 54 area is vacant and wooded.
- On aerial photographs and historical maps between 1946 and 1978, the western portion of the Building 54 parcel and most of the current Building 54 footprint is located within a fenced area identified as "Air Force Operations."
- On historical site plans dated between 1946 and 1957, Building 32 (Sewerage Pump Station) is shown located approximately on the southeastern side of the current Building 54 footprint. Building 32 is also referenced on the 1943 historical site plan. During this timeframe, the eastern portion of the parcel appears to be undeveloped.
- The 1958 aerial photograph shows a vehicle or equipment storage directly northwest of Building 54 along Burbank Avenue.
- Building 32 (Sewerage Pump Station) is referenced on building indexes prior to 1965, when it appears that the building identification number was re-used in another location.
- Based on available information, this former U.S. Air Force (USAF) facility was a Control and Warning Facility (radar station) and was in operation until the mid-1960s, when the facility was transferred to the Navy.
- The 1975 historical site plan shows Building 639 in its current location, to the west of the current Building 54 footprint.
- On historical site maps and aerial photographs beginning in 1978, Building 644, located to the north of Building 54, is shown. In the 1978 photograph, the Building 54 footprint area appears disturbed and possibly used for vehicle or equipment storage.
- In aerial photographs and historical site plans dated between 1978 and 1984, a parking area occupies a portion of the northwestern corner of the Building 54 parcel.
- The 1989 aerial photograph is the earliest to show Building 54, and it is shown in its current location. The photograph also indicates that all buildings located south of the Building 54 footprint, except Building 594, were demolished prior to that photograph date; the current roadways, parking area, Building 87 (CPRW 5) and Building 54 are present in their current configuration. Building 228 is also visible in its current location.
- Site records indicate that the housing areas located to the east of the Building 54 parcel were built sometime between 1997 and 2006. According to the 2008 building index, Building 751 (School Age Care Center) located to the east of the Building 54 parcel was built in 2004.

Historical site plans dated 1986 show that the interior of the Building 54 includes classrooms, conference rooms and office space, an exam room, a vault for classified records, storage rooms, gear maintenance and supply rooms, and a vehicle loading and maintenance training room (NAVFAC, 1986c and 1986d) as shown in Figure 3. A mechanical room is located in the south-central portion of the building (Figure 3). According to NAS Brunswick personnel, activities conducted in Room 153 (former Maintenance Shop) included minor cleaning and repair of photography equipment. Similar activities may have also occurred in Room 156 (former Film Device Storage), which has been converted to other training uses. In Room 168 (Survival Equipment Maintenance Shop) a lathe and drill-press are shown on the historical plan (NAVFAC, 1986d). According to NAS Brunswick Environmental Department personnel, minor equipment repairs were performed in Room 168 and the dip tank, also shown on the 1986 plan, contained water and was used to test the waterproofing of survival equipment. Also, according to NAS Brunswick Environmental Department personnel, minor vehicle repairs were performed in Room 182 (Vehicle Loading/Maintenance Area). There is no evidence that indicated film processing operations occurred in Building 54; these activities were conducted elsewhere at NAS Brunswick.

As noted in Section 2, an approximately 600-foot segment of the Casco Bay Pipeline, an abandoned-in-place aviation fuel pipeline, forms the eastern boundary of the Building 54 parcel. This pipeline system consists of two separate pipes that were used to transfer jet propulsion fuel (primarily JP-5) from the Defense Fuel Support Point (DFSP)-Casco Bay facility to the Old Navy Fuel Farm (ONFF) during the period from about 1952 until 1991. The pipelines are constructed of two separate, carbon-steel pipes with welded joints, and are set approximately 3 feet apart. The pipes are covered in an exterior tar coating impregnated with asbestos. In 1991, the pipeline was taken out of service, drained, and cleaned. The pipeline was also pressurized with nitrogen until 1995, when the NAS Brunswick ONFF was dismantled (GZA, 1997).

According to historical records and NAS Brunswick Environmental Department personnel, following its construction in 1988, Building 54 was used as a training facility. Also according to NAS Brunswick Environmental Department personnel, hazardous waste generation at Building 54 was episodic in nature, with no operations producing hazardous waste on a regular basis. The source of most hazardous waste generated by activities at Building 54 was aerosol paints and lithium batteries, used on an “as needed” basis. NAS Brunswick has a program in place that tracks hazardous waste to ensure proper handling and disposal. Generally, small quantities (less than 50 gallons total) of wastes such as paint waste, adhesives, aerosols, fluorescent lamps, and rifle grease were generated during the 1990 through 2009 time period. Lithium, nickel-cadmium, and mercury batteries, as well as PCB ballasts and toluene were also originated from Building 54 during this time period. Table 1 provides a list of hazardous wastes with associated RCRA waste codes and quantities of waste, obtained from Hazardous Waste Database for Building 54 during the period from 1990 through 2009 (Environmental Department, 2010). It is noted that operations conducted at Building 54 were under the Fleet Aviation Specialized Operational Training Group (FASO). All hazardous waste generated by FASO was processed through Building 54. Therefore some of the waste materials reported in Table 1 was not actually generated at Building 54 but accumulated for pickup by the NAS Brunswick Hazardous Waste Department According to NAS Environmental; Department personnel the majority of the universal waste lamps and most of the empty and waste aerosol can waste the Rangeley (Maine) Training Facility operated by FASO.

The NAS Brunswick Master/Historical Aboveground and Underground Storage Tank Inventory lists one inactive aboveground storage tank (AST) for Building 54 (tank 54.0). Tank 54.0 is listed as a 12,000-gallon, double-walled steel AST with secondary containment, used for the storage of No. 1 fuel oil. This tank was installed in 1996 and closed in April 2009. No underground storage tanks (USTs) are registered to Building 54 (Environmental Department, 2009).

Building 54 is connected to the base-wide sanitary sewer system (Navy, 2006). No oil/water separator (OWS) is listed for Building 54 on the NAS Brunswick Revised Oil/Water Separator List (PWD, 2008b), however a “Utility Plan” drawing dated 1986 shows plans for utilities associated with Building 54 including an OWS located near the southeastern corner of the building (NAVFAC, 1986b).

According to MEDEP and NAS Brunswick spill records, no spills were reported in the vicinity of Building 54 (Environmental Department, 1988; Environmental Department 1999; and MEDEP, 2010). One entry in the NAS Brunswick Hazardous Waste Database indicated that fuel-oil-contaminated debris of an unknown quantity was generated from Building 54 on July 11, 2007. This is There were no spills associated with Building 54 that were reported by MEDEP or NAS Brunswick corresponding with this date, or any date.

The NAS Brunswick Removed Transformer Database lists no electrical transformers associated with the current Building 54 (PWD, 2010). The NAS Brunswick Transformer Database lists one non-polychlorinated-biphenyl (PCB)-containing electrical transformer for Building 228, located to the southwest of Building 54 (Figure 2); an unknown voltage, pad-mounted transformer (Cooper

Serial No. 860314). The first two digits of the transformer serial number indicate that it was manufactured in 1986. It is therefore unlikely to contain PCBs (as of July 1, 1979, the United States Environmental Protection Agency [EPA] prohibited all manufacturing of new PCB electrical equipment [transformers and capacitors]). However, since buildings have been present on the parcel since at least 1943, it is possible that a previous PCB-containing transformer may have been present at the Building 54 parcel, although there is no record of PCB-containing transformers for the previous buildings.

A 1986 historical plan shows the construction of Building 54 as the Patrol Aircraft Maintenance Training Building (NAVFAC, 1986a). This plan indicates that a new transformer was installed at the southwest corner of Building 54 (approximate location of current transformer, as verified during site visit, discussed in Section 4). This location corresponds with the location of the current transformer.

No groundwater investigations have been conducted in the vicinity of the Building 54 parcel; therefore, groundwater characterization information for the parcel is not available. Information on known NAS Brunswick groundwater contamination areas was reviewed to determine if groundwater underlying the Building 54 parcel could potentially be impacted by another (off-parcel) source area. The only identified groundwater contamination that could potentially impact the parcel is the dissolved-phase hydrocarbon plume associated with the ONFF, located north-northwest and upgradient of Building 54. The ONFF was decommissioned in 1993 and remediated in 2000. The ONFF groundwater monitoring program indicates that the general groundwater flow direction from the ONFF is toward the southeast, across Fitch Avenue and the Building 150 and Building 151 parcels (ESI, 2009). As shown on Figure 2, the northern portion of the Building 54 parcel is approximately 300 feet southeast of Building 150 and the current southern extent of the plume. Based on information from the ONFF groundwater monitoring program, it is unlikely that groundwater underlying the Building 54 parcel is impacted by the ONFF hydrocarbon plume.

Little information is available regarding hazardous substance use and disposal practices that may have been conducted at the western portion of the parcel when it was part of a former USAF facility. While there is no information that would suggest a release occurred, solvents were typically used for cleaning radar antennas and electrical equipment at these former radar facilities, such as the former USAF radar domes (former Buildings 598 and 599). Due to the uncertainties regarding USAF hazardous substance use and disposal practices, the Navy is conducting a groundwater sampling investigation at the former radar station area to determine if there is evidence of a historical release of solvents in this area. The potential for groundwater contamination at the Building 54 parcel will be addressed under this investigation.

4. SITE VISIT AND INVESTIGATION

A site visit was conducted on November 2, 2010 by Mr. James Forrelli, P.E., Mindi Messmer, and Brian Geringer, of Tetra Tech. The purpose of the visit was to verify information gathered during the records search and to collect additional information as necessary to prepare this closure report. Tetra Tech personnel were accompanied by Mr. D. Bruce Smith, the NAS Brunswick Hazardous Waste Manager. Building 54 was visually inspected for signs of hazardous waste generation or storage. Site visit observations, recorded on the attached Building Inspection Form [(1)], are summarized below:

- At the time of inspection, Building 54 was vacant and in good condition. The interior consisted of multiple rooms including classrooms, conference rooms and office space, an exam room, a vault for classified records, storage rooms, gear maintenance and supply rooms, and a vehicle loading and maintenance training room. A mechanical room containing a boiler and associated generator is located in the south-central portion of the building.
- No peeling paint was observed at Building 54.

- Three floor drains were observed in the mechanical room, two floor drains were observed in the vehicle loading/maintenance room (Room 182) and one floor drain was observed in the equipment drying room (Room 183). (According to historical site plans, these floor drains are likely to be connected to the oil/water separator located south of the building and discussed in Section 2.)
- No evidence of current or past hazardous waste generation activities was observed.
- No signs of a past release (staining, unusual odors, stressed vegetation, etc.) were observed.
- No modifications to the structure, which may conceal signs of a past release, were observed.
- One pad-mounted transformer was observed, located near the southwest corner of Building 54.
- An AST was observed on the southern side of the building (Figure 2). The tank (A54.0) was closed on April 27, 2009. No evidence of a past release from this AST was observed.

The site visit team was not aware of the Building 54 OWS, located near the southeastern corner of the building, therefore it was not inspected. According to MAS Brunswick Environmental Department personnel this OWS will be cleaned at part of the upcoming base-wide OWS cleaning project.

Based on the site visit observations and records research findings, environmental samples were collected at Building 54 to investigate the potential presence of hazardous waste residue potentially associated with the exterior electrical transformer pad, and the following Building 54 rooms:

- Room 153 – Maintenance Shop (former)
- Room 156 – Film Device Storage (former)
- Room 168 – Survival Equipment Maintenance Shop
- Room 182 - Vehicle Loading/Maintenance Area

The investigation sample results are discussed below.

<u>Electrical Transformer Pad Investigation</u>

As noted above in Section 3, as of July 1, 1979, the EPA prohibited all manufacturing of new PCB electrical equipment (transformers and capacitors). Due to the age of the surrounding buildings, it is possible PCB-containing transformers were used at Building 54. Therefore, soil samples were collected around the transformer pad to assess potential PCB impacts to soil. Eight surface soil samples were collected from four locations around the transformer pad on November 10, 2010 (Figure 3). A hand auger was used to collect samples from 0- to 6-inches below ground surface (bgs) and from 6- to 24-inches bgs at each of the four locations.

All soil samples were submitted for PCB analysis by Tetra Tech's subcontracted laboratory, Analytics Environmental Laboratories (Analytics). The resulting analytical data underwent limited data validation consisting of blank contamination evaluation and completeness evaluation.

Soil sample PCB results are presented in Table 2. Results were compared to the MEDEP standard for total PCBs in soil, 1 part per million (ppm). For informational purposes, results were also compared to EPA Regional Screening Levels (RSLs) for residential soil (U.S. EPA, 2010). As shown, PCBs were not detected in any of the soil samples.

Based on the records research findings, site visit observations, and sampling results, it was determined that neither further investigation nor sampling of the transformer area at Building 54 is required to complete the MEDEP hazardous waste closure requirements.

Residue Investigation

On November 10 and 19, 2010, wipe samples from floors and walls were collected from 23 locations in Building 54, as shown on Figure 3. Wipe samples were submitted for RCRA metals and semi-volatile organic compound (SVOC) analysis by Tetra Tech's subcontracted analytical laboratory, Analytics. The resulting analytical data underwent limited data validation consisting of field duplicate evaluation, blank contamination evaluation, and completeness evaluation.

Wipe sample results for the Building 54 investigation are presented in Table 3. For lead, analytical results were compared to the following MEDEP criteria for lead-contaminated settled dust, applicable for RCRA closures:

Floors: 40 micrograms per square foot (µg/ft^2)
Walls and other flat surfaces up to a height of 8 feet: 250 µg/ ft^2
Surfaces above 8 feet: visibly clean (dust-free)

For informational purposes, wipe sample results for six of the other seven metals were compared to World Trade Center (WTC) Settled Dust Screening Values (there are no WTC screening values for selenium) (WTC, 2003). There are no Maine criteria for the other seven RCRA metals or for the SVOCs. The data validation findings indicate that some of the SVOC detections are related to blank contamination or were qualified as "J" (approximate).

As shown in Table 3, lead was detected in one floor-wipe sample collected from Room 182 (Vehicle Loading/Maintenance) at a level of 59 µg/ft^2, exceeding the MEDEP criterion for floors (40 µg/ft^2). However, the average lead level in five Room 182 floor wipe samples is 30 µg/ft^2 indicating that the lone lead level exceedance is not representative of the Room 182 floor dust levels. Mercury was also detected in two wipe samples at levels that exceed the WTC criterion (15 µg/ft^2): one collected from Room 156 (former Film Device Storage) at 23 µg/ft^2 and the other from Room 168 (Survival Equipment Maintenance) at 19 µg/ft^2. All other wipe sample mercury levels in samples both rooms are below 1 µg/ft^2, indicating that these slightly elevated levels are not representative of a the average surface dust mercury levels In these rooms. All levels of other detected metals in these samples were below the screening values. In addition, it is noted that during the site visit no residue waste material was observed in any of the three rooms where the exceedances samples were collected. SVOCs, including acetophenone, benzaldehyde, bis(2-ethylhexyl)phthalate, di-n-butylphthalate, di-n-octylphthalate, naphthalene and phenanthrene, were also detected in wipe samples collected from both rooms.

Further actions were deemed unnecessary since residue metal levels detected are not likely representative of heavily contaminated areas requiring remediation.

5. HAZARDOUS WASTE GENERATION AND STORAGE

Based on the records research and NAS Brunswick Environmental Department personnel interviews, former operations at Building 54 generated small quantities of various wastes on an episodic basis; these wastes were handled and disposed of under the NAS Brunswick hazardous waste department, as discussed in Section 3. As discussed in Section 3, some waste items (universal waste lamps and empty and waste aerosol can waste) was generated of-parcel and temporarily accumulated at Building 54 prior to pickup by the hazardous waste deportment

Based on site visit observations and sampling results, hazardous waste residue was generated at Building 54 in the form of lead- and mercury- contaminated settled dust from equipment maintenance and vehicle loading and maintenance activities associated with operations conducted at the former training building. Based on an evaluation of overall sampling results, the few slightly elevated lead and mercury level exceedances (discussed in Section 4) are not representative of residual contamination and remediation action is not warranted.

In addition, it's likely that during the use of a portion of the Building 54 parcel as a USAF radar facility in the 1950s, spent chlorinated solvent waste was generated as part of the maintenance of radar antennas and electrical equipment. There is no information available concerning the quantities of hazardous waste that may have been generated or the waste storage and disposal practices during the timeframe of the radar facility operation, and there is no information that would suggest a release of hazardous waste has occurred at the parcel.

6. OTHER ENVIRONMENTAL CONSIDERATIONS

Any electrical transformers, OWS, or ASTs known to be associated with Building 54 are discussed in Sections 3 and 4. No other transformers, OWS, or ASTs were observed in the immediate vicinity of the building, or elsewhere on the parcel. No USTs are known to be associated with Building 54 and none were observed.

7. LIMITATIONS

This investigation of the hazardous waste closure requirement applies to the Building 54 parcel (as shown on Figure 2) only.

8. CERTIFICATION

Historical operations resulted in the generation of hazardous waste residue at Building 54, NAS Brunswick, Maine, based on the findings of the investigation as presented in this Partial Closure Report. In addition, hazardous waste may have been generated in the 1950s when the western portion of the parcel was occupied by a former USAF radar station. In accordance with the provisions of MEDEP Regulations Chapter 851, Standards for Generators of Hazardous Waste, Section 11, the hazardous waste closure of the Building 54 parcel was completed, with the exception of possible residual groundwater contamination that may be present as a result of a potential historical release associated with the former USAF radar station. Potential groundwater contamination at the former radar station area will be investigated by the Navy in a future groundwater investigation.

James R. Forrelli

James Forrelli, P.E.
Senior Project Engineer
Tetra Tech NUS, Inc.

STATE OF MAINE
JAMES R. FORRELLI
No. 8053
LICENSED
PROFESSIONAL ENGINEER

(1) The Building Inspection Form provides preliminary information collected during the building inspection, including information from visual observations, Navy personnel interviews, and from documents reviewed during file reviews. It does reflect any additional information provided at a later date that further clarifies or corrects preliminary information collected during the building inspection and file reviews.

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TABLE 1
BUILDING 54 HAZARDOUS WASTE QUANTITIES 1990 THROUGH 2009[(1)]
RCRA PARTIAL CLOSURE REPORT
BUILDING 54 – APPLIED INSTRUCTION BUILDING
NAVAL AIR STATION BRUNSWICK, MAINE

Description	RCRA Waste Code	Quantity
adhesive	D001, D007, D035	4.1 pounds[(2)]
aerosol cans (used and empty)	D001	60 pounds
aircraft paint		unknown
alcohol, denatured	D001	1 gallon
ammonium hydroxide	D002	1 quart
asbestos		675 pounds
ballasts, PCB		11 pounds
batteries, lithium	D001, D003	320 pounds[(2)]
batteries, mercury	D009	1.5 pounds[(2)]
batteries, nickel-cadmium	D002, D006	31.6 pounds[(2)]
batteries, nickel-metal hydride		3.1 pounds
batteries, sealed lead acid	U01	6.3 pounds
cathode ray tube (CRT)	D008UW	3284 pounds[(2)]
caustic cleaner	D002	8.4 pounds
cleaning compound, solvent	F002	5.25 gallons
construction debris		22 pounds
contact cement	D001	unknown
film cleaner (1,1,1 trichloroethane)	F002	1 gallon
fuel oil No. 1/water mix (Tank A54.0 cleaning)		2448 pounds
gasoline (mo gas)	G11	2.4 pounds
grease, rifle		unknown
grease (not specified)		1 pound
isopropyl alcohol	D001	5 gallons
lamps, fluorescent	D009	355 pounds
lamps, mercury	U01	4.9 pounds
mineral spirits	D001	unknown
oil, linseed		5 gallons
oil, lubricating	D001	4 ounces
oil, weapons		1 quart
paint	D001, D006, D007, D008, D035	unknown
paint, aerosol	D001, D007, D008	unknown
paint (not specified)		22 pounds
paint, aircraft		58 pounds
paint, latex		280 pounds
paint waste (paint related material)	D001	1.3 gallon
polish, automotive	D001	unknown
rags (hydraulic fluid soaked)		41 pounds
rags (jet fuel soaked)	D001, D006, D007, D035	26 pounds
roof cement		12.6 pounds
soap		25.8 pounds
solids, RCRA maverick		unknown
solvent, naphtha (PD-680)	D001	0.33 gallons
spill (fuel oil) cleanup materials		unknown
thermometers	U01	2.9 pounds
toluene	D001	1 gallon
Unknown	D035	unknown
waste oil (lubricating, instrument)	D001	0.25 gallons
waste oil (neatsfoot oil, contaminated)		1 gallon
wax stripper		48.6 pounds
wax, automobile	D001	unknown
wax, floor		113 pounds

(1) All hazardous waste generated by FASO was processed through Building 54. The majority of the universal waste lamps and most of the aerosol can waste generated at the Rangeley (Maine) Training Facility

(2) Quantity reported for years 2003 through 2010

TABLE 2
INVESTIGATION SOIL SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 54 – APPLIED INSTRUCTION BUILDING
NAVAL AIR STATION BRUNSWICK, MAINE

SAMPLE ID(1)	**EPA RSLs(2) (µg/kg)**	B54-SB01-0006	B54-SB01-0624	B54-SB02-0006	B54-SB02-0624	B54-SB03-0006	B54-SB03-0624	B54-SB04-0006	B54-SB04-0624
LOCATION		Building 54 transformer pad south side	Building 54 transformer pad south side	Building 54 transformer pad west side	Building 54 transformer pad west side	Building 54 transformer pad north side	Building 54 transformer pad north side	Building 54 transformer pad east side	Building 54 transformer pad east side
MATRIX		soil	soil	soil	soil	soil	soil	Soil	soil
DEPTH		0-6 inches bgs	6-24 inches bgs	0-6 inches bgs	6-24 inches bgs	0-6 inches bgs	6-24 inches bgs	0-6 inches bgs	6-24 inches bgs
SAMPLE DATE		11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10
PCB (µg/kg)									
Aroclor-1016	3,900	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
Aroclor-1221	140	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
Aroclor-1232	140	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
Aroclor-1242	220	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
Aroclor-1248	220	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
Aroclor-1254	220	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
Aroclor-1260	220	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U
Total PCBs (3)	1,000	18 U	18 U	18 U	18 U	18 U	18 U	18 U	18 U

Notes:
(1) Sample prefix "NASB" is not shown.
(2) EPA Regional Screening Levels [RSLs] for residential soil provided for informational purposes
(3) MEDEP action limit for PCB spill (1 mg/kg).
bgs below ground surface
µg/kg micrograms per kilogram
U not detected (with associated detection limit)
PCB polychlorinated biphenyl

TABLE 3
WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 54 – APPLIED INSTRUCTION BUILDING
NAVAL AIR STATION BRUNSWICK, MAINE
PAGE 1 OF 3

SAMPLE ID[1]				B54-WP01	B54-WP02	B54-WP03	B54-WP04	B54-WP05	B54-WP06	B54-WP07	B54-WP08	B54-WP09	B54-WP10	B54-WP10 (duplicate)
LOCATION				Building 54 room 168 former lathe floor	Building 54 room 168 former lathe floor	Building 54 room 168 former lathe wall	Building 54 room 168 former lathe wall	Building 54 room 168 former drill press floor	Building 54 room 168 former drill press wall	Building 54 room 168 former dip tank floor	Building 54 room 168 former dip tank floor	Building 54 room 168 former dip tank wall	Building 54 Room 153 floor	Building 54 Room 153 floor
MATRIX				wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe
SAMPLE DATE	**WTC**	**MEDEP floor**	**MEDEP wall**	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10
METALS (µg/ft^2)														
arsenic	36	--	--	9.3	7.1 J	4.6 U	4.6 U	7.3 J	4.6 U	NA	NA	NA	4.6 U	4.6 U
barium	10000	--	--	130	130	8.5	5.9	160	5.2	NA	NA	NA	19	11
cadmium	140	--	--	0.83 J	1.3 J	0.46 J	0.46 J	2 J	0.19 J	NA	NA	NA	0.83 J	0.37 J
chromium	440	--	--	29	30	3.5 J	7.7 J	56	0.93 J	NA	NA	NA	5.7 J	3.4 J
lead	NA	40	250	16	18	3.7 UJ	3.7 UJ	19	3.7 UJ	NA	NA	NA	11	6.1 U
mercury	15	--	--	0.93	0.19 J	0.074 J	0.019 J	19	0.19 J	NA	NA	NA	0.019 J	0.0093 J
selenium	--	--	--	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	NA	NA	NA	6.5 U	6.5 U
silver	730	--	--	3.7 U	1.2 J	3.7 U	3.7 U	3.7 U	3.7 U	NA	NA	NA	3.7 U	3.7 U
SEMIVOLATILES (µg/ft^2)														
acetophenone	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	91	9.3 U	NA	NA
benzaldehyde	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	60	9.3 U	NA	NA
bis(2-ethylhexyl)phthalate	--	--	--	110 U	67 U	72 U	92 U	43 U	68 U	31 U	9.3 U	33 U	NA	NA
butyl benzyl phthalate	--	--	--	62	30	41	44	9.3 U	29	9.3 U	27	13 J	NA	NA
di-n-butyl phthalate	--	--	--	9.3 U	9.3 U	58	75	9.3 U	76	9.3 U	14 J	60	NA	NA
di-n-octyl phthalate	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	NA	NA
naphthalene	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	16 J	9.3 U	NA	NA
phenanthrene	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	10 J	9.3 U	NA	NA
Other SVOCs	--	--	--	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	NA

TABLE 3
WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 54 – APPLIED INSTRUCTION BUILDING
NAVAL AIR STATION BRUNSWICK, MAINE
PAGE 2 of 3

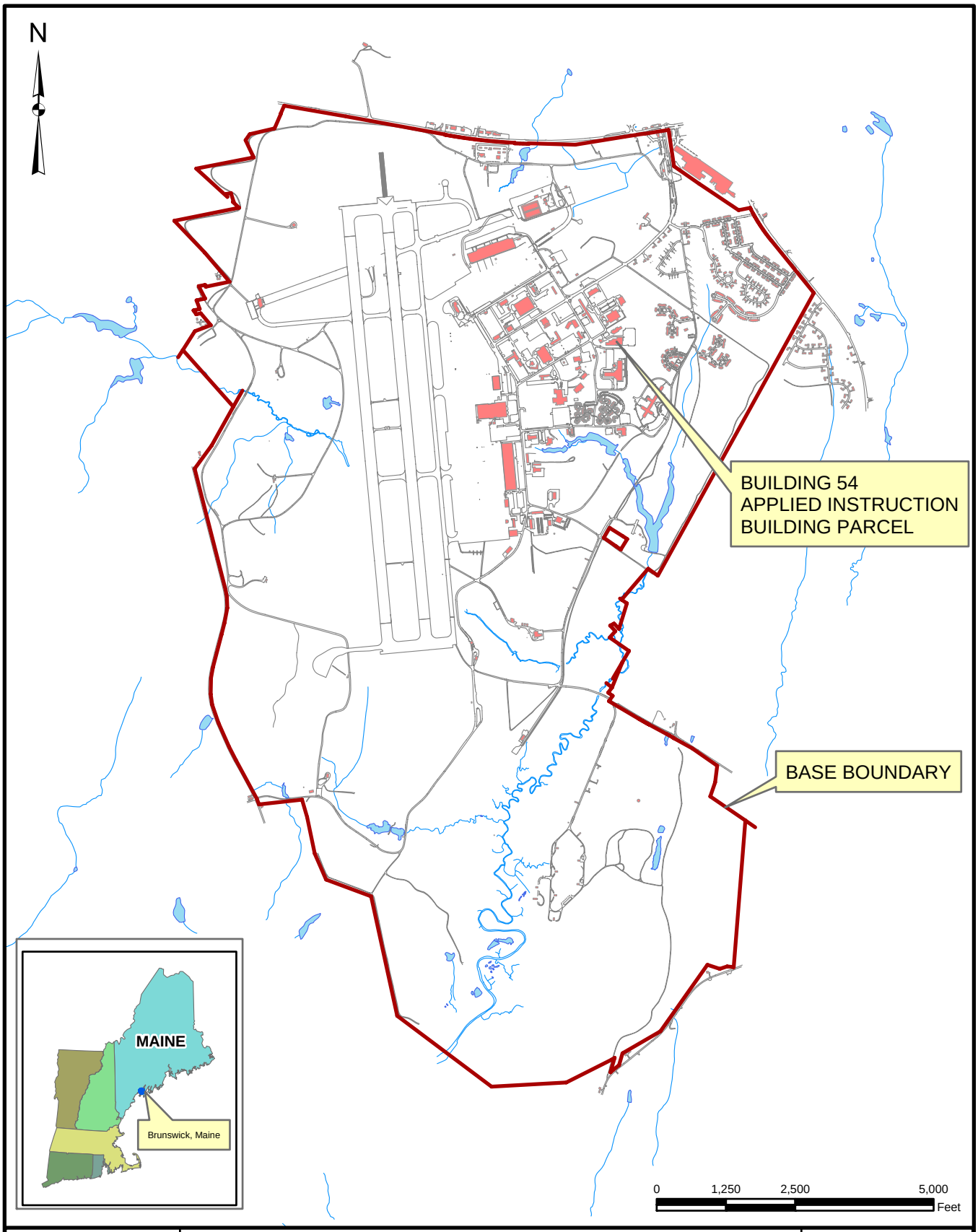
SAMPLE ID[1]				B54-WP11	B54-WP12	B54-WP13	B54-WP14	B54-WP15	B54-WP16	B54-WP16 (Duplicate)	B54-WP17	B54-WP18	B54-WP19
LOCATION				Building 54 Room 153 wall	Building 54 Room 156 floor	Building 54 Room 156 floor	Building 54 Room 156 east wall	Building 54 Room 156 west wall	Building 54 Room 182 south bay floor	Building 54 Room 182 south bay floor	Building 54 Room 182 north bay floor	Building 54 Room 182 north bay wall	Building 54 Room 182 west (south) wall
MATRIX				wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe
SAMPLE DATE	**WTC**	**MEDEP floor**	**MEDEP wall**	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10	11/10/10
METALS (µg/ft^2)													
arsenic	36	--	--	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	5.5 J	8.1	2.2 J	4.6 U	4.6 U
barium	10000	--	--	3.2 J	10	5.4	5.7	3 J	160	270	180	82	21
cadmium	140	--	--	2.8 U	0.28 J	0.093 J	0.19 J	0.19 J	4.4 J	4.8 J	2.2 J	0.83 J	0.56 J
chromium	440	--	--	1.5 J	1.9 J	1.8 J	0.93 J	0.74 J	19	43	15	12 J	4.9 J
lead	NA	40	250	3.7 U	4.4 UJ	3.7 UJ	3.7 UJ	3.7 UJ	31 J	59 J	31	19	11
mercury	15	--	--	0.093 UJ	0.093 UJ	0.093 UJ	0.093 UJ	23	0.37	0.093 UJ	0.019 J	1.1	0.093 UJ
selenium	--	--	--	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	6.5 U	3.8 J	6.5 U	6.5 U	6.5 U
silver	730	--	--	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U	3.7 U
SEMIVOLATILES (µg/ft^2)													
acetophenone	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
benzaldehyde	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-ethylhexyl)phthalate	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
butyl benzyl phthalate	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
di-n-butyl phthalate	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
di-n-octyl phthalate	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
naphthalene	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
phenanthrene	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other SVOCs	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE 3
WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 54 – APPLIED INSTRUCTION BUILDING
NAVAL AIR STATION BRUNSWICK, MAINE
PAGE 3 of 3

SAMPLE ID[1]				B54-WP20	B54-WP21	B54-WP21 (duplicate)	B54-WP22	B54-WP23
LOCATION				Building 54 room 182 north (west) wall	Building 54 room 182 south bay floor	Building 54 room 182 south bay floor	Building 54 room 182 northeast floor	Building 54 room 182 west (north) wall
MATRIX				Wipe	wipe	Wipe	wipe	wipe
SAMPLE DATE	**WTC**	**MEDEP floor**	**MEDEP wall**	11/19/10	11/19/10	11/19/10	11/19/10	11/19/10
METALS (µg/ft^2)								
arsenic	36	--	--	NA	NA	NA	NA	NA
barium	10000	--	--	NA	NA	NA	NA	NA
cadmium	140	--	--	NA	NA	NA	NA	NA
chromium	440	--	--	NA	NA	NA	NA	NA
lead	NA	40	250	NA	NA	NA	NA	NA
mercury	15	--	--	NA	NA	NA	NA	NA
selenium	--	--	--	NA	NA	NA	NA	NA
silver	730	--	--	NA	NA	NA	NA	NA
SEMIVOLATILES (µg/ft^2)								
acetophenone	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U
benzaldehyde	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U
bis(2-ethylhexyl)phthalate	--	--	--	90 U	250	85 U	93 U	54 U
butyl benzyl phthalate	--	--	--	36	170	26	100	930
di-n-butyl phthalate	--	--	--	22 U	31 U	16 UJ	54 U	70 U
di-n-octyl phthalate	--	--	--	9.3 U	17 J	9.3 U	9.3 U	9.3 U
naphthalene	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U
phenanthrene	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U
Other SVOCs	--	--	--	ND	ND	ND	ND	ND

Notes:
(1) Sample prefix "NASB" is not shown.
Wipe sample surface area: 10 cm by 10 cm
WTC Source: Table A-3 Settled Dust Screening Values and Supporting Toxicity Criteria from World Trade Center Indoor Environment Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks, May 2003
Shading indicates criteria exceeded
µg/ft2 micrograms per square foot
J estimated result
U not detected (with associated detection limit)
-- no criteria available
NA not analyzed
ND not detected
Shading indicates criteria exceeded

I:\02258\CP.DR\NASB_BLDG_54_LOCUS.MXD DWM 01/05/11



Tetra Tech NUS, Inc.

SITE LOCATION MAP

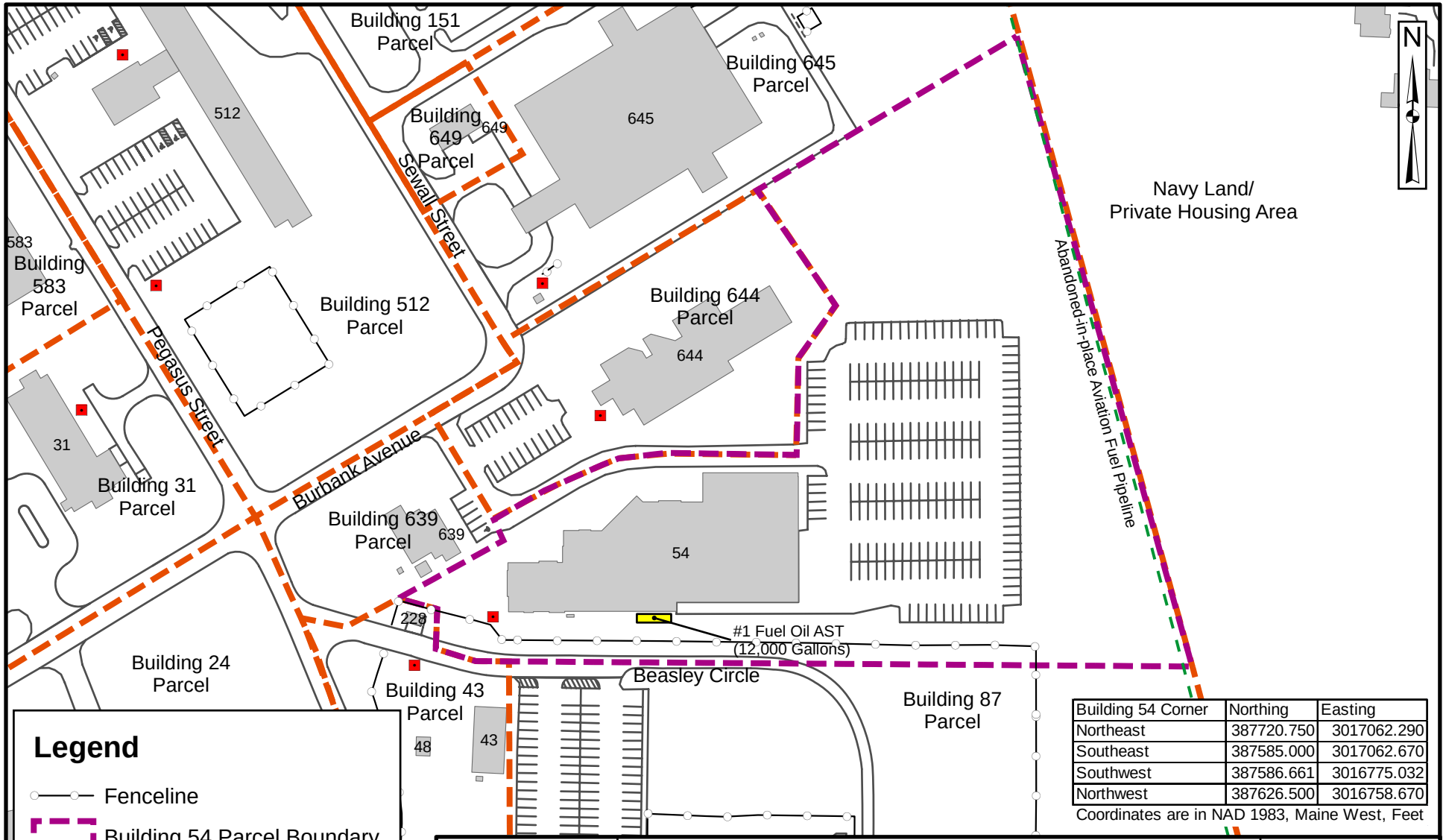
BUILDING 54 - APPLIED INSTRUCTION BUILDING PARCEL

RCRA PARTIAL CLOSURE REPORT

NAVAL AIR STATION BRUNSWICK, MAINE

SCALE	AS NOTED
FILE	I:\..\NASB_BLDG_54_LOCUS.MXD
REV	0
DATE	01/05/11
FIGURE NUMBER	1

I:\02258\CP.DR\NASB_BLDG_54_SITE_MAP.MXD DWM 01/07/11



Legend

- Fenceline
- Building 54 Parcel Boundary
- Parcel Boundary
- Transformer

Building 54 Corner	Northing	Easting
Northeast	387720.750	3017062.290
Southeast	387585.000	3017062.670
Southwest	387586.661	3016775.032
Northwest	387626.500	3016758.670

Coordinates are in NAD 1983, Maine West, Feet

TETRA TECH

SITE LOCATION MAP

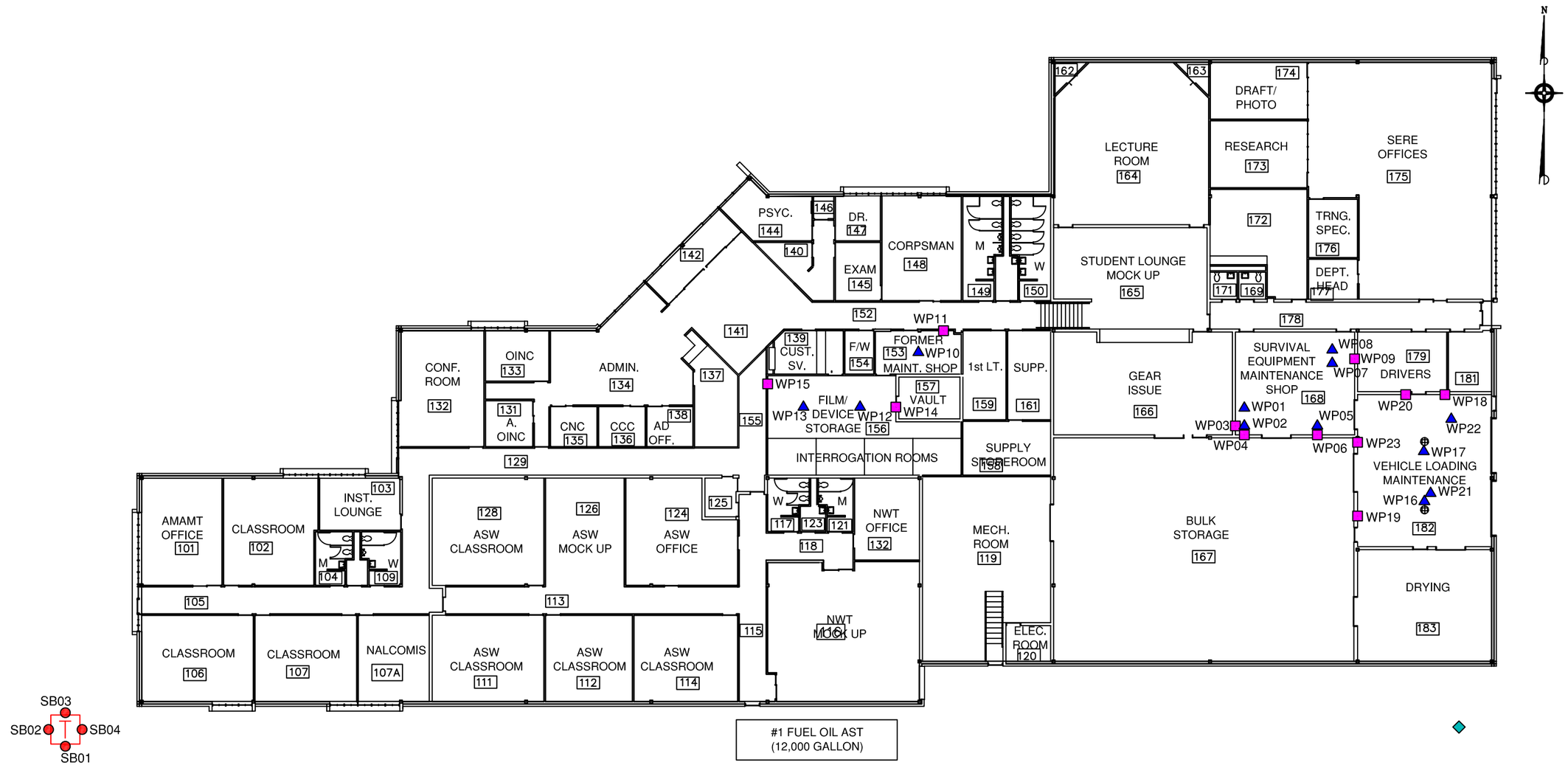
BUILDING 54 - APPLIED INSTRUCTION BUILDING PARCEL

RCRA PARTIAL CLOSURE REPORT

NAVAL AIR STATION BRUNSWICK, MAINE

SCALE	
AS NOTED	
FILE	
\..\NASB_BLDG_54_SITE_MAP.MXD	
REV	DATE
0	01/07/11
FIGURE NUMBER	
FIGURE NO. 2	

ACAD: \02258\CP.DR\NASB_BLDG_54_FP.DWG 01/05/11 DWM



LEGEND

SB01 ● SOIL SAMPLE LOCATION

WP01 ▲ FLOOR WIPE SAMPLE LOCATION

WP09 ■ WALL WIPE SAMPLE LOCATION

T TRANSFORMER

⊕ FLOOR DRAIN

◆ OIL/WATER SEPARATOR

GRAPHIC SCALE

0′ 25′

TETRA TECH NUS, INC.

SAMPLE LOCATION MAP
BUILDING 54 - APPLIED INSTRUCTION BUILDING PARCEL
RCRA PARTIAL CLOSURE REPORT
NAVAL AIR STATION BRUNSWICK, MAINE

FILE	SCALE
\..\NASB_BLDG_54_FP.DWG	AS NOTED
FIGURE NUMBER	REV / DATE
FIGURE NO. 3	0 / 01/05/11

BUILDING 54

HWSA INSPECTION FORM
HAZARDOUS WASTE STORAGE AREAS CLOSURE
NAS BRUNSWICK
BRUNSWICK, MAINE
CTO WE22

Inspection Date: 11/2/10
Personnel: Brian Geringer / James Forrelli, P.E. / Mindi Messmer
Weather: Cloudy, Showers, 60s

GENERAL BUILDING INFORMATION / USES

Building Name: Building 54 – Applied Instruction Building
Function: Administration / Offices / Classrooms/Vehicle Loading/Maintenance
Size: 30,000 SF
Year of Construction: 1988

Building 54 is located in the central eastern portion of NASB Brunswick, west of the base housing areas (Figure 1). Directly to the north is Building 644 (Operational Trainer Building) and further north is the intersection of Burbank and Sewall Streets. The Casco Bay Pipeline (described below in Section 3), Building 751 (School Age Care Center) and the base housing areas (Woodland Village and Gateway Inns) form the parcel border to the east and southeast, respectively. Beasley Circle and the secure area occupied by Building 87 (Anti-Submarine Warfare Operations Center [ASWOC]) are located directly to the south of Building 54. Building 228 (Sentry House - CPRW 5) and Building 639 (P3 Operational Training Building) are located directly to the west of Building 54 (Figure 2). Building 54 is accessed from Burbank Avenue located northwest of Building 54. Building 54 is heated by an oil burner powered by #1 fuel oil.

Building 54 is connected to the base-wide sanitary sewer system (Navy, 2006).

HWSA INSPECTION / CONDITION

- At the time of inspection, Building 54 was vacant and in good condition. The interior consisted of multiple rooms including classrooms, conference rooms and office space, an exam room, a vault for classified records, storage rooms, gear maintenance and supply rooms, a vehicle loading and maintenance training room. A mechanical room is located in the southern portion of the building, and a mechanical room containing a boiler and associated generator.
- No peeling paint was observed at Building 54.
- Three floor drains were observed in the mechanical room, two floor drains were observed in the vehicle loading/maintenance room (room 182) and one floor drain was observed in the equipment drying room (room 183).
- No evidence of current or past hazardous waste generation activities was observed. According to historical site plans these floor drains are likely to be connected to the oil/water separator located south of the building and discussed in Section 2.
- No signs of a past release (staining, unusual odors, stressed vegetation, etc.) were observed. No modifications to the structure, which may conceal signs of a past release, were observed.
- One pad-mounted transformer was observed located at the southwest corner of Building 54.
- An AST was observed on the southern side of the building (see Figure 2). The tank (A54.0) was closed on April 27, 2009. No evidence of a past release from this AST was observed.

POTENTIAL PCB-CONTAINING TRANSFORMERS

The NAS Brunswick Removed Transformer Database lists no electrical transformers associated with the current Building 54 (PWD, 2010) however one was observed adjacent to the southwest corner of the building. The NAS Brunswick Transformer Database lists one non-polychlorinated-biphenyl (PCB)-containing electrical transformer for Building 228 an adjacent building to the southwest of Building 54; an unknown voltage, pad-mounted transformer (Cooper Serial No. 860314).

BUILDING 54

APPLICABLE REPORTS / DOCUMENTS

Available historical aerial photos were reviewed for past uses:

- The 2006 buildings index is the first available building list to include Building 54, and indicates it to be a 30,000-square-foot structure constructed in 1988. This construction date is consistent with aerial photographs and historical site plans.
- The 1989 aerial photograph is the earliest to show Building 54, and it is shown in its current location.
- The 1940 aerial photograph shows the Building 54 area is vacant and wooded.
- On aerial photographs and historical maps between 1946 and 1978, the western portion of the Building 54 parcel and most of the current Building 54 footprint is located within a fenced area identified as "Air Force Operations."
- Building 32 (Sewerage Pump Station) is shown on historical site plans between 1946 and 1957 located approximately on the southeastern side of the current Building 54 footprint. Building 32 is also referenced on the 1943 historical site plan. During this time frame, the eastern portion of the parcel appears to be undeveloped.
- The 1958 aerial shows a vehicle or equipment storage directly northwest of Building 54 along Burbank Avenue.
- Building 32 (Sewerage Pump Station) is referenced on building indexes prior to 1965 when it appears that the building number was re-used in another location.
- Based on available information, this former Air Force facility was a Control and Warning Facility (radar station) and was in operation until the mid-1960s, when the facility was transferred to the Navy.
- The 1975 historical site plan shows Building 639 in its current location to the west of the current Building 54 footprint.
- Building 644 located to the north of Building 54 is shown on historical site maps and aerial photographs beginning in 1978.
- In the 1978 aerial photograph the Building 54 footprint area appears disturbed and possibly used for vehicle or equipment storage.
- A parking area occupies a portion of the northwestern corner of the Building 54 parcel in aerial photographs and historical site plans dated between 1978 and 1984.
- The 1989 aerial photograph indicates all buildings located south of the Building 54 footprint except Building 594 were demolished prior to that photograph date; the current roadways, parking area, Building 87 (CPRW 5) and Building 54 are present in their current configuration. Building 228 is also visible in its current location.
- Site records indicate that the housing areas located to the east of the Building 54 parcel were built sometime between 1997 and 2006. According to the 2008 building index, Building 751 (School Age Care Center) located to the east of the Building 54 parcel was built in 2004.
- No underground storage tanks (USTs) are registered at Building 54. However, one above ground storage tank (AST); one 12,000 gallon tank of #1 fuel (A54.0) is registered to Building 54. The AST was installed in 1996. The tank (A54.0) was closed on April 27, 2009. No evidence of a past release from this AST was observed.
- A "Utility Plan" dated 1986 shows plans for utilities associated with Building 54 including an oil/water separator located on the southeastern corner of the building (NAVFAC, 1986b).

HAZARDOUS WASTE STORAGE RECORDS

No hazardous waste was historically stored at Building 54 according to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith.

MISCELLANEOUS NOTES

The Tetra Tech personnel were accompanied on the inspection by D. Bruce Smith Hazardous Waste Manager.

(SEE ATTACHED SITE SKETCH AND HWSA SKETCH)

(SEE ATTACHED PHOTOGRAPHS)

INSPECTOR SIGNATURE: Mindi Messmer

PHOTOGRAPHS

No. 1 Building 54 – Applied Instruction Building, NAS Brunswick November 2, 2010
Applied Instruction Building northwest elevation

No. 2 Building 54 – Applied Instruction Building, NAS Brunswick November 2, 2010
Applied Instruction Building northeast elevation

No. 3 Building 54 – Applied Instruction Building, NAS Brunswick November 2, 2010
Applied Instruction Building above ground No.1 fuel oil storage tank located on the south side of the building

No. 4 Building 54 – Applied Instruction Building, NAS Brunswick November 2, 2010
Transformer located on the southwest side of Applied Instruction Building possibly registered to Building 228.

No. 5 Building 54 – Applied Instruction Building, NAS Brunswick November 2, 2010
Applied Instruction Building Room 183 showing floor drain in the foreground

No. 6 Building 54 – Applied Instruction Building, NAS Brunswick November 2, 2010
Applied Instruction Building vehicle loading/maintenance area (Room 182); floor drains visible