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FINAL RESOURCE CONSERVATION AND RECOVERY ACT PARTIAL CLOSURE REPORT  
FOR BUILDING 5 HANGAR 5 WITH TRANSMITTAL LETTER NAS BRUNSWICK ME  
5/14/2010  
NAS BRUNSWICK

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

May 14, 2010

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 5 (Hangar 5)

Dear Mr. Vigneault:

A copy of the Final RCRA Partial Closure Report for Building 5 (Hangar 5) 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](mailto:michael.fagan1@navy.mil).

Sincerely,



*Fok* LISA M. JOY  
Environmental Director

Enclosure: (1) Final RCRA Partial Closure Report for Building 5 (Hangar 5)

Copy to:  
NAVFAC Mid-Atlantic (B. Abraham)  
NAS Brunswick (M. Fagan/D. Smith)  
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**RCRA PARTIAL CLOSURE REPORT**  
for  
**HANGAR 5 – AIRCRAFT MAINTENANCE HANGAR PARCEL**  
**NAVAL AIR STATION BRUNSWICK, MAINE**  
**USEPA IDENTIFICATION NUMBER ME8170022018**  
**APRIL 2010**

## **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 Hangar 5 parcel at Naval Air Station Brunswick (NAS Brunswick).

## **2. PROPERTY DESCRIPTION**

The Hangar 5 parcel is located in the central portion of NAS Brunswick (Figure 1). The approximately 19-acre parcel is bordered to the north by the Building 250 parcel; to the east by Orion Street; to the south by the Building 555 (Sonobuoy/Vehicle Storage) and Building 611 (Engine Test Cell) parcels; and to the west by the airfield concrete apron (Figure 2). The parcel contains Hangar 5 (Aircraft Maintenance Hangar), the associated parking and grass-covered areas to the north, east, and south, and the airfield apron to the west. The Building 554 (FSU Building) parcel is also located within the southern portion of the Hangar 5 parcel; however, Building 554 was addressed under a separate RCRA partial closure report (Tetra Tech, 2010). A number of temporary structures, known as line shacks, are also contained within the Hangar 5 parcel. These were used during operations as shelter for airfield ground-crew personnel and for storage of aircraft equipment. The line shacks have been moved a number of times and have no permanent location. These structures will be addressed separately and are not included in this RCRA partial closure report.

Hangar 5, constructed in 1982, consists of a 163,454 square-foot, single-story, steel-truss building on a slab foundation. Its dimensions are 866 feet long by 194 feet wide by 57 feet high (MRRR, 2006). The hangar was initially heated by a fuel-oil-fired boiler system and is currently heated by a natural-gas-fired system. Hangar 5 was used as an aircraft maintenance hangar for its entire history. Most of the building's interior space consists of the aircraft hangar bays and aircraft maintenance workshops along the western portion of the building, with hangar doors located on the airfield (western) side. The eastern portion along the Orion Street side contains administrative and training areas. A long corridor separates the administrative and training areas from the workshops.

The aircraft hangar bay space is divided into three sections: Hangar 5 North, Hangar 5 South, and Hangar 5 Center. Hangar 5 South and North sections are each made up of three aircraft bays, Bays 1 through 3 and Bays 4 through 6, respectively, and the associated maintenance shops and administrative and training classroom space. While Hangar 5 was in service, it housed two P-3 Orion squadrons, each of which was assigned a hangar section to conduct minor aircraft maintenance activities. Hangar 5 Center consists of a single maintenance bay, Bay 7, which was used for corrosion control and maintenance by the two squadrons occupying the hangar.

The hangar bay floor is covered with an epoxy coating system. The hangar bays feature a grated, main floor trench-drain, approximately 1-foot deep and 1-foot wide, running the length of the hangar in line with the edge of the hangar door openings. Two perpendicular tributary floor-trench-drains are located in both the Hangar 5 South and North sections with an additional trench-drain serving the Hangar 5 Center section. The trench-drains serve to collect and remove aircraft wash water and to intercept wind-driven rain that may enter through the hangar doors. In the event of fuel spillage or fire, the trench-drains serve to remove hazardous fuels or fire-

suppression system discharges from the hangar floor (see following paragraph). The trench-drain system is connected to an oil-water separator, located in the northeast portion of the parcel, which discharges to the sanitary sewer system.

The fire-suppression system in Hangar 5 consists of aqueous-film-forming foam (AFFF) that is dispensed from nozzles located in the ceiling of the hangar bays. Infrared heat sensors are located throughout the hangar bays and trigger the AFFF to dispense when a heat source is identified. AFFF is water-based and frequently contains smaller quantities (less than 1 percent) of hydrocarbon-based surfactants, such as sodium alkyl sulfate, fluorosurfactants, ethylene glycol, and urea. AFFF and its constituents are not classified as hazardous waste under RCRA. Four aboveground storage tanks (ASTs) containing AFFF are located in the mechanical room (Room 315); two tanks are 1,100-gallon-capacity and two are 600-gallon capacity.

According to NAS Brunswick personnel, the squadrons carried out aircraft maintenance and minor repairs in Hangar 5, with major repairs performed by the Aircraft Intermediate Maintenance Division (AIMD) in Building 250, which is attached to Hangar 4, north of the Hangar 5 parcel. The table below provides a general description of activities conducted in Hangar 5 that may have generated hazardous waste, and the location associated with each activity as performed in the respective sections of Hangar 5.

**Hangar 5 Maintenance Activities**

Activity	Description	Hangar 5 Location/Room		
		South	North	Center
Air Crew Survival Equipment	Minor repair and fabrication of survival equipment Some glue was used, battery change-out occurred, and locator-flare storage	104	225	not applicable
Power Plants	Change parts on the aircraft No maintenance performed	122	201	311
Air Frames	Change parts on the aircraft No major maintenance performed Minor grinding/welding may have occurred	121	202	311
Corrosion Control	Remove parts from air craft to perform corrosion control Grinding and painting performed	115 and hangar bay alcove	224, 203 and hangar bay alcove	313
Electrician	Remove and replace parts on aircraft No major repair work performed Minor soldering may have occurred	124	198	311
Avionics	Remove and replace parts on aircraft Some soldering performed in the shop	125	199	311
Ordnance	Load aircraft No maintenance performed	123	200	not applicable
Hazardous Materials	Storage of hazardous materials for ready issue Receive hazardous waste for disposal	Bay 1 southwest corner	Bay 6 northwest corner	311
Satellite Accumulation Area	Accumulation of hazardous waste and used oil	On ramp southwest of hangar	On ramp northwest of hangar	Bay 7 northwest corner

According to NAS Brunswick Environmental personnel, hazardous materials were signed out in small quantities (typically less than a week's supply) from the Consolidated Hazardous Material Reutilization and Inventory Management Program (CHRIMP) building (Building 81) and unused quantities were returned to Building 81. Hazardous materials were temporarily stored in lockers in the southwest corner of Bay 1, the northwest corner of Bay 6, and in Room 311 (Center section

of Hangar 5). In addition, two exterior storage rooms for hazardous materials were located at the northwestern and southwestern corners of Hangar 5, adjacent to the concrete apron.

Hangar 5's two satellite accumulation areas (SAAs) for waste are located on the apron west of the building. The Hangar 5 North SAA was located to the northwest of Hangar 5 and the Hangar 5 South SAA to the southwest. Each SAA contained two 250-gallon double-walled steel ASTs, one for waste oil and one for waste oil and mixed-lubricants. A wooden storage shed equipped with a secondary-containment bottom was located at each SAA. The sheds were for temporary storage of accumulated hazardous waste, prior to pick-up by the NAS Brunswick Environmental Department for transport to the Hazardous Waste Building (Building 45). All hazardous waste was then characterized and disposed of at approved off-site facilities. The SAA sheds also typically stored universal waste, including fluorescent light bulbs, spent lithium and Ni-CAD batteries from the aircraft, paint rags, oily rags, spent sealant, and spent aerosol cans. Hazardous waste generated in Hangar 5 Center was temporarily stored in the northwest corner of Bay 7 prior to transport to Building 45 for offsite disposal.

Photographs taken during the Hangar 5 site visit are provided in an attachment.

### **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 Hangar 5 parcel, including past use and operations at that location.

According to NAS Brunswick Environmental Department personnel, since its construction in 1982, the sole use of Hangar 5 has been as an aircraft maintenance hangar. The Environmental Department also reported that hazardous waste generated and stored at Hangar 5 included spent solvents from parts-cleaning; waste paint that may have contained lead; lead dust from soldering, welding, and grinding activities; lead-acid batteries; waste oil; and universal waste.

NAS Brunswick has a program in place that tracks hazardous waste to ensure proper handling and disposal. According to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith, hazardous waste generation was tracked by squadron. Until recently, squadrons rotated out of hangar spaces while on deployment overseas, and no single aircraft squadron was consistently in each hangar space over the life of the building. As a result, specific records of hazardous waste quantities and types generated in Hangar 5 are not available. However, the Hazardous Waste Department maintains a list of hazardous waste generated by the squadrons that shows what would typically be generated by aircraft maintenance activities conducted in the NAS Brunswick hangars. The table below lists the hazardous waste quantities generated by the VP-8 squadron during 2008 and the VP-10 squadron during 2009, prior to each vacating Hangar 5. These wastes and quantities are characteristic of the hazardous waste generated yearly during Hangar 5 operations.

### Hangar 5 Typical Annual Hazardous Waste Quantities

Description	Hangar 5 South <sup>(1)</sup> (lbs)	Hangar 5 North <sup>(2)</sup> (lbs)
adhesive	1.3	3.68
aerosol	55.02	21.34
aerosol empty	35.68	0.3
Alodine <sup>(3)</sup>	0.6	
battery lithium	8.56	22.7
battery Ni-Cad	0.72	1.24
battery Ni-Mh	2.4	
cathode ray tubes	145	132.78
engine wash (wastewater)	550	120
fuel-water mix	360	2106
JP rags (spill cleanup)	72.1	51.48
lamps, fluorescent	166.54	24.24
mercury thermostats/switches	0.02	
methylene chloride (paint stripper)		227
paint aircraft	21.16	33.62
paint rags	22.3	
paint stripper		28.32
paint waste	5.16	
sealant	122.82	54.66
sealant kit lab pack	5.26	18.56
sealant rags		9.92
SEM pen <sup>(4)</sup>	1.18	0.46
solvent	0.38	
sulfuric acid	0.86	

<sup>(1)</sup> based on VP-8 Squadron 2008 waste tracking

<sup>(2)</sup> based on VP-10 Squadron 2009 waste tracking

<sup>(3)</sup> chromate conversion coating (applied to slow metal alloy corrosion)

<sup>(4)</sup> paint pen for aircraft touch-up

Two documents pertinent to the Hangar 5 closure investigation are described below.

An April 7, 2004 letter from Captain R.S. Winneg, NAS Brunswick Commanding Officer, notified MEDEP of the release of dust containing nickel, chromium, and lead into Hangar 5 North, and the Navy's response to the release. The release occurred on March 10, 2004 while a Navy contractor was removing the existing epoxy coating in the hangar bays at Hangar 5 as part of a floor recoating project. Sometime after initiating the work, the contractor began using non-approved grit sanding material that contained nickel and chromium. While conducting the work, the contractor failed to clean the equipment filters, resulting in the release of dust containing nickel and chromium. The release occurred throughout the work area and seeped into adjoining offices and hallways. Sampling and analysis of the dust revealed the presence of nickel, chromium, and low levels of lead; however, the release was not a hazardous waste. At the direction of the Navy, the contractor cleaned the affected areas with high-efficiency particulate air (HEPA) vacuums. The cleanup was completed on April 5, 2004 (NAS Brunswick, 2004). No additional information such as post-cleaning sample results was located during the records review.

An April 6, 2009 memorandum from Ms. Carla Sanders, NAS Brunswick Asbestos and Lead Paint Coordinator, reported screening wipe sample results for two areas of Hangar 5 South that were used as aircraft maintenance shops. Three wipe samples were collected in Room 125, Avionics, and three were collected in Room 118, the Hangar Bay Alcove, where painting

operations took place. Lead concentrations in wipe samples ranged from non-detected (on the work area wall in Room 125) to 60 µg/ft<sup>2</sup> (on an overhead pipe in Room 125), as shown in the table below (NAS Brunswick, 2009).

**Hangar 5 2009 Screening Wipe Sample Results  
(units: µg/ft<sup>2</sup>)**

ID	Location	lead	cadmium	chromium
W-1	Room 125 Pipe w/fiberglass insulation	60.0	--	--
W-2	Room 125 Wall over work area	<10.0	--	--
W-3	Room 125 Floor in work area	15.0	--	--
W-4	Room A-118 Conduit	25.0	--	--
W-5	Room A-118 Floor in corner	45.0	--	--
W-6	Room A-188 Floor in corner	--	<13.0	<25.0

Notes:

MEDEP criteria for lead-contaminated settled dust, applicable for RCRA closures:

Floors: 40 µg/ft<sup>2</sup>

Walls and other flat surfaces up to a height of 8 feet: 250 µg/ft<sup>2</sup>

Surfaces above 8 feet: visibly clean (dust-free)

< less than

µg/ft<sup>2</sup> micrograms per square foot

-- not analyzed

Additional records reviewed include: historical aerial photographs; the NAS Brunswick Other Environmental Liabilities (OEL) Database; area-specific reports; facility plans and drawings; and hazardous operation records. Aerial photographs dated 1958, 1978, 1984, 1989, 1993, and 1997 (all produced by James W. Sewall Company) were reviewed to provide historical information.

Prior to the 1956 facility plan, no buildings were located in the Hangar 5 parcel. In 1946, Range Road and an unidentified taxiway are shown. In 1952, the new runway configuration is shown. The 1956 plan shows Ordnance Road No. 1 along with Buildings 53, 54, 55, and 57, which are all weapons magazines in the Hangar 5 parcel. In the 1958 aerial photograph, Hangar 4 and Building 250 are shown to the north of the Hangar 5 parcel, with a concrete apron area and aircraft also present. Beginning with the 1983 aerial photograph, Hangar 5 is shown in its current location with associated parking areas to the north, south, and east.

The NAS Brunswick Removed Transformer Database lists two non-polychlorinated-biphenyl (PCB)-containing electrical transformers for Hangar 5 (PWD, 2010). The serial numbers for the RTE-manufactured units indicate that they were manufactured after 1979 and therefore are 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). Due to the age of the building, it is not possible that PCB-containing transformers were in service at the Hangar 5 transformer pad at any time in the past.

Transformer	Manufacturer	Serial No.	Manufacture Date	Notes
750-kVa non-PCB-containing, pad-mounted	RTE <sup>(1)</sup>	RTE 896003283 <sup>(2)</sup>	1989	Mineral Oil
750-kVa non-PCB-containing, pad-mounted	RTE <sup>(1)</sup>	RTE 896003752 <sup>(2)</sup>	1989	Mineral Oil

<sup>(1)</sup> Rural Transformer & Electric (RTE), now owned by Cooper Power Systems

<sup>(2)</sup> The first two digits of the serial numbers denote the year of manufacture (EES, 1998)

According to NAS Brunswick records, the following USTs were present at Hangar 5 (Environmental Department, 2009). Other information relating to these tanks was not found.

Serial No.	Capacity and Make	Product	Installation Date	Removal Date
10045-001	1,000 gallon steel	Diesel (hot water)	1982	Sep 1992
10045-488	1,000 gallon steel	No. 2 fuel oil (hot water)	Sep 1992	June 1999

According to NAS Brunswick records, the following ASTs were present at Hangar 5 (Environmental Department, 2009). Other information relating to these tanks was not found.

Serial No.	Capacity and Make	Product	Installation Date	Removal Date
A5.0	500 gallons DWSV	Waste Oil (VP10 north SAA)	1996	Inactive
A5.1	500 gallons DWSV	Waste Oil (VP10 north SAA)	1996	Inactive
A5.2	500 gallons DWSV	Waste Oil (VP8 south SAA)	1996	2009
A5.3	500 gallons DWSV	Waste Oil (VP8 south SAA)	1996	2009
A5.4	20,000 gallons DWS	No. 1 fuel oil (heating)	1999	Inactive
A5.5	20,000 gallons DWS	No. 1 fuel oil (heating)	1999	Inactive
A5.6	1,000 gallon DWS	Diesel (hot water)	1999	Active
A5.7	100 gallons DWS	Diesel (generator)	2005	Active

DWS double-walled steel  
DWSV double-walled, steel vault

In addition, two 1,100-gallon-capacity ASTs and two 600-gallon-capacity ASTs containing AFFF are located in the mechanical room (Room 315) of Hangar 5.

No groundwater investigations have been conducted in the vicinity of the Hangar 5 parcel; therefore groundwater characterization information for the parcel is not available. Information available for known groundwater contamination areas at NAS Brunswick was reviewed to determine if groundwater underlying the Hangar 5 parcel could potentially be impacted by another (off-parcel) source area.

#### 4. SITE VISIT AND INVESTIGATION

A Hangar 5 site visit was conducted on June 30, 2009 by Tetra Tech personnel, Mr. Brandon Smith, P.E. and Mr. James Forrelli, P.E. The purpose of this visit was to verify information gathered during the records search and to collect additional information as necessary to prepare this RCRA Partial Closure Report. Tetra Tech personnel were accompanied by Mr. D. Bruce Smith, the NAS Brunswick Hazardous Waste Manager. The Hangar 5 parcel was visually inspected for signs of hazardous waste generation or storage. Site visit observations, recorded on the attached Building Inspection Form <sup>(1)</sup> are summarized below:

- At the time of inspection, Hangar 5 was not occupied and in good condition. Office furniture, workbenches, and storage lockers were present in the workshops and administrative/classroom spaces.
- Evidence of potential past hazardous waste generation activities was observed. A summary of potential hazardous waste areas identified during the building inspection is provided in Table A of the attached Building Inspection Form.
- The floor trench-drains were visibly clean; no solids or sediment were present (trenches were recently cleaned as part of the Hangar 5 layaway process).
- No evidence of hazardous waste residues was observed.
- No signs of a past release (staining, unusual odors, stressed vegetation, etc.) nor structural modifications that could conceal signs of a past release were observed.
- Hazardous waste was temporarily stored at the interior hazardous waste accumulation areas located in the southwest corner of Bay 1, the northwest corner of Bay 7, and the northwest corner of Bay 6, prior to being moved to the exterior SAAs located at the northwest and southwest corners of Hangar 5 on the concrete airfield apron. The SAAs each included hazardous waste storage lockers and two waste-oil ASTs. The SAAs are

used as accumulation points for hazardous waste prior to its being transported to Building 45 for off-site disposal at an approved facility.

- The SAA hazardous waste shed and waste oil tanks for Hangar 5 South had been removed prior to the site visit. The SAA hazardous waste shed for Hangar 5 North had also been removed, and the associated waste oil tanks had been cleaned and were still in place. No visual staining, cracking, spalling, or discoloration of the concrete was noted. The expansion joints appeared in good condition. The vegetation adjacent to the south end of the Hangar 5 South SAA was not distressed. Vegetated areas are not present near the Hangar 5 North SAA.

Based on the research and site visit observations, specific areas within Hangar 5 were identified for sample collection to determine if hazardous waste residues were present. As listed in Table 1, 23 areas where hazardous waste may have been generated or stored were targeted for sample collection: eleven areas in Hangar 5 North; five areas in Hangar 5 Center; and seven areas in Hangar 5 South. These areas included the corrosion control, airframes, and avionic electronics (AE) shops; the hazardous material storage areas (in event of a spill); and the floor trenches. On December 1, 2009, Tetra Tech collected wipe samples from 44 locations at the targeted areas, as shown on Figures 3A and 3B. Forty-eight wipe samples were submitted for RCRA 8 metals analysis and 35 wipe samples were submitted for semi-volatile organic compound (SVOC) analysis by Tetra Tech's subcontractor analytical laboratory (Analytics Environmental Laboratory [Analytics], Portsmouth, New Hampshire). The Hangar 5 investigation wipe sample results are presented in Table 2.

The wipe sample 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 ( $\mu\text{g}/\text{ft}^2$ )
- Walls and other flat surfaces up to a height of 8 feet: 250  $\mu\text{g}/\text{ft}^2$
- Surfaces above 8 feet: visibly clean (dust-free)

There are no Maine criteria for the other seven RCRA metals. For informational purposes, wipe sample results for the other seven metals were compared with available World Trade Center Settled Dust Screening Values (WTC, 2003).

Lead levels in floor wipe samples were found to exceed the MEDEP criterion ( $40 \mu\text{g}/\text{ft}^2$ ) at the following locations:

Hangar 5 Center

Room 313 – Corrosion Control (floor)      The lead level in one of two samples exceeded the criterion ( $130 \mu\text{g}/\text{ft}^2$  in sample B5C-WP07). A lead level of  $21 \mu\text{g}/\text{ft}^2$  was detected in the second sample (B5C-WP08).

Hangar 5 North

Hangar Bay 6 hazardous material storage area, northwest corner (floor)      The lead level in one of four samples exceeded the criterion ( $42 \mu\text{g}/\text{ft}^2$  in sample B5N-WP04). Lead levels of 34, 33, and  $30 \mu\text{g}/\text{ft}^2$  were detected in the other three samples (B5N-WP01 through -WP03).

Room 222 – Hazardous Materials Storage Area (floor)      The lead level in one of four samples exceeded the criterion ( $69 \mu\text{g}/\text{ft}^2$  in sample B5N-WP10). Lead levels of 33, 27, and  $28 \mu\text{g}/\text{ft}^2$  were detected in the other three samples (B5N-WP07 through -WP09).

Room 203 - Corrosion Control (floor)      The lead level in one of two samples ( $41 \mu\text{g}/\text{ft}^2$  in sample B5N-WP12) exceeded the criterion. A lead level of  $24 \mu\text{g}/\text{ft}^2$  was detected in the second sample (B5N-WP11).

Based on these analytical results, it was concluded that floor-cleaning at Hangar 5 was required to remove surface residue with lead levels exceeding the MEDEP floor criterion of 40  $\mu\text{g}/\text{ft}^2$ . Floor-cleaning was required at Bay 6 (northwest corner) and in Rooms 313, 222, and 203.

Lead levels of floor-trench wipe samples were compared against the MEDEP wall criterion (250  $\mu\text{g}/\text{ft}^2$ ) for informational purposes. Lead levels above this criterion were reported for three of six trench sample locations, as follows: the Hangar 5 Center eastern trench (360  $\mu\text{g}/\text{ft}^2$ ); the Hangar 5 North northern-central trench (300  $\mu\text{g}/\text{ft}^2$ ); and the Hangar 5 South southern-central trench (330  $\mu\text{g}/\text{ft}^2$ ). While lead levels of floor-trench wipe samples are greater than 250  $\mu\text{g}/\text{ft}^2$ , this MEDEP wall lead criterion does not apply to these locations. As these locations are not readily accessible by workers and a visible clean condition has been achieved by the recent cleaning, additional cleaning of the trenches is not required.

## 5. HAZARDOUS WASTE GENERATION AND STORAGE

The records research, site visit observations, NAS Brunswick Environmental Department personnel interviews, and investigation results document that hazardous waste was generated and stored at the Hangar 5 parcel while the hangar was in service. As discussed in Section 3.0, NAS Brunswick tracks hazardous waste to ensure proper handling and disposal. According to NAS Brunswick personnel, hazardous waste stored or generated at Hangar 5 included solvents from parts cleaning; waste paint that may have contained lead; lead dust from soldering, welding, and grinding activities; lead-acid batteries; waste oil; and universal waste..

## 6. CLOSURE ACTIONS

Based on the investigation results, closure remedial actions were undertaken at Hangar 5 to remove waste residues as required to achieve MEDEP hazardous waste closure requirements. Closure actions consisted of the cleaning of floors in the following areas:

### Hangar 5 North

Hangar Bay 6 hazardous material storage area (northwest corner)

Room 222 – Hazardous Materials Storage Area

Room 203 - Corrosion Control

### Hangar 5 Center

Room 313 – Corrosion Control

Prior to implementing the waste residue removal actions, a series of housekeeping actions was performed to prepare the buildings for layaway. This phase of work also included cleaning the floor trenches as well as trash and debris removal.

Tetra Tech's cleaning subcontractor (Global Remediation Services [Global]) performed floor-cleaning activities at Hangar 5 on March 22 and 23, 2010. Global initiated cleaning activities in the Hangar Bay 6 hazardous material storage area on March 22 and followed with cleaning of the hazardous materials storage area (Room 222), and the two Corrosion Control rooms (Rooms 203 and 313) on March 23. Prior to cleaning, floor openings were covered and sealed with polyethylene sheeting. The floor was then manually swept and then vacuumed with a HEPA vacuum. After sweeping and vacuuming, floors were sprayed with a 2-percent, lead-specific detergent solution, scrubbed, and pressure-washed using a 5,000-pounds-per-square-inch (psi) steam-cleaner. All cleaning wastewater was containerized using a wet-vacuum, placed in 55-gallon drums (3 drums generated) and transferred to the NAS Brunswick hazardous waste department for disposal. Upon completion, the Tetra Tech field representative performed a visual inspection of the cleaned area.

After the work areas were allowed to dry, twelve confirmatory wipe samples were collected for lead analysis by Analytics. Confirmation sample results are provided in Table 3 (see Figure 4 for sample locations). As shown, lead was not detected in any of the post-cleaning wipe samples.

## 7. OTHER ENVIRONMENTAL CONSIDERATIONS

USTs or ASTs known to be associated with Hangar 5 are discussed in Sections 3 and 4. No other tanks were observed in the immediate vicinity of Hangar 5. The facility space is heated by natural gas heat provided from off-base public utility.

## 8. LIMITATIONS

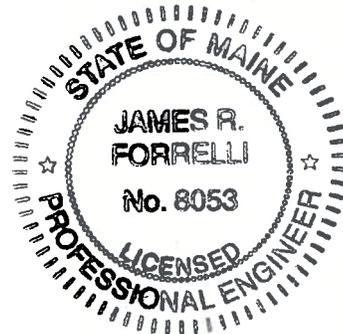
This investigation of the hazardous waste closure requirement applies to the Hangar 5 parcel (as shown on Figure 2) only. The Building 554 parcel, which is within the Hanger 5 parcel, was closed under a separate RCRA Partial Closure certification. Any line shack temporary structures currently within the Hangar 5 parcel are excluded from the RCRA Partial Closure certification.

## 8. CERTIFICATION

Historical operations resulted in the generation, accumulation and storage of hazardous waste at the Hangar 5 parcel, NAS Brunswick, Maine. Based on the findings of the investigation as reported in this Partial Closure report, the hazardous waste closure of the Hangar 5 parcel was completed in accordance with the provisions of MEDEP Regulations Chapter 851, Standards for Generators of Hazardous Waste, Section 11.



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



<sup>(1)</sup> 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 not 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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Tetra Tech NUS, 2010. RCRA Partial Closure Report for Building 554-FSU CPRW 5 Parcel, Naval Air Station Brunswick, Maine. March.

World Trade Center (WTC), 2003. Table A-3 Settled Dust Screening Values and Supporting Toxicity Criteria from World Trade Center Indoor Environmental Assessment: Selecting Contaminants of Potential Concern and Setting Health-Based Benchmarks, May 2003.

**TABLE 1**  
**RCRA CLOSURE INVESTIGATION WIPE SAMPLE LOCATIONS**  
**RCRA PARTIAL CLOSURE REPORT**  
**HANGAR 5 – AIRCRAFT MAINTENANCE HANGAR PARCEL**  
**NAVAL AIR STATION BRUNSWICK, MAINE**  
 Page 1 of 2

Location	Sample ID <sup>(1)</sup>	RCRA 8 Metals	SVOCs	Comments
<b>Hangar 5 North</b>				
Hangar Bay 6 hazardous material storage area (northwest corner) (floor)	B5N-WP01	X	X	
	WP-DUP01	X	X	Duplicate of NASB-B5N-WP01
	B5N-WP02	X	X	
	B5N-WP03	X	X	
	B5N-WP04	X	X	
Room 223 - Corrosion Control - floor	B5N-WP05	X	X	Lab QC - Metals/SVOC
	B5N-WP06	X	X	
Room 222 – Hazardous Materials Storage Area (floor)	B5N-WP07	X	X	
	B5N-WP08	X	X	
	B5N-WP09	X	X	
	B5N-WP10	X	X	
Room 203 - Corrosion Control (floor)	B5N-WP11	X	X	
	B5N-WP12	X	X	
Room 202 - Airframes Shop (floor)	B5N-WP13	X	--	
	B5N-WP14	X	--	
Room 199 - AE Shop (table)	B5N-WP15	X	--	
	WP-DUP02	X	--	Duplicate of B5N-WP15
Room 199 - AE Shop (floor)	B5N-WP16	X	--	
Room 198 - AE Shop (floor)	B5N-WP17	X	--	
Room 198 - AE Shop (table)	B5N-WP18	X	--	
North central floor drain trench	B5N-WP19	X	X	
South central floor drain trench	B5N-WP20	X	X	
<b>Hangar 5 Center</b>				
Hangar Bay 7 Hazardous material storage area (northwest corner) (floor)	B5C-WP01	X	X	
	B5C-WP02	X	X	
	B5C-DUP03	X	X	Duplicate of NASB-B5C-WP02
	B5C-WP03	X	X	
	B5C-WP04	X	X	

**TABLE 1**  
**RCRA CLOSURE INVESTIGATION WIPE SAMPLE LOCATIONS**  
**RCRA PARTIAL CLOSURE REPORT**  
**HANGAR 5 – AIRCRAFT MAINTENANCE HANGAR PARCEL**  
**NAVAL AIR STATION BRUNSWICK, MAINE**  
 Page 2 of 2

Location	Sample ID <sup>(1)</sup>	RCRA 8 Metals	SVOCs	Comments
<b>Hangar 5 Center (continued)</b>				
Western floor drain trench	B5C-WP05	X	X	
Eastern floor drain trench	B5C-WP06	X	X	
Room 313 - Corrosion Control (floor)	B5C-WP07	X	X	
	B5C-WP08	X	X	Lab QC - Metals/SVOC
Room 311 - Hazardous material storage area/maintenance area (floor)	B5C-WP09	X	X	
	B5C-WP10	X	X	
<b>Hangar 5 South</b>				
North central floor drain trench	B5S-WP01	X	X	
	WP-DUP04	X	X	Duplicate of NASB-B5S-WP01
South central floor drain trench	B5S-WP02	X	X	
Room 125 - AE shop soldering area (floor)	B5S-WP03	X	--	
	B5S-WP04	X	--	
Room 124 - AE shop soldering area (floor)	B5S-WP05	X	--	
	B5S-WP06	X	--	
Room 121 - Air Frames (floor)	B5S-WP07	X	--	
	B5S-WP08	X	--	
Room 118 - Corrosion Control Alcove (floor)	B5S-WP09	X	X	
	B5S-WP10	X	X	
Hangar Bay 1 Hazardous material storage area in (southwest corner) (floor)	B5S-WP11	X	X	
	B5S-WP12	X	X	
	B5S-WP13	X	X	
	B5S-WP14	X	X	

## Notes:

<sup>(1)</sup> Sample prefix "NASB" is not shown.

All samples were collected December 1, 2009.

RCRA 8 Metals      arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver.

AE                    avionic electronics

SVOCs              semi-volatile organic compounds

**TABLE 2  
INVESTIGATION WIPE SAMPLE RESULTS  
RCRA PARTIAL CLOSURE REPORT  
HANGAR 5 – AIRCRAFT MAINTENANCE HANGAR PARCEL  
NAVAL AIR STATION BRUNSWICK, MAINE  
Page 1 of 3**

SAMPLE ID <sup>(1)</sup>				B5C-WP01	NASB-B5C-WP02	B5C-WP02-D	B5C-WP03	B5C-WP04	B5C-WP05	B5C-WP06	B5C-WP07	B5C-WP08	B5C-WP09	B5C-WP10	B5N-WP01	B5N-WP01-D	B5N-WP02	B5N-WP03	B5N-WP04	B5N-WP05	B5N-WP06	B5N-WP07	B5N-WP08	B5N-WP09	B5N-WP10		
LOCATION				B5C-WP01	B5C-WP02	B5C-WP02	B5C-WP03	B5C-WP04	B5C-WP05	B5C-WP06	B5C-WP07	B5C-WP08	B5C-WP09	B5C-WP10	B5N-WP01	B5N-WP01	B5N-WP02	B5N-WP03	B5N-WP04	B5N-WP05	B5N-WP06	B5N-WP07	B5N-WP08	B5N-WP09	B5N-WP10		
SAMPLE DATE				12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09		
CRITERIA	WTC	MEDEP Wall	MEDEP Floor	Hangar 5 Center Hazmat Storage Area					Hangar 5 Center Trench		Room 313		Room 311		Hangar 5 North Hazmat Storage Area					Room 223		Room 222					
<b>SEMIVOLATILES (µg/ft<sup>2</sup>)</b>																											
benzaldehyde	--	--	--	19 U	19 U	19 U	19 U	19 U	19 U	18 J	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U					
bis(2-ethylhexyl)phthalate	--	--	--	19 U	33 U	28 U	29 U	35 U	44 U	190	57 U	50 U	100 U	220	27 UJ	56 UJ	30 U	46 U	30 U	300	250	33 U	28 U	79 U	72 U		
butyl benzyl phthalate	--	--	--	19 U	16 J	14 J	18 J	17 J	64	550	56	41	100	430	17 J	28	12 J	23	12 J	540	380	48	330	110	93		
caprolactam	--	--	--	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U	46 U		
diethyl phthalate	--	--	--	19 U	19 U	19 U	19 U	19 U	19 U	19 U	16 J	19 U	11 J	19 U	19 U	13 J	19 U	19	14 J	15 J	18 J	29	20	12 J	19 U		
di-n-octyl phthalate	--	--	--	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U	19 U		
<b>METALS (µg/ft<sup>2</sup>)</b>																											
arsenic	36	--	--	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	5.7	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U							
barium	10000	--	--	21	25	20	20	36	790	270	85	52	27	21	31	22	33	27	42	260	380	680	340	48	190		
cadmium	140	--	--	2.4	3.3	2.5	1.7	6.9	370	82	88	24	8.7	7.9	18 J	5.9 J	7.2	7.8	16	11	12	15	5.9	120	30		
chromium	440	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	190	53	72	21	9.3 U	9.3 U	16	12	15	10	17	15	15	21	9.3 U	9.3 U	19		
lead	--	250	40	25	28	23	24	34	360	120	130	21	25	9.3	34	27	33	30	42	26	26	33	27	28	69		
mercury	15	--	--	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.13							
silver	730	--	--	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	13	1.9 U	3.9	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U		

**TABLE 2  
INVESTIGATION WIPE SAMPLE RESULTS  
RCRA PARTIAL CLOSURE REPORT  
HANGAR 5 – AIRCRAFT MAINTENANCE HANGAR PARCEL  
NAVAL AIR STATION BRUNSWICK, MAINE  
Page 2 of 3**

SAMPLE ID <sup>(1)</sup>				B5N-WP11	B5N-WP12	B5N-WP13	B5N-WP14	B5N-WP15	B5N-WP15-D	B5N-WP16	B5N-WP17	B5N-WP18	B5N-WP19	B5N-WP20	B5S-WP01	B5S-WP01-D	B5S-WP02	B5S-WP03	B5S-WP04	B5S-WP05	B5S-WP06	B5S-WP07	B5S-WP08	B5S-WP09	B5S-WP10	
LOCATION ID				B5N-WP11	B5N-WP12	B5N-WP13	B5N-WP14	B5N-WP15	B5N-WP15	B5N-WP16	B5N-WP17	B5N-WP18	B5N-WP19	B5N-WP20	B5S-WP01	B5S-WP01	B5S-WP02	B5S-WP03	B5S-WP04	B5S-WP05	B5S-WP06	B5S-WP07	B5S-WP08	B5S-WP09	B5S-WP10	
SAMPLE DATE				12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	12/01/09	
CRITERIA	WTC	MEDEP Wall	MEDEP Floor	Room 203		Room 202		Room 199 table			Room 199	Room 198		Hangar 5 North Trench		Hangar 5 South Trench			Room 125		Room 124		Room 121		Room 118	
SEMIVOLATILES (µg/ft <sup>2</sup> )																										
benzaldehyde	--	--	--	19 U	19 U	NA	NA	NA	NA	NA	NA	NA	19 U	19 U	19 U	19 U	19 U	NA	19 U	19 U						
bis(2-ethylhexyl)phthalate	--	--	--	230	93 U	NA	NA	NA	NA	NA	NA	NA	29 U	82 U	25 U	19 U	41 U	NA	300	110 U						
butyl benzyl phthalate	--	--	--	490	170	NA	NA	NA	NA	NA	NA	NA	65	370	20	13 J	22	NA	110	83						
caprolactam	--	--	--	46 U	46 U	NA	NA	NA	NA	NA	NA	NA	46 U	46 U	46 U	46 U	46 U	NA	46 U	46 U						
diethyl phthalate	--	--	--	34	32	NA	NA	NA	NA	NA	NA	NA	17 J	22	19 U	19 U	19 U	NA	19 U	19 U						
di-n-octyl phthalate	--	--	--	19 U	19 U	NA	NA	NA	NA	NA	NA	NA	19 U	19 U	19 U	19 U	19 U	NA	19 U	19 U						
METALS (µg/ft <sup>2</sup> )																										
arsenic	36	--	--	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	6.9	4.6 U	4.6	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U	4.6 U				
barium	10000	--	--	26	58	59	22	15	18	41	20	12	1000	520	370 J	170 J	490	22	100	16	30	63	15	32	18	
cadmium	140	--	--	9.3	16	18	4.5	28	24	11	2.8	15	230	250	180 J	78 J	290	21	17	5.3	7.8	19	5	9.1	4.5	
chromium	440	--	--	25	20	27	9.3 U	9.3 U	9.3 U	30	55	9.3 U	190	140	140 J	64 J	47	9.3 U	9.3 U	9.3 U	9.3 U	15	9.3 U	170	9.3 U	
lead	--	250	40	24	41	33	23	25	25	29	22	22	300	160	150	65	330	7.3	11	4.7	8.9	19	4.6	6.8	6.9	
mercury	15	--	--	0.093 U	0.093 U	0.093 U	0.093 U	0.093 U	0.93	2.7	0.093 UJ	0.39 J	0.093 U	0.093 U												
silver	730	--	--	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	4.6	4.1	7.9 J	1.9 UJ	1.9 U	1.9 U												

**TABLE 2  
INVESTIGATION WIPE SAMPLE RESULTS  
RCRA PARTIAL CLOSURE REPORT  
HANGAR 5 – AIRCRAFT MAINTENANCE HANGAR PARCEL  
NAVAL AIR STATION BRUNSWICK, MAINE  
Page 3 of 3**

SAMPLE ID <sup>(1)</sup>				B5S- WP11	B5S- WP12	B5S- WP13	B5S- WP14
LOCATION ID				B5S- WP11	B5S- WP12	B5S- WP13	B5S- WP14
SAMPLE DATE				12/01/09	12/01/09	12/01/09	12/01/09
CRITERIA	WTC	MEDEP Wall	MEDEP Floor	Hangar 5 South Hazmat Storage Area			
<b>SEMIVOLATILES (µg/ft<sup>2</sup>)</b>							
benzaldehyde	--	--	--	19 U	19 U	19 U	19 U
bis(2-ethylhexyl)phthalate	--	--	--	22 U	57 U	53 U	1200
butyl benzyl phthalate	--	--	--	19 U	17 J	25	15 J
caprolactam	--	--	--	46 U	46 U	46 U	46 U
diethyl phthalate	--	--	--	19 U	19 U	19 U	19 U
di-n-octyl phthalate	--	--	--	19 U	44	39	2400
<b>METALS (µg/ft<sup>2</sup>)</b>							
arsenic	36	--	--	4.6 U	4.6 U	4.6 U	4.6 U
barium	10000	--	--	20	20	20	12
cadmium	140	--	--	2.3	4	4.2	2.5
chromium	440	--	--	9.3 U	9.3 U	9.3 U	9.3 U
lead	--	250	40	14	10	7.8	6.4
mercury	15	--	--	0.093 U	0.093 U	0.093 U	0.093 U
silver	730	--	--	1.9 U	1.9 U	1.9 U	1.9 U

Notes:

<sup>(1)</sup> 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

µg/ft<sup>2</sup> micrograms per square foot

-- no criteria available

J estimated

NA not applicable

U not detected (with associated detection limit)

**TABLE 3  
RCRA CLOSURE POST-CLEANING FLOOR WIPE SAMPLE RESULTS  
RCRA PARTIAL CLOSURE REPORT  
HANGAR 5 – AIRCRAFT MAINTENANCE HANGAR PARCEL  
NAVAL AIR STATION BRUNSWICK, MAINE**

Location	Sample ID <sup>(1)</sup>	Lead ( $\mu\text{g}/\text{ft}^2$ )
<b>Hangar 5 North</b>		
Hangar Bay 6 hazardous material storage area (northwest corner)	B5N-WP01	3.7 U
	B5N-WP02	3.7 U
	B5N-WP03	3.7 U
	B5N-WP04	3.7 U
Room 222 – Hazardous Materials Storage Area	B5N-WP05	3.7 U
Room 203 - Corrosion Control	B5N-WP06	3.7 U
	B5N-WP07	3.7 U
	B5N-WP08	3.7 U
<b>Hangar 5 Center</b>		
Room 313 – Corrosion Control	B5C-WP09	3.7 U
	B5C-WP10	3.7 U
	B5C-WP11	3.7 U
	B5C-WP12	3.7 U

## Notes:

<sup>(1)</sup> Sample prefix "NASB" is not shown.

All samples were collected March 23, 2010.

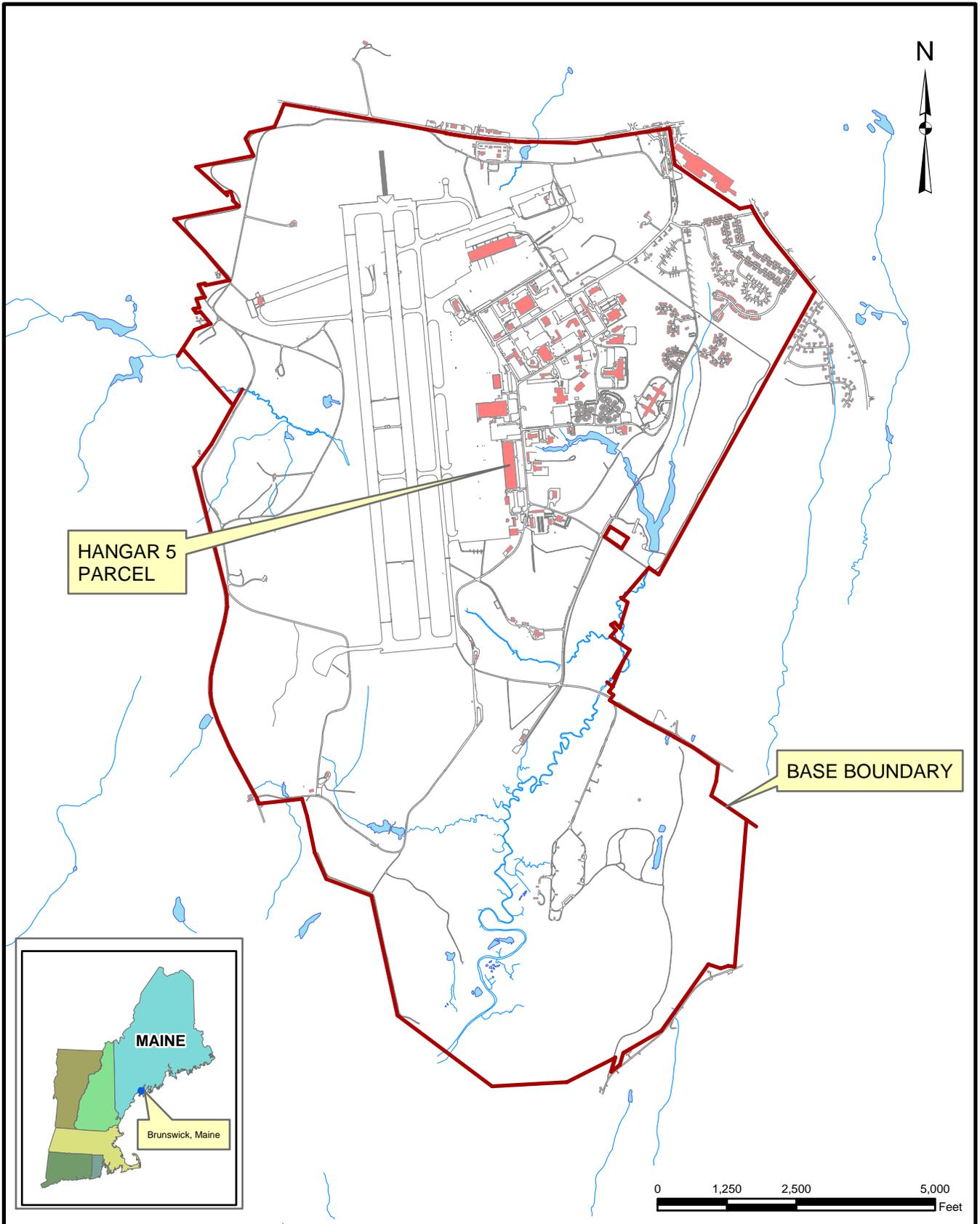
Wipe sample surface area: 10 cm by 10 cm

MEDEP criterion for lead-contaminated settled dust on floors applicable for RCRA closures is 40 ( $\mu\text{g}/\text{ft}^2$ )

J estimated result

$\mu\text{g}/\text{ft}^2$  micrograms per square foot

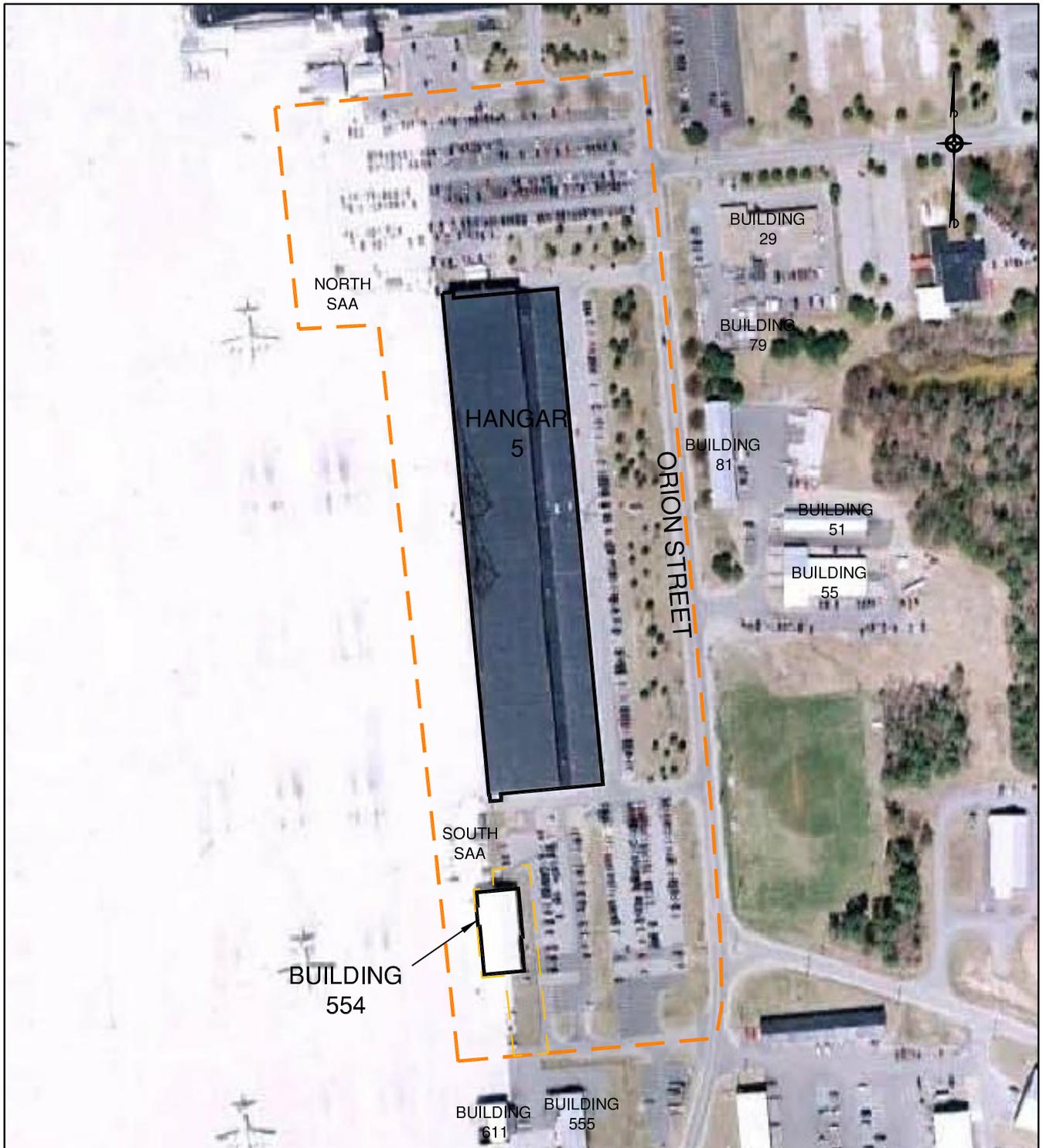
U not detected (with associated detection limit)



Tetra Tech NUS, Inc.

SITE LOCATION MAP  
 HANGAR 5 PARCEL  
 RCRA PARTIAL CLOSURE REPORT  
 NAS BRUNSWICK, MAINE

SCALE AS NOTED	
FILE I:\02258\CP_DR\NASB_H5_LOCUS.MXD	
REV 0	DATE 05/14/10
FIGURE NUMBER 1	



- - - - HANGAR 5 PARCEL BOUNDARY
- - - - BUILDING 554 PARCEL BOUNDARY



Building Corner	Northing	Easting
Northeast	385818.140	3015068.340
Southeast	384978.280	3015146.100
Southwest	384949.530	3014955.110
Northwest	385810.230	3014874.180

Coordinates are in NAD 1983, Maine West, Feet



TETRA TECH NUS, INC.

**SITE PLAN**  
**HANGAR 5 PARCEL**  
**RCRA PARTIAL CLOSURE REPORT**  
**NAS BRUNSWICK, MAINE**

SCALE  
AS NOTED

FILE  
\\.\NASB\_H5\_ORTHO.DWG

REV	DATE
0	05/14/10

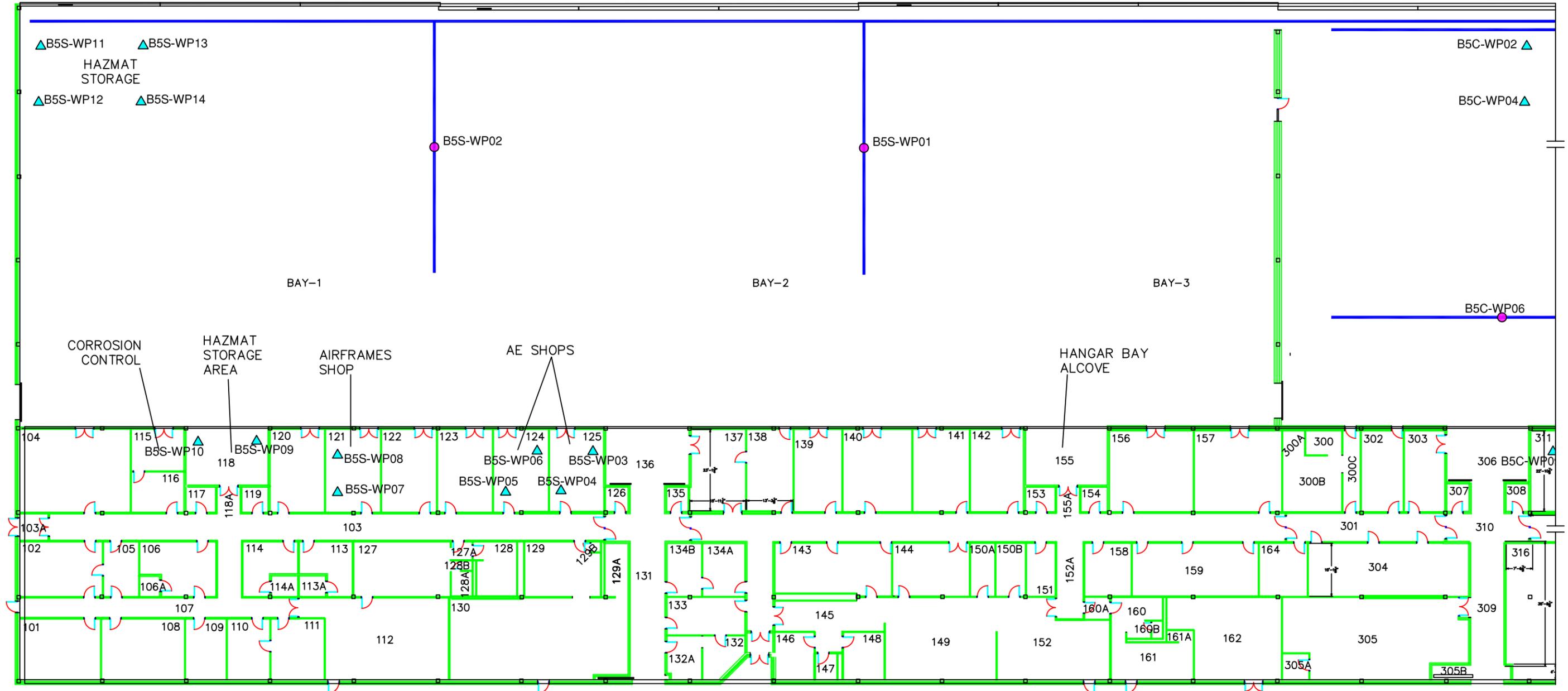
FIGURE NUMBER  
FIGURE NO. 2

ACAD: \02258\GP.FT\NASB\_H5\_PRE\_SAMP\_S.DWG 05/14/10 DWM



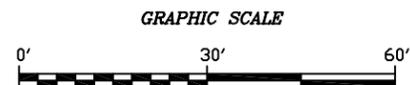
# HANGAR 5 SOUTH

# HANGAR 5 CENTER



### LEGEND

- WP10▲ FLOOR WIPE SAMPLES
- WP01● TRENCH WIPE SAMPLES
- FLOOR TRENCHES  
(1 FOOT DEEP - 1 FOOT WIDE)



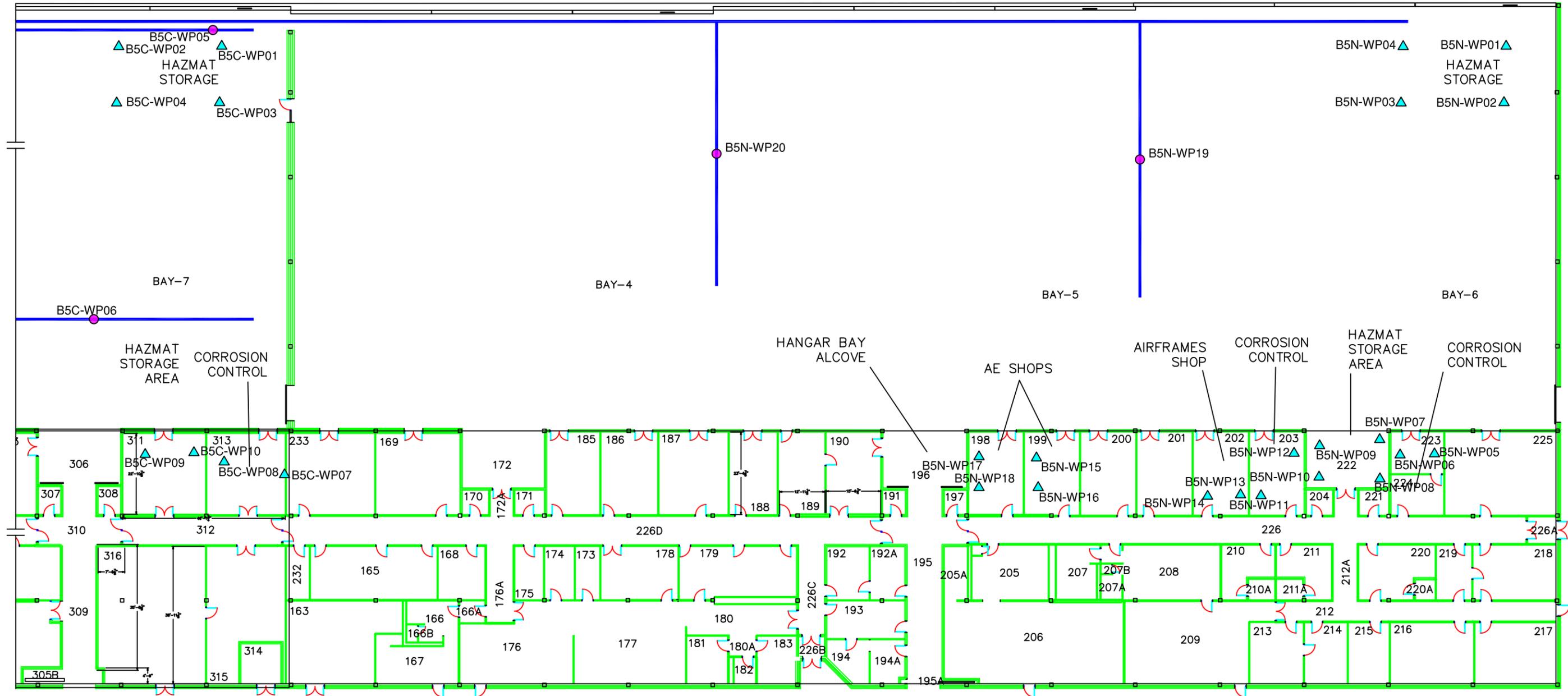
TETRA TECH NUS, INC.

PRE-CLEANING WIPE SAMPLE LOCATION MAP  
HANGAR 5 PARCEL  
NAVAL AIR STATION  
BRUNSWICK, MAINE

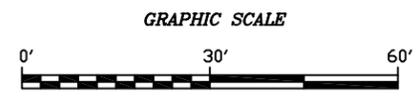
FILE \\.\NASB_H5_PRE_SAMP_S.DWG	SCALE AS NOTED
FIGURE NUMBER FIGURE NO. 3A	REV DATE 0 05/14/10

# HANGAR 5 CENTER

# HANGAR 5 NORTH



- B5N-WP10 ▲ FLOOR WIPE SAMPLES
- B5N-WP20 ● TRENCH WIPE SAMPLES
- FLOOR TRENCHES (1 FOOT DEEP - 1 FOOT WIDE)

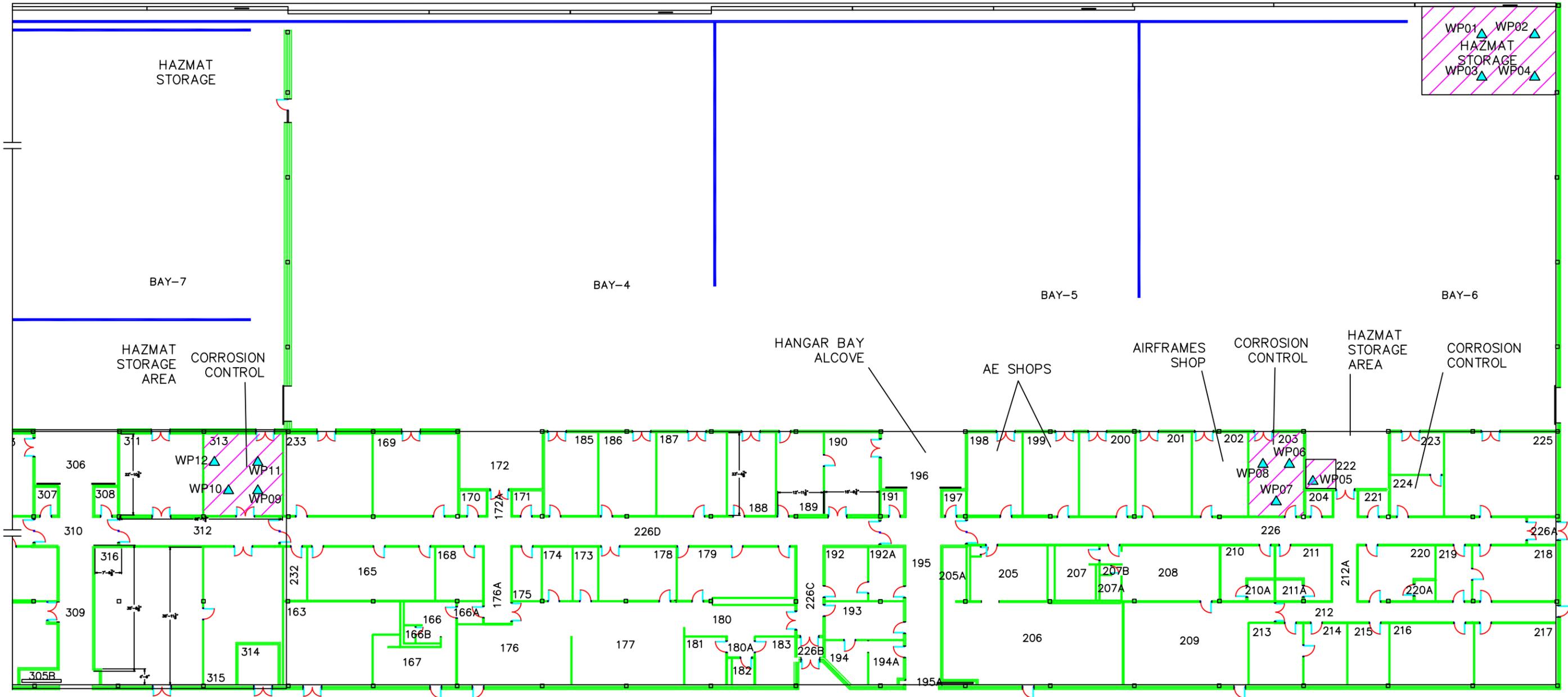


PRE-CLEANING WIPE SAMPLE LOCATION MAP  
 HANGAR 5 PARCEL  
 NAVAL AIR STATION  
 BRUNSWICK, MAINE

FILE \\.\NASB_H5_PRE_SAMP_N.DWG	SCALE AS NOTED
FIGURE NUMBER FIGURE NO. 3B	REV DATE 0 05/14/10

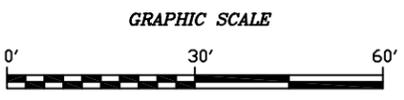
# HANGAR 5 CENTER

# HANGAR 5 NORTH



### LEGEND

- WP01 ▲ FLOOR WIPE SAMPLES
- DECONTAMINATION WORK AREA
- FLOOR TRENCHES  
(1 FOOT DEEP - 1 FOOT WIDE)



POST-CLEANING WIPE SAMPLE LOCATION MAP  
HANGAR 5 PARCEL  
NAVAL AIR STATION  
BRUNSWICK, MAINE

FILE \\.\NASB_H5_POST_SAMP_N.DWG	SCALE AS NOTED
FIGURE NUMBER FIGURE NO. 4	REV DATE 0 05/14/10

**BUILDING INSPECTION FORM  
RCRA PARTIAL CLOSURE PROGRAM  
NAS BRUNSWICK  
BRUNSWICK, MAINE  
CTO WE22**

**Inspection Date:** 6/30/2009  
**Personnel:** Brandon Smith, P.E. / James Forrelli, P.E.  
**Weather:** Overcast, 60s

<b>GENERAL BUILDING INFORMATION / USES</b>	
Building Name:	Hangar 5
Function:	Aircraft Maintenance Hangar
Size:	163,454 SF
Year of Construction:	1982
<p>Hangar 5 is located west of Orion Street with the runways and aprons to the immediate west of the Hangar at NAS Brunswick. It was constructed in 1982 and served an aircraft maintenance hangar for P3 Orion squadrons for its entire history. Hangar 5 consists of a 163,454 square-foot single-story steel truss building on a slab foundation.</p> <p>Hangar 5 was used as an aircraft maintenance hangar for its entire history. Hangar 5 contains 3 sections. The eastern portion of the hangar contains administrative and classroom/training space. The western portions contain workshops and the hangar bays with the hangar doors on the west side of the building. At the time of closure, Hangar 5 North, which includes 3 hangar bays (Bay 4-6), maintenance shops, and administrative and training classroom space housed the VP-10 squadron. Hangar 5 South, which housed the VP-8 squadron at the time of closure, was constructed as a mirror image of Hangar 5 North and includes hangar bays 1 -3. Hangar 5 Center consists of a single maintenance bay, Bay 7, that was used for corrosion control and maintenance by both squadrons.</p> <p>Hangar 5 is heated by a natural gas boiler system. It was heated previously via fuel oil.</p>	
<b>BUILDING INSPECTION / CONDITION</b>	
<p>Hazardous waste was temporarily stored at the interior hazardous waste accumulation areas located in the southwest corner of Bay 1, northwest corner of Bay 7, and northwest corner of Bay 6 prior to being moved to the exterior satellite accumulation areas (SAAs) located on the northwest and southwest corners of Hangar 5 on the apron. The SAAs included HW storage lockers and 2 waste oil ASTs each. HW was transported to Building 45 for offsite disposal.</p> <p>The building was unoccupied at the time of the site visits and appeared in good condition. Office furniture and storage lockers, etc were present in the workshops and administrative/classroom space.</p> <p>Potential evidence of current or past hazardous waste generation activities was observed. See the attached Table A for a summary of potential hazardous waste areas identified during the building inspection. No evidence of hazardous waste residues was observed.</p> <p>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.</p> <p>Hazardous waste storage areas and hazardous waste accumulation areas were observed as described above.</p>	
<b>HAZARDOUS WASTE STORED / GENERATED</b>	
<p>Hazardous waste stored or generated at Hangar 5 included solvents from parts cleaning, waste paint that may have contained lead, lead dust from soldering, welding, and grinding activities, lead-acid batteries, waste oil, and universal waste, according to NASB personnel.</p>	
<b>POTENTIAL PCB-CONTAINING TRANSFORMERS</b>	
<p>The NASB transformer database lists the following transformer associated with Hangar 5:            750 KVA Pad-Mounted - RTE Serial No. 896003283 - Non-PCB containing (mineral oil)            750 KVA Pad-Mounted - RTE Serial No. 896003752 - Non-PCB containing (mineral oil)</p>	

**APPLICABLE REPORTS / DOCUMENTS**

Available historical plans and aerial photos were reviewed for past property uses:

- 1943 plan - No buildings present
- 1946 plan - Range Road and taxiway shown.
- 1952 plan - Same as 1946, new runway configuration shown.
- 1956 plan - Ordinance Road No. 1 with Buildings 53, 54, 55, and 57 (Magazines) present
- 1958 aerial - Hangar 4 present to the north, apron area with aircraft present at Hangar 5 parcel.
- 1978 aerial - Same as 1958
- 1983 plan - Hangar 5 present in current location
- 1984 aerial - Hangar 5 is present at current location with associated parking areas east, south, and north.
- 1989 plan - same as 1983 plan
- 1989 aerial - same as 1984 aerial
- 1993 aerial - same as 1989 aerial
- 2006 plan - same as 1989 plan.

According to NASB records, the following USTs were present at Hangar 5:

- 10045-001 - 1,000 gallons, diesel (installed 1982, removed Sep 1992 (replaced with 10045-488))
- 10045-488 - 1,000 gallons, #2 fuel oil (installed Sep 1992, removed June 1999 (replaced with A5.6))

According to NASB records, the following ASTs were present at Hangar 5:

- A5.0 - 500 gallons, DWSV Waste Oil (installed 1996, Inactive (VP10 north SAA))
- A5.1 - 500 gallons, DWSV Waste Oil (installed 1996, Inactive (VP10 north SAA))
- A5.2 - 500 gallons, DWSV Waste Oil (installed 1996, removed 2009 (VP8 south SAA))
- A5.3 - 500 gallons, DWSV Waste oil (installed 1996, removed 2009 (VP8 south SAA))
- A5.4 - 20,000 gallons, DWS #1 oil (installed 1999, Inactive (heating - north side))
- A5.5 - 20,000 gallons, DWS #1 oil (installed 1999, Inactive (heating - north side))
- A5.6 - 1,000 gallons, DWS diesel (installed 1999, Active (hot water - east side))
- A5.7 - 100 gallons, DWS diesel (installed 2005, Active (generator))

**HAZARDOUS WASTE STORAGE RECORDS**

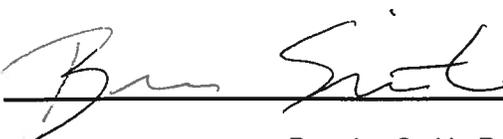
Hazardous waste was historically stored at Hangar 5. According to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith, hazardous waste generation was tracked by squadron and not by building. Until recently, squadrons rotated out of hangar spaces while on deployment overseas and no single aircraft squadron was consistently in each hangar space over the life of the building. As a result, specific records of hazardous waste qualities and types generated in Hangar 5 are not available. However, the Hazardous Waste department maintains a list of hazardous waste generated by the squadrons that shows what would typically be generated by aircraft maintenance activities conducted in the NASB hangars.

**MISCELLANEOUS NOTES**

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

**(SEE ATTACHED BUILDING FLOOR PLAN AND PHOTOGRAPHS)**

**INSPECTOR SIGNATURE:**



Brandon Smith, P.E.

**Table A**  
**Potential Hazardous Waste Areas - Hangar 5**  
**RCRA Partial Closure**  
**NAS Brunswick, Maine**  
**April 2010**

<b>Building Location</b>	<b>Room / Area</b>	<b>Potential Hazardous Waste Issues</b>
Hangar 5 (North)	Hazardous Waste Satellite Accumulation Area - Exterior	Spills from hazardous waste storage
	Room 198 - Avionics Electrician Shop	Lead dust from soldering
	Room 199 - Avionics Electrician Shop	Lead dust from soldering
	Room 202 - Air Frames Shop	Lead dust from grinding/soldering
	Room 203 - Corrosion Control	Spills from hazardous materials
	Room 223 - Corrosion Control	Spills from hazardous materials
	Hazardous Waste Storage Area - Northwest Hangar Bay 6	Spills from hazardous waste storage
	Floor Trenches	Spills from hazardous materials
	Hazardous Materials Storage Area - Alcove in Bay 6	Spills from hazardous materials / painting
Hangar 5 (South)	Hazardous Waste Satellite Accumulation Area - Exterior	Spills from hazardous waste storage
	Room 124 - Avionics Electrician Shop	Lead dust from soldering
	Room 125 - Avionics Electrician Shop	Lead dust from soldering
	Room 121 - Air Frames Shop	Lead dust from grinding/soldering
	Room 115 - Corrosion Control	Spills from hazardous materials
	Hazardous Waste Storage Area - Southwest Hangar Bay 1	Spills from hazardous waste storage
	Floor Trenches	Spills from hazardous materials
	Hazardous Materials Storage Area - Alcove in Bay 1	Spills from hazardous materials / painting
Hangar 5 (Center)	Hazardous Waste Storage Area - Northwest Hangar Bay 7	Spills from hazardous waste storage
	Room 311 - Former Hazardous Materials Storage Area	Spills from hazardous materials
	Room 313 - Corrosion Control	Spills from hazardous materials
	Floor Trenches	Spills from hazardous materials

**PHOTOGRAPHS**



No. 1 Hangar 5 – NAS Brunswick  
Hangar 5 – southeast elevation

May 12, 2010



No. 2 Hangar 5 – NAS Brunswick  
Hangar 5 – northwest elevation

April 28, 2010

**PHOTOGRAPHS**



No. 3 Hangar 5 – NAS Brunswick  
Hangar 5 – South satellite accumulation area

May 12, 2010



No. 4 Hangar 5 – NAS Brunswick  
Hangar 5 – North satellite accumulation area

May 12, 2010

**PHOTOGRAPHS**



No. 5 Hangar 5 – NAS Brunswick December 1, 2009  
Hangar 5 – Wipe sample locations in Hangar 5 South hazardous materials storage area



No. 6 Hangar 5 – NAS Brunswick March 24, 2010  
Hangar 5 – Cleaning lead-contaminated dust in the Hangar 5 North hazardous materials alcove