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FINAL RESOURCE CONSERVATION AND RECOVERY ACT PARTIAL CLOSURE REPORT
FOR BUILDING 611 WITH TRANSMITTAL LETTER NAS BRUNSWICK ME
4/6/2011
NAS BRUNSWICK

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

April 6, 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 611

Dear Mr. Vigneault:

A copy of the Final RCRA Partial Closure Report for Building 611 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,



FM LISA M. JOY
Environmental Director

Enclosure: (1) Final RCRA Partial Closure Report for Building 611

Copy to:
NAVFAC Mid-Atlantic (B. Abraham)
NAS Brunswick (M. Fagan/D. Smith)
EPA Region I (M. Daly)
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RCRA PARTIAL CLOSURE REPORT
for
BUILDING 611 – AIMD ENGINE TEST CELL PARCEL
NAVAL AIR STATION BRUNSWICK, MAINE
USEPA IDENTIFICATION NUMBER ME8170022018
FEBRUARY 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 611 parcel at Naval Air Station Brunswick (NAS Brunswick).

2. PROPERTY DESCRIPTION

The Building 611 parcel is located in the south-central portion of NAS Brunswick within the airfield apron secure perimeter fence (Figure 1). The 1.24-acre parcel is bordered as follows (Figure 2):

- to the north by the Airfield Parking Apron Area, the Hangar 5 parcel, and the Building 554 (Fleet Support Unit) parcel;
- to the east by the Building 555 (Sonobuoy Building) parcel;
- to the south by the Building 553 (Airfield Support Building) parcel; and
- to the west by the Airfield Parking Apron Area.

Building 153 (Recycling Center) is located beyond Building 553 (Airfield Support Building) to the south.

Building 611 is known as the Aircraft Intermediate Maintenance Division (AIMD) Engine Test Cell. It consists of a 2,484-square-foot, single-story building on a concrete slab foundation. The main section of the building, the engine test cell, is a corrugated, galvanized-steel structure having a semicircular cross-section. Constructed in 1967, the building is comprised of a large, out-of-air-frame, engine test room, and a control room on the east side of the building. The building was originally heated by an oil-fired furnace and was converted to natural-gas heat in approximately 2002. The natural-gas-fired boilers are located in a small, detached, boiler building at the southwest corner of Building 611. Photographs of the building are provided as 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 Building 611, 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.

Building 611 is first listed on NAS Brunswick historical building lists starting in 1976, where it is listed as the T-56 Engine Test Facility with a size of 2,449 square feet. On the 2006 and 2008

building lists, Building 611 is listed as the T-56 Engine Test Facility with an area of 2,484 square feet, built in 1967. Based upon this information, it is possible that a small addition was added to Building 611 between 1976 and 2006. The building construction date of 1967 is consistent with aerial photographs and historical site plans. The following summarizes other historical observations relating to Building 611 and proximal areas:

- In the historical aerial photograph dated 1940, the Building 611 parcel is mostly vegetated and undeveloped. A road is visible to the north of the current Building 611 location.
- According to the 1946 historical map, the Building 611 parcel was located directly south of and adjacent to the original runway and Gurnet Road. The Building 611 parcel was located within the cleared runway approach at this time, and it appears to be vegetated and undeveloped during this time.
- Based upon historical site plans and aerial photographs, the reconfiguration of the airfield occurred sometime between 1946 and 1952. The concrete airfield apron is visible in aerial photographs dated as early as 1953.
- According to historical maps dated 1946, 1952, and 1956, former Buildings 53, 54, and 55 were located directly west of what is the current location of Building 611, along Ordnance Road; however, these three buildings are not shown on historical maps dated after 1956.
- Beginning with the 1978 historical aerial photograph, Building 611 and former Building 617 (Aircraft Maintenance Support Equipment Storehouse), north of Building 611, are visible.
- On aerial photographs dated 1978, 1980, and 1981, some discolored areas (indicating possible aircraft exhaust staining) are visible on the concrete airfield apron immediately north and northwest of Building 611. This discolored area is not as pronounced in the 1984 photograph, compared to the 1981 photograph.
- The structure of Building 611 was modified sometime between 1981 and 1984, based upon review of two historical aerial photographs of the same years. Additionally, on the east side of Building 611, a concrete pad is visible in the 1984 photograph that is not visible in the 1981 aerial photograph.
- In aerial photographs dated between 1978 and 1981, a small structure is visible approximately 60 feet to the southeast of Building 611. The structure is not observed on the 1984 aerial photograph.
- Building 555 (Sonobuoy), to the east, is shown on historical aerial photographs beginning in 1984 and on historical base maps dated 1983.
- On the 2006 site map, Building 553 (Airfield Support Building) to the south, and Building 554 (Fleet Support Unit) to the north, are shown in their current locations, where former Building 617 was previously located.

A historical site plan dated 1990 shows various modifications to the exterior of Building 611, including replacement of the oil/water (O/W) separator, as well as an addition to Building 555, to the east, and the removal of contaminated soil from two areas, one located to the east and one to the southeast of Building 611, as described here. In an area adjacent to the east and southeast of Building 611 (between Buildings 611 and 555), the existing concrete slab was planned for removal, along with contaminated soil, to a depth of 3 feet, to be replaced with clean fill and a new jet-fuel tank concrete pad. In an area located approximately 60 feet south of Building 611, soil excavation was planned in an area measuring approximately 82 feet by 54 feet, to a depth of 3 feet. This is also the approximate location of the small structure observed to the south of Building 611 in the 1978, 1980, and 1981 aerial photographs. The plan states that "soil shall be removed and disposed and to a depth of 3 feet and replaced with clean fill and loamed and seeded" (NAVFAC, 1990).

A historical as-built site plan dated 1994 (NAVFAC, 1994a) indicates a storage container area on the west side of Building 611. This plan also indicates repairs to guard rails on the west side of

the building, removal and replacement of concrete pads adjacent to the east side of Building 611, and repairs to the sewer connections. These drawings show that the trench drains running along the north and south sides of test room are connected to an existing O/W separator located southeast of the building. And that the O/W separator discharges to an existing sanitary sewer manhole located northeast of the building on the Building 555 parcel. The drawings also show an existing sanitary sewer runs from the northeast area of the building, where the toilet room is located, to the same existing sanitary sewer manhole. In addition, the drawings also show an abandoned septic tank exists to the east of Building 611 within the Building 555 parcel, and indicates that an abandoned sanitary sewer line connected the Building 611 toilet room on the east side of the building to the abandoned septic system, Further information relating to the conversion to the base-wide sanitary system was not identified, however, the septic tank was shown as abandoned on historical site plans as early as 1990 (NAVFAC, 1990).

Two soil boring logs that reference a 1966 "T-56 Engine Test Facility Site Plan" by Ganteaume & McMullen are also shown on the plan. According to the soil logs, the depth to groundwater between Buildings 555 and 611 was approximately 10.5 to 11 feet below grade and the subsurface materials consisted of fine sand (NAVFAC, 1994a).

Another 1994 site plan and an undated plan showing an emergency escape route indicate that the main interior of Building 611 consisted of a test room and office on the west side of the building and a control room and restroom on the east side of the building (Figure 3) (NAVFAC, 1994b; NAVFAC, undated). The 1994 plan also shows trench drains inside Building 611 which discharge to a 1,000-gallon, concrete chamber O/W separator, located on the east side of the building. The OWS discharges to the sanitary sewer system.

According to historical records and NAS Brunswick Environmental Department personnel, Building 611 was used exclusively as an aircraft engine test facility since its construction in 1967. Also according to NAS Brunswick Environmental Department personnel, the quantity of hazardous waste generated at Building 611 was small and was episodic in nature, with no operations producing hazardous waste on a regular basis. According to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith, Building 611 mainly produced "used oil" waste. This included oils, hydraulic fluids, and waste fuel generated during the engine test set-up. Also in aircraft engines were cleaned with alcohol, and the rags used for these cleaning activities may have been part of the waste stream for this building. Hazardous waste generated at Building 611 was transported daily to Building 250 (AIMD), for pickup by the NAS Brunswick Hazardous Waste Department, to be managed through the base-wide hazardous waste program.

According to NAS Brunswick records, a 1,000-gallon, fiberglass-reinforced-plastic, underground storage tank (UST) (10045-070) was installed at Building 611 in 1983 and removed in May 1995. The UST contained No. 2 fuel oil used for heating. According to historical plans, the UST was located at the northeast corner of Building 611 (Figure 2) (NAVFAC, 1990).

NAS Brunswick records also indicate the following aboveground storage tanks (ASTs) were located at Building 611:

NAS Brunswick Tank Number	Capacity and Material	Stored Product	Installation Date	Removal Date
A611.0	1,000 gallons SWS	JP8 jet fuel	1967	2009
A611.1	185 gallons DWS	waste oil, unused jet fuel	1994	inactive
A611.2	1,000 gallons DWS	No. 1 fuel oil (heating)	1994	1999
A611.3	100 gallons SWS	JP8 jet fuel	1994	2009
A611.4	330 gallons SWS	No. 1 fuel oil (heating)	1998	2002
A611.5	330 gallons SWS	No. 1 fuel oil (heating)	1998	2002

SWS single-walled steel; DWS double-walled steel

The 1,000-gallon heating-oil AST (A611.2) was located in the west concrete curb-bermed area on the western side of the exterior of the building, adjacent to the furnace, and the AST piping was to be installed with double containment (EA, 1994).

According to the Spill Prevention and Pollution Countermeasures (SPPC) Plan, the 1,000-gallon jet-fuel AST (A611.0) was located within a 12-inch high concrete-berm, spill containment area (Navy, 2004). The 100-gallon jet fuel AST (A611.3) was located within a berm approximately 4 inches high, and had its own pump. According to the SPCC Plan, the 185-gallon AST (A611.1) was used to store waste oil and unused jet fuel.

The following five entries were identified in the NASB spill logbook (Environmental Department, 1999 and 2005):

Entry Date	Quantity	Material Released	Notes
12/15/1988	unknown	hydraulic oil	Spill near OWS, backed up due to snow and rain. Cleaned with Speedy Dry.
1/11/1989	15-20 gallons	JP-5	Fuel truck operator overfilled tank. Some discharged to storm drain. Covered drain with plastic and cleaned with absorbent pads.
2/14/1989	unknown	unknown	Badly flooded area due to storm drain backup from OWS. Cleaned with absorbent pads.
1/3/1994	20 gallons	hydraulic oil	Hydraulic lines ruptured. Drains were plugged, spill contained.
5/5/1995	unknown	No. 2 fuel oil	Spill occurred during tank removal (UST 10045-070). Contaminated soil stockpiled and removed. MEDEP was notified and the impacted soil was excavated and stockpiled for offsite disposal.

Two releases were identified in the MEDEP spills database for Building 611. MEDEP spill file (P-619-1991) identified a spill of JP-5 (originally thought to be oil and/or solvent from underground piping associated with an AST). The release was identified when the OWS appeared to be backing up. Approximately 50 cubic yards of impacted soil were excavated and disposed.

In 2008, soil samples were collected around below-ground piping associated with AST A611.0 (jet fuel), located outside Building 611, on the eastern side of (S.W. Cole, 2008). The piping supplied jet fuel to engines inside of Building 611 from the exterior AST. Approximately 20 feet of 1-inch-diameter piping was to be abandoned in-place. Results from both field-screening and laboratory analysis of soil samples collected below the piping of AST did not show evidence of petroleum contamination (S.W. Cole, 2008 and 2009). Details relating to the S.W. Cole work are also provided in MEDEP spill file, P-354-2008. In a letter dated July 10, 2009, the MEDEP approved of the piping abandonment associated with the AST (MEDEP, 2009).

MEDEP spill file (P-354-2008) lists an unreported, un-remediated spill of 2 to 3 gallons of JP8 in the tank dike observed in 2007 by SW Cole. This file also indicates that underground fuel lines were abandoned in place as approved by the MEDEP.

According to NAS Brunswick records, the interior floor drains in Building 611 are connected to a concrete chamber O/W separator with an oil capacity of 400 gallons, located on the southeast side of the building (Figure 2), that discharges to the sanitary sewer system. The O/W separator and trenches were serviced annually as part of the base O/W separator maintenance program. The servicing of the O/W separator and trenches included removal of accumulated petroleum products and excessive sludge, and proper disposal of all collected petroleum-contaminated water, petroleum products, and sludge. The most recent O/W separator cleaning event was performed in early June 2010. The water and sludge removed from the O/W separator during

this base-wide cleaning event were collectively disposed of as non-hazardous, oil-contaminated liquid and solids (Clean Harbors, 2010).

The NAS Brunswick Transformer Database lists six non-polychlorinated-biphenyl (PCB)-containing electrical transformers associated with Building 611 (three former units and three units currently in service). The three active transformers are utility-pole-mounted units that are located within the Building 555 parcel (Figure 2); these transformers will be addressed in the Building 555 parcel RCRA Partial Closure Report.

In the report prepared under the Community Environmental Response Facilitation Act (CERFA) process, Building 611 was identified as being within area "B-3". Area B-3 was determined to have the potential for classification as a "Category 3 CERFA property", an area of potential release and/or disposal. This is defined as a real property on which there is potential for hazardous substances and/or petroleum products or their derivatives to have been released or disposed, and some level of further assessment or evaluation is required. The classification is based on the potential for undocumented releases from historical operations associated with airfield operations and aircraft maintenance that might have occurred prior to establishment of environmental recordkeeping practices (Tetra Tech, 2007).

No groundwater investigations have been conducted in the vicinity of the Building 611 parcel; therefore, groundwater characterization information for the parcel is not available. Additionally, no groundwater investigations have been conducted to specifically address known or suspected contaminant releases from within the upgradient Runways Area (Tetra Tech, 2011).

4. SITE VISIT AND INVESTIGATION

A site visit was conducted on January 21, 2010 by Mr. Brandon Smith, P.E., Ms. Mindi Messmer, and Mr. James Forrelli, P.E., of Tetra Tech, and on April 28, 2010 by Mr. Brandon Smith, P.E., and Mr. James Forrelli, P.E. The purpose of the visits 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 611 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 611 was unoccupied and in fair condition.
- The interior of Building 611 consisted of an engine test cell room and office on the west side of the building and a control room and restroom on the east side of the building.
- Control room equipment and office furniture were present in the building.
- Some staining of the engine test cell floor was observed and the floor was coated with a greasy film.
- The walls and overhead areas of the engine test room were coated with a dark-grey residue, likely aircraft engine exhaust deposits.
- At the concrete apron, north and south of the engine test cell, some evidence of engine-exhaust staining was observed, but significantly less than seen in historical aerial photographs.
- Structural modifications that could conceal signs of a past release were not observed.
- A concrete-bermed, paved area with a 185-gallon AST (A611.1) is located east of Building 611. The tank is labeled "used oil, aircraft fuel, hydraulic oil, engine oil", as observed on April 28, 2010. (A 1,000-gallon JP8 tank was formerly located inside the bermed area.)
- A concrete-bermed, paved area located west of Building 611 was empty; no evidence of hazardous waste residue was observed.
- Trench drains were observed in the floor on the north and south sides of the engine test cell room.

- No evidence of hazardous waste or hazardous waste residues was observed in the detached boiler building.
- No peeling paint was observed at Building 611.
- Three pole-mounted transformers were observed on a utility pole east of Building 611, near Building 555 (beyond the Building 611 parcel boundary, within the Building 555 parcel).

The available information regarding the historical activities that occurred at the parcel and the location of known NAS Brunswick groundwater contamination areas provides no evidence to suggest that groundwater underlying the Building 611 parcel has been adversely impacted by a release, either from within the parcel or from another (off-parcel) source area.

Based on the site visit observations and records research findings, environmental samples were collected at Building 611 to investigate the potential presence of hazardous waste residue in the control room and the engine test cell room. The investigation sample results are discussed below.

On February 24, 2010 and September 9, 2010, wipe samples from floors and walls were collected from eight locations in Building 611 (Figure 3). Wipe samples were collected with cotton gauze saturated with dilute nitric acid (1:4 nitric acid to distilled water) for metals analysis or acetone for semi-volatile organic compound (SVOC) analysis. A 10-centimeter (cm) by 10 cm sampling area was wiped with the cotton gauze while applying moderate pressure. Wipe samples were submitted for RCRA metals and a subset of samples (floor wipes only) were also submitted for SVOC analysis by Tetra Tech's subcontracted analytical laboratory, Analytics Environmental Laboratories (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 611 investigation are presented in Table 1. 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 ($\mu\text{g}/\text{ft}^2$)
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 or for the SVOCs. However, for these RCRA Partial Closure activities, the MEDEP has approved the use of World Trade Center (WTC) Settled Dust Screening Values (WTC, 2003) as clearance values for wipe sample results for six of the other seven metals (there are no WTC screening values for selenium).

As shown in Table 1, the lead level detected in one floor-wipe sample ($59 \mu\text{g}/\text{ft}^2$) from the engine test cell room exceeded the MEDEP criterion for floors ($40 \mu\text{g}/\text{ft}^2$). One wall-wipe sample collected from the engine test cell room also exceeded the respective MEDEP criterion for walls ($250 \mu\text{g}/\text{ft}^2$), with a lead level of $340 \mu\text{g}/\text{ft}^2$. All levels of other detected metals in these samples were below criteria, and SVOCs were not detected in any of the floor wipe samples.

Based on the analytical results, cleaning of Building 611 was required to remove lead-contaminated residue exceeding the associated MEDEP criterion for dust on floors, walls and other flat surfaces (discussed in Section 6).

5. HAZARDOUS WASTE GENERATION AND STORAGE

Based on the records research and NAS Brunswick Environmental Department personnel interviews, former operations at Building 611 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. In addition, based on site visit observations and sampling results, hazardous waste residue was also generated at Building 611 test room in the

form of lead-contaminated residue resulting from engine testing operations. The areas impacted by lead-dust were also addressed by the closure actions described in Section 6.0.

6. CLOSURE ACTIONS

Based on analytical results discussed in Section 4, closure actions were required at Building 611 to satisfy the MEDEP hazardous waste closure requirements. Closure actions were conducted at Building 611 in July and October 2010 and January 2011, as discussed below.

Tetra Tech's cleaning subcontractor, Global Remediation Services (Global), performed floor-cleaning activities at Building 611 on July 22, 2010 (Event 1). Global initiated cleaning activities in the test cell bay area. Prior to cleaning, floor openings were covered and sealed with polyethylene sheeting, trench-drain covers were removed, and drains were plugged. The floor was then manually swept and then vacuumed with a high efficiency particulate air (HEPA) vacuum. After sweeping and vacuuming, floors were sprayed with a 2-percent, lead-specific detergent solution with a degreaser, scrubbed, and washed, using a 2,500-pounds-per-square-inch (psi) pressure-washer. All cleaning wastewater was containerized using a wet-vacuum, placed in 55-gallon drums (three drums were 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.

Three post-cleaning, confirmatory floor-wipe samples were collected from the engine test room on July 23, 2010 (Figure 4). Samples were submitted to Analytics for lead analysis and resulting analytical data underwent limited data validation. The July 23, 2010 wipe sample results are included in Table 2. The lead levels in the three post-cleaning confirmatory wipe samples were below the associated MEDEP floor criterion.

Since wall-wipe samples collected on September 9, 2010 were found to be above the associated MEDEP criterion, a second decontamination event (Event 2) was conducted at Building 611 between October 18 and October 20, 2010. Floors were scrubbed, and the floor, walls and the overhead surface were sprayed with a 2-percent, lead-specific detergent solution, and floors, and pressure-washed, using a 5,000-psi steam cleaner. All cleaning wastewater was containerized using a wet-vacuum, placed in fifteen 55-gallon drums, 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 areas.

After the work areas were allowed to dry, post-cleaning Event 2 confirmatory wipe samples were collected on October 20, 2010. Four wall-wipe samples were collected (Figure 4) and submitted for lead analysis by Analytics. The resulting analytical data underwent limited data validation. The October 20, 2010 wipe sample results (Table 3) show that lead was detected at levels exceeding the associated MEDEP criterion for walls ($250 \mu\text{g}/\text{ft}^2$) in all four Event 2 wall-wipe confirmation samples.

Based on Event 2 results, a third decontamination event (Event 3) was conducted at Building 611 on January 11, 2011. Test room floors and walls were cleaned again, using the procedures described above. The overhead test room surfaces were also cleaned to meet the visibly clean criterion. All cleaning wastewater was containerized using a wet-vacuum, placed in five 55-gallon drums, 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 areas. After the work areas were allowed to dry, three floor-wipe samples (plus one blind duplicate) and four wall-wipe samples were collected for lead analysis by Analytics (Figure 5). The resulting analytical data underwent limited data validation. For the Event 3 confirmatory samples, lead was detected at levels exceeding the associated MEDEP criterion for floor-wipes or wall-wipes at two of the three floor-wipe locations and three of the four wall-wipe locations (Table 4).

Based on Event 3 results, a fourth decontamination event (Event 4) was conducted at Building 611 on January 20, 2011. Floors and walls were cleaned again, using the procedures described above. All cleaning wastewater was containerized using a wet-vacuum, placed in six 55-gallon drums, 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 areas. After the work areas were allowed to dry, post-cleaning confirmatory wipe samples (Event 4) were collected on January 21, 2011. Three floor-wipe samples and four wall-wipe samples (plus one blind duplicate) were collected (Figure 5) for lead analysis by Analytics. Resulting analytical data underwent limited data validation. Event 4 wipe sample results (Table 5) showed that lead levels in the post-cleaning confirmatory floor-wipe samples were below the associated MEDEP floor criterion. However, lead was still detected at levels exceeding the associated MEDEP criterion for walls in all of the Event 4 wall-wipe samples.

It is suspected that the diluted nitric acid used to saturate the wipe sample gauze caused lead transfer from the galvanized steel during sampling resulting in false lead levels in the wall wipe sample results that exceeded the closure criteria of $250 \mu\text{g}/\text{ft}^2$. According to multiple references, lead is a common impurity in zinc coatings used on galvanized steel. In addition, lead has been detected in samples of galvanized steel (Kim and Leidheiser, 1977). Therefore, four additional confirmatory wall-wipe samples were collected on February 21, 2011, using wipes saturated in de-ionized water. Lead levels in these samples results (Table 5) were well below the associated MEDEP wall criterion. As these results are more representative of the lead residue level, additional closure action is not warranted at Building 611.

7. OTHER ENVIRONMENTAL CONSIDERATIONS

Any electrical transformers, O/W separator, USTs or ASTs known to be associated with Building 611 are discussed in Sections 3 and 4. No other transformers, O/W separator, USTs or ASTs were observed in the immediate vicinity of the building. (The three active transformers associated with Building 611 that are located within the Building 555 parcel will be addressed in the RCRA Partial Closure Report for the Building 555 parcel.)

8. LIMITATIONS

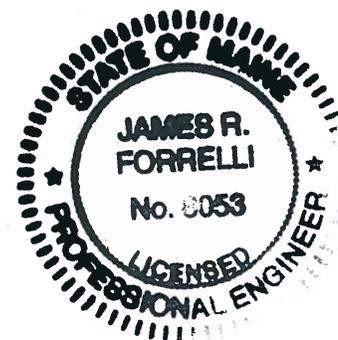
This investigation of the hazardous waste closure requirement applies to the Building 611 parcel, (as shown on Figure 2) only.

9. CERTIFICATION

Based on the findings of the investigation as presented in this Partial Closure Report, historical operations resulted in the generation of hazardous waste including residue in the form of lead-contaminated residue in the test room at Building 611, NAS Brunswick, Maine. Closure actions were conducted to remove lead-contaminated residue to levels meeting MEDEP criteria for lead-contaminated settled dust surfaces applicable for RCRA closures. Therefore, the hazardous waste closure of the Building 611 parcel was completed in accordance with the provisions of MEDEP Regulations Chapter 851, Standards for Generators of Hazardous Waste, Section 11.

James R. Forrelli

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



⁽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 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.

REFERENCES

Clean Harbors (Clean Harbors Environmental Services), 2010. Site Services Multi-task Worksheet. Brunswick Naval Air Station. June 3.

EA Engineering, Science, and Technology (EA), 1994. Design Analysis, 100% Design Submittal, Replace USTs, On-Base Facilities, Naval Air Station Brunswick, Maine. February.

Environmental Department, 1999. Environmental Incident Log, Book No. 1, July 1988-November 1999. Naval Air Station Brunswick, Maine.

Environmental Department, 2005. Environmental Incident Log, Book No. 2, December 1999-July 2005. Naval Air Station Brunswick, Maine.

Environmental Department, 2009. Master/Historical Aboveground and Underground Storage Tank Inventory. NAS Brunswick, Maine. February.

Environmental Department, 2002. 1999 - 2002 Hazardous Waste Database, Naval Air Station Brunswick Environmental Department, Brunswick, Maine.

Environmental Department, 2009. 2003 - 2009 Hazardous Waste Database, Naval Air Station Brunswick Environmental Department, Brunswick, Maine.

Kim, Dong K. and Leidheiser, Henry, Jr., 1977. "Chemistry of the Surface of Hot-Dipped Galvanized Steel and its Relation to Paint Adherence," Surface Technology, Volume 5, Issue 5; pp 379-396. August.

Maine Geographical Information System (Maine GIS), 2001. April.

MEDEP (Maine Department of Environmental Protection), 2009. "Site Assessment Approval, Underground Oil Storage Tanks Facility." MEDEP correspondence to David Valley, Public Works Department, Brunswick Naval Air Station. July 10.

MEDEP, 2010. MEDEP Spills Database. Maine Department of Environmental Protection, Augusta, Maine.

Mid-Coast Regional Redevelopment Authority, 2006. BNAS Reuse Master Plan Property Condition Assessment.

Navy, 2004. Naval Air Station Brunswick Instruction 5090.3C From: Commanding Officer, Subj: Spill Prevention Control and Countermeasures (SPCC) Plan for Petroleum, Oil and Lubricants (POL). February 27.

Navy (Department of the Navy, Base Realignment and Closure Program Management Office), 2006. "Final (Revision 2) Environmental Condition of Property Report for the Naval Air Station, Brunswick, Maine," NAS Brunswick, Maine. May 30.

NAVFAC (Naval Facilities Engineering Command), undated. Emergency Evacuation Plan Building 611.

NAVFAC (Naval Facilities Engineering Command), 1990. "Building 611 Oil/Water Separator," Naval Air Station, Brunswick, Maine. Approved April 4.

NAVFAC (Naval Facilities Engineering Command), 1994a. "Standard Drawing, Repairs to Building 611," Naval Air Station, Brunswick, Maine. As-built, December 6.

NAVFAC (Naval Facilities Engineering Command), 1994b. "Standard Drawing, Repairs to Building 611, Existing Conditions and Floor Plans, Elevations, Sections & Details" Naval Air Station, Brunswick, Maine. May 23.

PWD (Public Works Department), 1943. "Building Site Plan Showing Location of Underground Water Distribution Lines and Hydrants," US NAS Brunswick, Maine. September 4.

PWD, 1946. "Map of US Naval Air Station, Brunswick, Maine, Showing conditions on June 30, 1946," NAS Brunswick, Maine. June 30.

PWD, 1952. "Map of US Naval Air Station, Brunswick, Maine, Showing conditions on June 30, 1952," NAS Brunswick, Maine. June 30.

PWD, 1956. General Station Map, Enclosure 2. , NAS Brunswick, Maine.

PWD, 1957. "Map of US Naval Air Station, NAS Brunswick, Maine.

PWD, 1965. "Index of Structures, Department of the Navy Bureau of Yards & Docks Department," US Naval Air Station Brunswick, Maine. Updated May 13.

PWD, 1975. General Development, Existing and Planned, Operations Area, US Naval Air Station, Brunswick, Maine.

PWD, 1976. "Index of Structures, Naval Facilities Engineering Command, Northeast Division Drawing No. 747 256," Naval Air Station Brunswick, Maine. Updated September 21.

PWD, 1989. "Index of Structures, Naval Facilities Engineering Command, Northeast Division Drawing No. 747 256," Naval Air Station Brunswick, Maine. Updated September 21.

PWD, 2003. "NAS Brunswick, Facility List," US Naval Air Station, Brunswick, Maine, NAS Brunswick, Maine. March 9.

PWD, 2006a. Brunswick Naval Air Station, NAS Brunswick, Maine.

PWD, 2006b. "NASB Facility List, Naval Air Station, Brunswick, Maine". March.

PWD, 2008a. "Draft NAS Brunswick, Facility List," US Naval Air Station, Brunswick, Maine, NAS Brunswick, Maine. March.

PWD, 2008b. Revised Oil/Water Separator List, Table J-C4(a). NAS Brunswick, Maine. January 1.

PWD, 2009. Master Transformer Database. NAS Brunswick, Maine. June 24.

PWD, 2010. Removed Transformer Database. NAS Brunswick, Maine.

Sewall (James W. Sewall Company), 1940. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. September 28.

Sewall, 1953. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. June 29.

Sewall, 1958. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. October 9.

Sewall, 1959. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. October 9.

Sewall, 1978. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. November 22.

Sewall, 1981. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. October 17.

Sewall, 1984. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. April 23.

Sewall, 1989. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. April 2.

Sewall, 1993. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. November 8.

Sewall, 1997. NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. May 27.

S.W. Cole (S.W. Cole Engineering), 2008. Jet Fuel (JP-7) AST Piping Abandonment, Test Cell Building #611, Brunswick Naval Air Station, Brunswick, Maine. S.W. Cole Engineering, Inc., Bangor, Maine. July 14.

S.W. Cole, 2009. Jet Fuel (JP-7) AST Piping Abandonment Report Addendum, Test Cell Building #611, Brunswick Naval Air Station, Brunswick, Maine. S.W. Cole Engineering, Inc., Bangor, Maine. June 24.

Tetra Tech (Tetra Tech NUS), 2007. CERFA Identification of Uncontaminated Property at the Naval Air Station Brunswick, Maine. Tetra Tech NUS, Inc., King of Prussia, Pennsylvania. June.

Tetra Tech, 2011. "RCRA Partial Closure Report for Runways Area and Airfield Parking Apron Area, Naval Air Station, Brunswick, Maine." January.

WTC (World Trade Center), 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.

U.S. EPA (Environmental Protection Agency), 1987. Volume 1 and 2, Site Analysis Brunswick Naval Air Station, Brunswick, Maine. April.

**TABLE 1
PRE-CLEANING INVESTIGATION WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 611 – AIMD ENGINE TEST CELL
NAVAL AIR STATION BRUNSWICK, MAINE**

SAMPLE IDENTIFICATION⁽¹⁾	B611-WP01	B611-WP02	B611-WP03	B611-WP03 (duplicate)	B611-WP04	B611-WP08	B611-WP09	B611-WP10	B611-WP11			
LOCATION	Engine Test Cell floor	Control Room floor	Engine Test Cell east wall, north end	Engine Test Cell west wall, north end	Engine Test Cell east wall, south end	Engine Test Cell west wall, south end						
MATRIX	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe			
EVENT	pre-cleaning	pre-cleaning	pre-cleaning	pre-cleaning	pre-cleaning	pre-cleaning	pre-cleaning	pre-cleaning	pre-cleaning			
SAMPLE DATE	02/24/10	02/24/10	02/24/10	02/24/10	02/24/10	09/09/10	09/09/10	09/09/10	09/09/10			
	Criteria											
	WTC	MEDEP floor	MEDEP wall									
METALS (µg/ft²)												
Arsenic	36	--	--	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	--	--	9.3 U	24	28	33	56	19	26	28	84
Cadmium	140	--	--	6.4	84	31	21	9.3	30	32	33	47
Chromium	440	--	--	9.3 U	80	9.3 U	9.3 U	16	89	31	26	63
Lead	NA	40	250	3.7 U	59	29	22	29	230	220	180	340
Mercury	15	--	--	0.093 U	0.093 U	0.093 U	0.093 U	0.14	0.0083 J	0.16 U	0.16 U	0.16 U
Selenium	--	--	--	9.3 U	9.3 U	9.3 U	9.3 U	9.3 U	6.5 U	6.5 U	6.5 U	6.5 U
Silver	730	--	--	1.9 U	1.9 U	1.9 U	1.9 U	1.9 U	3.7 U	1 J	0.65 J	1.9 J
SVOCs (µg/ft²)	--	--	--	ND	ND	ND	ND	ND	na	na	na	na

Notes:

(1) Sample prefix (NASB) not shown

Wipe sample surface area: 10 centimeters (cm) by 10 cm

Shading indicates criterion exceeded

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

J estimated result

µg/ft² micrograms per square foot

-- no criteria available

na not applicable

ND not detected

U not detected (with associated detection limit)

**TABLE 2
POST-CLEANING EVENT 1 WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 611 – AIMD ENGINE TEST CELL
NAVAL AIR STATION BRUNSWICK, MAINE**

SAMPLE IDENTIFICATION⁽¹⁾		B611-WP05	B611-WP06	B611-WP07
LOCATION		Engine Test Cell floor	Engine Test Cell floor	Engine Test Cell floor
MATRIX		wipe	wipe	wipe
EVENT		post-cleaning event 1	post-cleaning event 1	post-cleaning event 1
SAMPLE DATE		7/23/10	7/23/10	7/23/10
		MEDEP floor		
lead (µg/ft ²)		40	13	11
			11	10

Notes:

- (1) Sample prefix (NASB) not shown
- Wipe sample surface area: 10 centimeters (cm) by 10 cm
- µg/ft² micrograms per square foot
- NA not applicable

**TABLE 3
POST-CLEANING EVENT 2 WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 611 – AIMD ENGINE TEST CELL
NAVAL AIR STATION BRUNSWICK, MAINE**

SAMPLE IDENTIFICATION⁽¹⁾		B611-WP12	B611-WP13	B611-WP14	B611-WP15
LOCATION		Engine Test Cell east wall, north end	Engine Test Cell west wall, north end	Engine Test Cell east wall, south end	Engine Test Cell west wall, south end
MATRIX		wipe	wipe	wipe	wipe
EVENT		post-cleaning	post-cleaning	post-cleaning	post-cleaning
SAMPLE DATE		10/20/10	10/20/10	10/20/10	10/20/10
	Criteria				
	MEDEP wall				
lead ($\mu\text{g}/\text{ft}^2$)	250	1400	840	1200	980

Notes:

- (1) Sample prefix (NASB) not shown
- Wipe sample surface area: 10 centimeters (cm) by 10 cm
- Shading indicates criterion exceeded
- $\mu\text{g}/\text{ft}^2$ micrograms per square foot

**TABLE 4
POST-CLEANING EVENT 3 WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 611 – AIMD ENGINE TEST CELL
NAVAL AIR STATION BRUNSWICK, MAINE**

SAMPLE IDENTIFICATION⁽¹⁾	B611-WP16	B611-WP16 (Duplicate)	B611-WP17	B611-WP18	B611-WP-19	B611-WP20	B611-WP21	B611-WP22		
LOCATION	Engine Test Cell floor, south	Engine Test Cell floor, south	Engine Test Cell floor, center	Engine Test Cell floor, north	Engine Test Cell east wall, south end	Engine Test Cell west wall, south end	Engine Test Cell east wall, north end	Engine Test Cell west wall, north end		
MATRIX	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe		
EVENT	post-cleaning event 3	post-cleaning event 3	post-cleaning event 3	post-cleaning event 3	post-cleaning event 3	post-cleaning event 3	post-cleaning event 3	post-cleaning event 3		
SAMPLE DATE	01/11/11	01/11/11	01/11/11	01/11/11	01/11/11	01/11/11	01/11/11	01/11/11		
	Criteria									
	MEDEP floor	MEDEP wall								
lead (µg/ft ²)	40	250	44	41	71	20	307	256	324	243

Notes:
 (1) Sample prefix (NASB) not shown
 Wipe sample surface area: 10 centimeters (cm) by 10 cm
 Shading indicates criterion exceeded
 µg/ft² micrograms per square foot

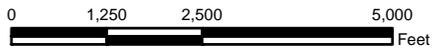
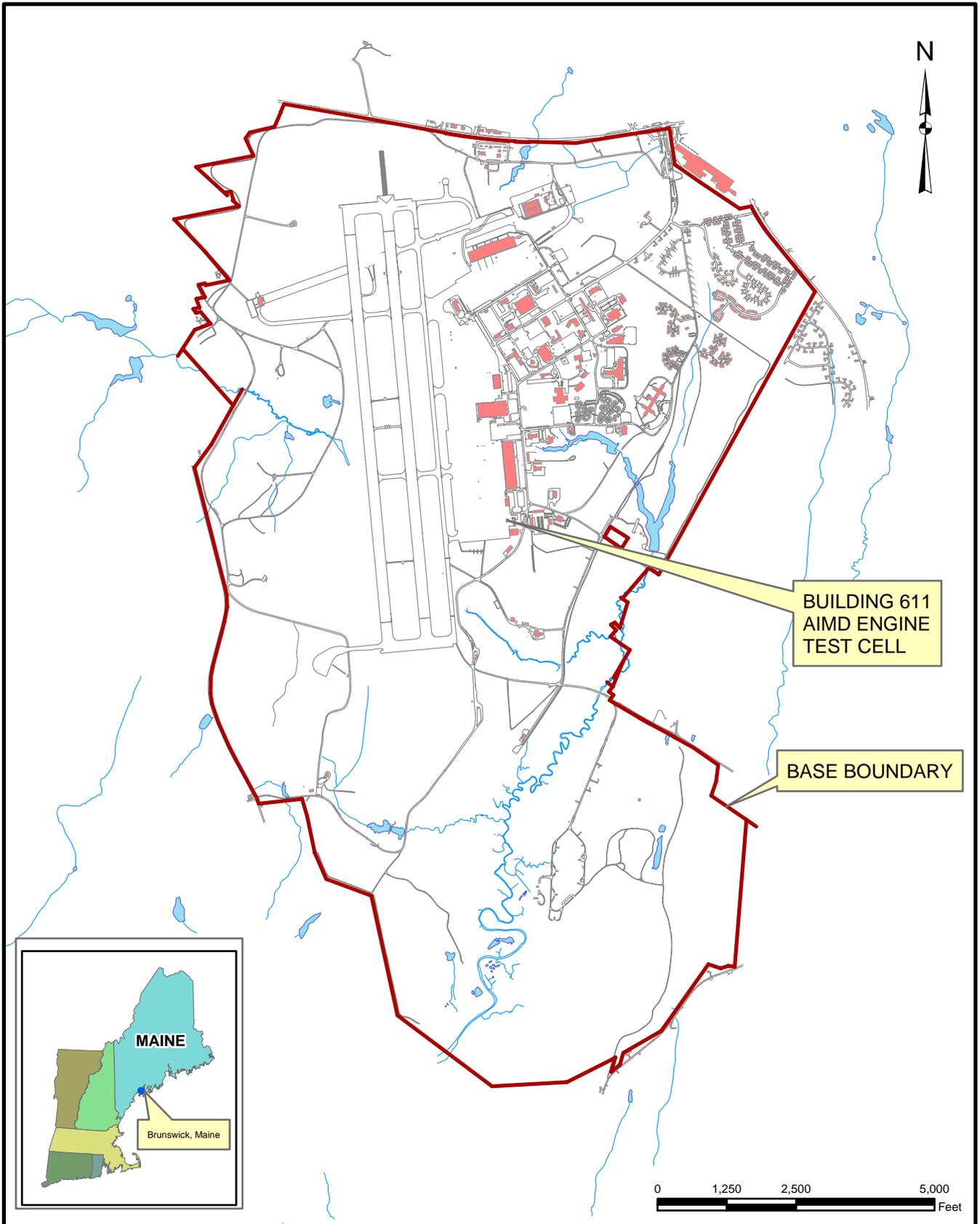
**TABLE 5
POST-CLEANING EVENT 4 WIPE SAMPLE RESULTS
RCRA PARTIAL CLOSURE REPORT
BUILDING 611 – AIMD ENGINE TEST CELL
NAVAL AIR STATION BRUNSWICK, MAINE**

SAMPLE ID⁽¹⁾	B611-WP24	B611-WP25	B611-WP26	B611-WP27	B611-WP27 (duplicate)	B611-WP28	B611-WP29	B611-WP30		
LOCATION	Engine Test Cell floor, south	Engine Test Cell floor, south	Engine Test Cell floor, center	Engine Test Cell east wall, south end	Engine Test Cell east wall, south end	Engine Test Cell west wall, south end	Engine Test Cell east wall, north end	Engine Test Cell west wall, north end		
MATRIX	wipe	wipe	wipe	wipe	wipe	wipe	wipe	wipe		
EVENT	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning	post-cleaning		
SAMPLE DATE	01/21/11	01/21/11	01/21/11	01/21/11	01/21/11	01/21/11	01/21/11	01/21/11		
	Criteria									
	MEDEP floor	MEDEP wall								
lead (µg/ft ²)	40	250	18	16	9	313	251	570	638	554

SAMPLE ID⁽¹⁾	B611-WP31	B611-WP32	B611-WP33	B611-WP34	
LOCATION	Engine Test Cell west wall, north end	Engine Test Cell east wall, north end	Engine Test Cell west wall, south end	Engine Test Cell east wall, south end	
MATRIX	wipe	wipe	wipe	wipe	
EVENT	post-cleaning	post-cleaning	post-cleaning	post-cleaning	
SAMPLE DATE	02/01/11	02/01/11	02/01/11	02/01/11	
	Criteria				
	MEDEP wall				
lead (µg/ft ²)	250	2	3	3.7 U	3.7 U

Notes:

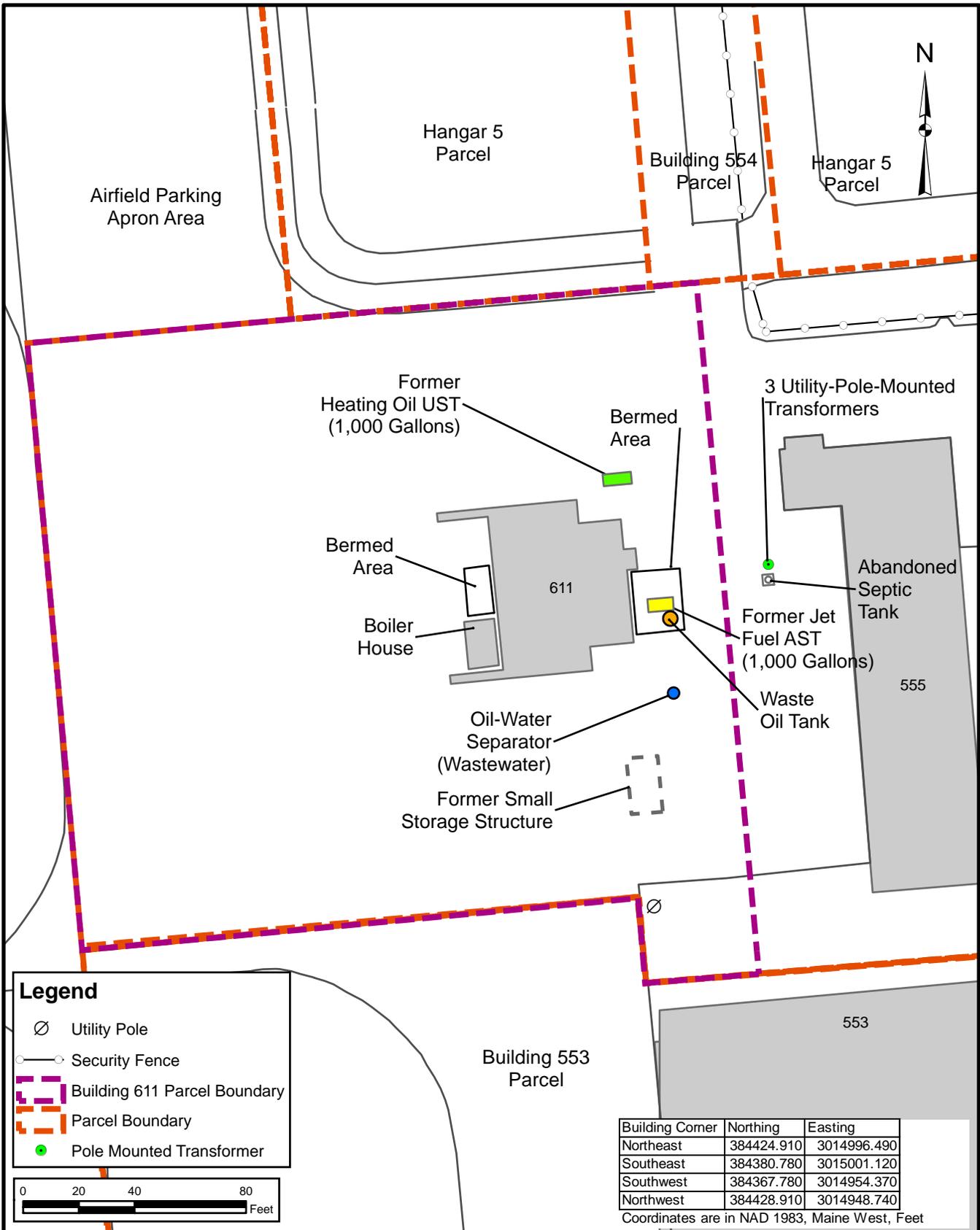
- (1) Sample prefix (NASB) not shown
- Wipe sampling gauze for samples WP-24 through WP-30 saturated with .
- Wipe sampling gauze for samples WP-31 through WP-34 saturated with de-ionized water.
- Wipe sample surface area: 10 centimeters (cm) by 10 cm
- Shading indicates criterion exceeded.
- µg/ft² micrograms per square foot
- U not detected (with associated detection limit)



SITE LOCATION MAP
BUILDING 611 - AIMD ENGINE TEST CELL PARCEL
RCRA PARTIAL CLOSURE REPORT
NAVAL AIR STATION BRUNSWICK, MAINE

SCALE AS NOTED	
FILE I:\NASB_BLDG_611_LOCUS.MXD	
REV 0	DATE 02/17/11
FIGURE NUMBER 1	

I:\02258\CP_DR\NASB_BLDG_611_SITE_MAP.MXD DWM 02/18/11



Legend

- Utility Pole
- Security Fence
- Building 611 Parcel Boundary
- Parcel Boundary
- Pole Mounted Transformer

0 20 40 80 Feet

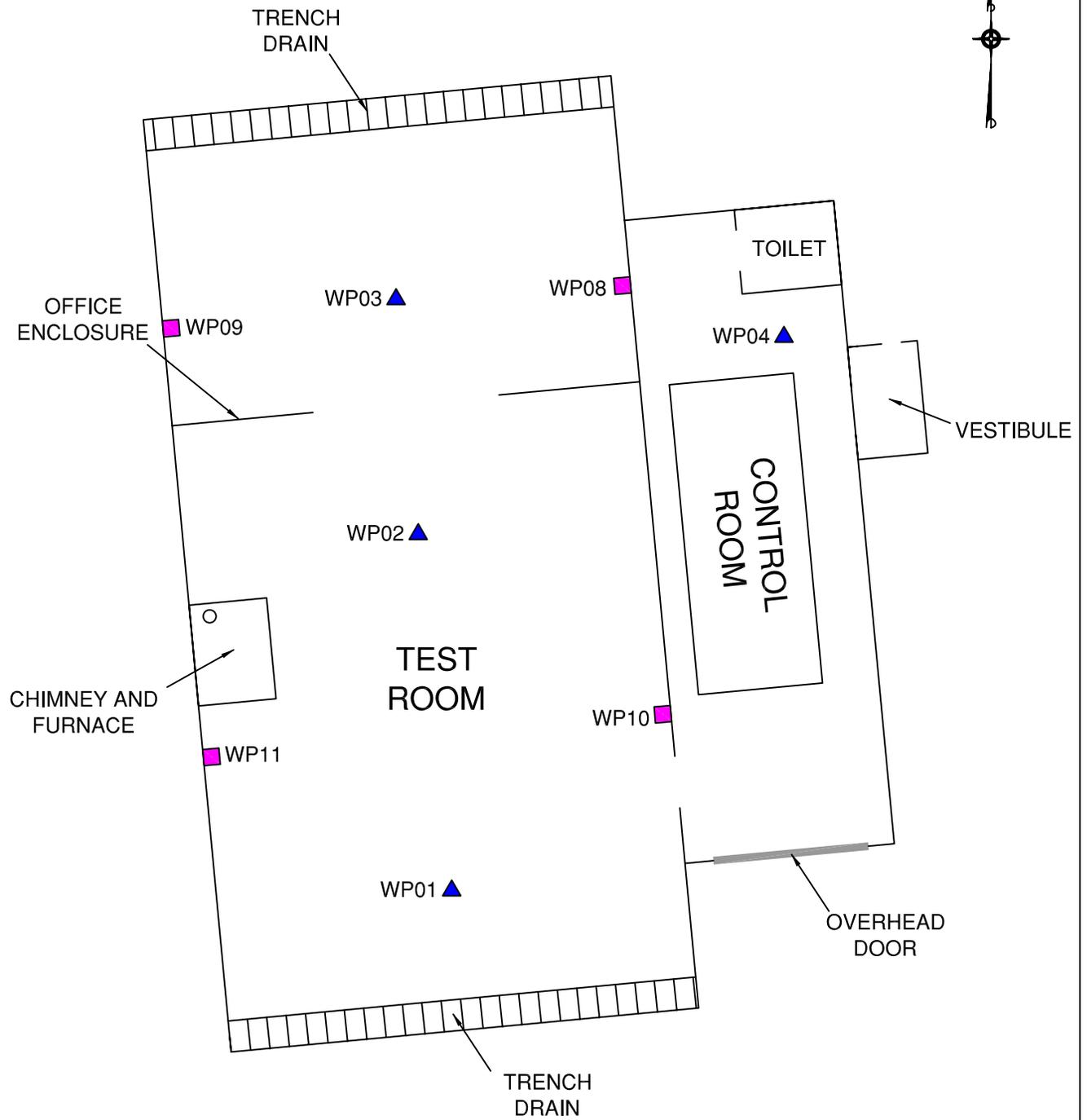
Building Corner	Northing	Easting
Northeast	384424.910	3014996.490
Southeast	384380.780	3015001.120
Southwest	384367.780	3014954.370
Northwest	384428.910	3014948.740

Coordinates are in NAD 1983, Maine West, Feet



SITE PLAN
BUILDING 611 - AIMD ENGINE TEST CELL PARCEL
RCRA PARTIAL CLOSURE REPORT
NAVAL AIR STATION BRUNSWICK, MAINE

SCALE AS NOTED	
FILE	
L:\NASB_BLDG_611_SITE_MAP.MXD	
REV	DATE
0	02/18/11
FIGURE NUMBER	
2	



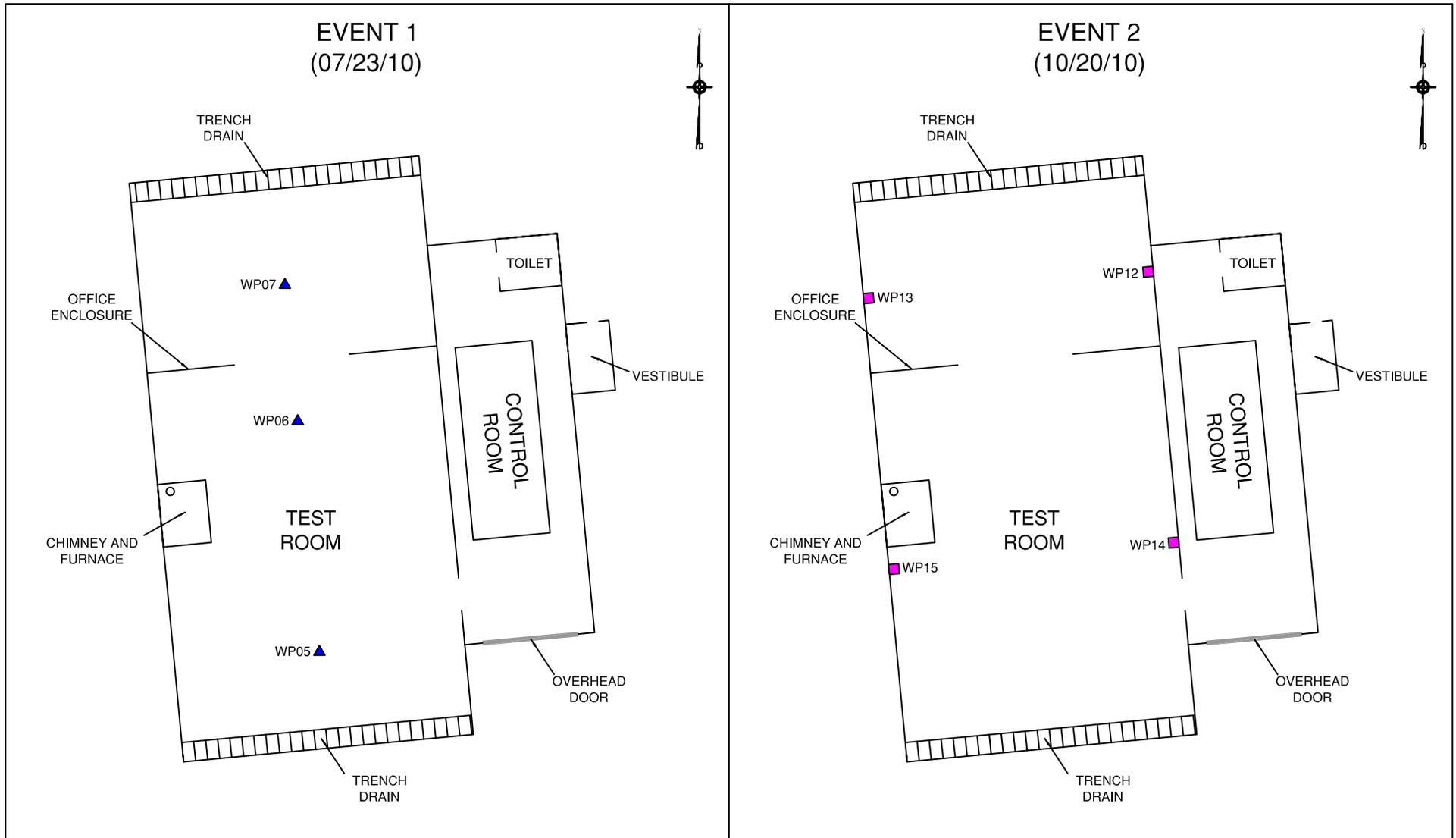
LEGEND

- WP01 ▲ FLOOR WIPE SAMPLE LOCATION (02/24/10)
- WP08 ■ WALL WIPE SAMPLE LOCATION (09/09/10)



PRE-CLEANING WIPE SAMPLE LOCATION MAP
 BUILDING 611 - AIMD ENGINE TEST CELL PARCEL
 RCRA PARTIAL CLOSURE REPORT
 NAVAL AIR STATION BRUNSWICK, MAINE

SCALE AS NOTED	
FILE \\.\NASB_BLDG_611_PRE_SAMP.DWG	
REV 0	DATE 02/17/11
FIGURE NUMBER 3	



LEGEND
 WP05 ▲ FLOOR WIPE SAMPLE LOCATION
 WP08 ■ WALL WIPE SAMPLE LOCATION

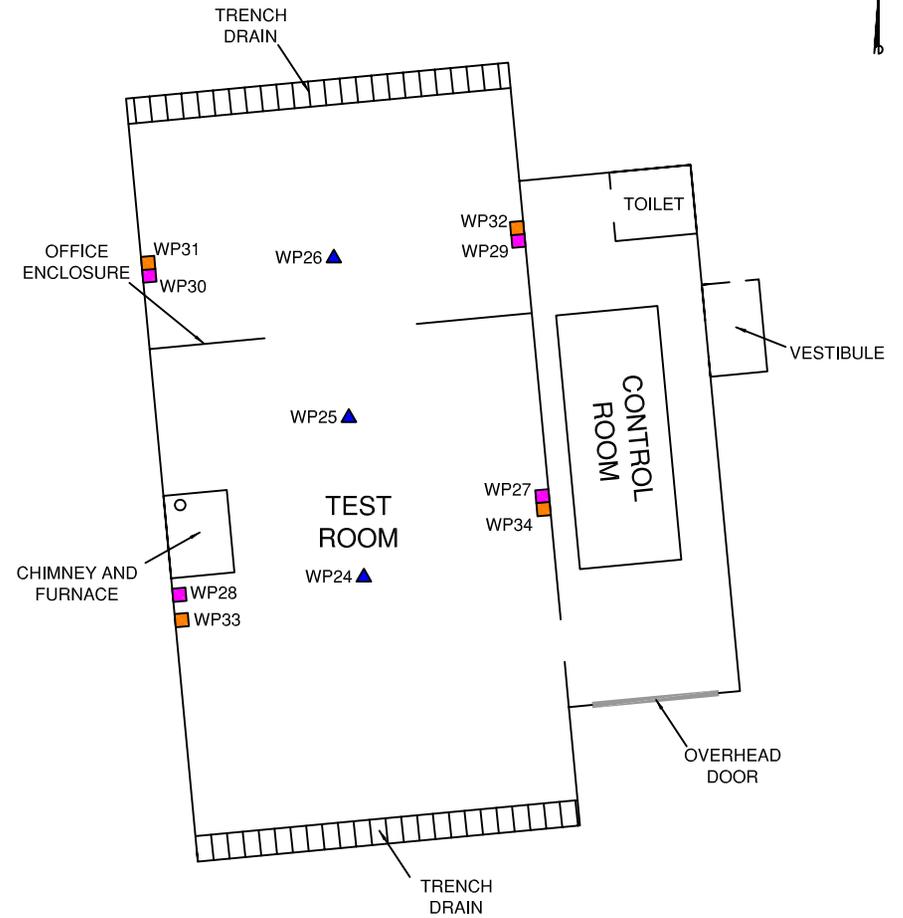
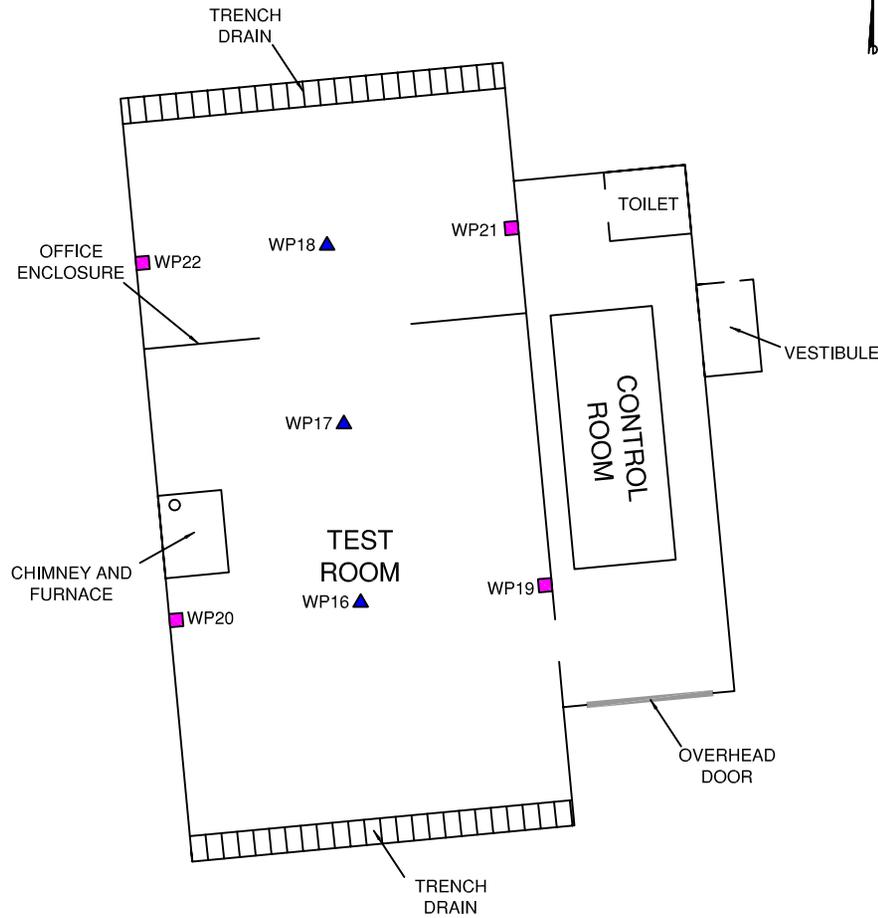


**POST-CLEANING WIPE SAMPLE LOCATION MAP
 EVENTS 1 AND 2
 BUILDING 611 - AIMD ENGINE TEST CELL PARCEL
 RCRA PARTIAL CLOSURE REPORT
 NAVAL AIR STATION BRUNSWICK, MAINE**

SCALE AS NOTED	
FILE \\.\NASB_BLDG_611_POST1.DWG	
REV 0	DATE 02/17/10
FIGURE NUMBER 4	

EVENT 3 (01/11/11)

EVENT 4 (01/21/11 & 02/01/11)



LEGEND

- WP16 ▲ FLOOR WIPE SAMPLE LOCATION
- WP21 ■ WALL WIPE SAMPLE LOCATION
- WP31 ■ WALL WIPE SAMPLE LOCATION (02/01/11)



TETRA TECH NUS, INC.

POST-CLEANING WIPE SAMPLE LOCATION MAP
EVENTS 3 AND 4
BUILDING 611 - AIMD ENGINE TEST CELL PARCEL
RCRA PARTIAL CLOSURE REPORT
NAVAL AIR STATION BRUNSWICK, MAINE

SCALE
AS NOTED

FILE
\\.\NASB_BLDG_611_POST2.DWG

REV	DATE
0	02/17/10

FIGURE NUMBER
5

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

Inspection Date: 1/21/10 and 4/28/10
Personnel: Brandon Smith, P.E. /Mindi Messmer / James Forrelli, P.E.
Weather: Clear and cold, snow-covered ground.

GENERAL BUILDING INFORMATION / USES

Building Name: Building 611 – AIMD Engine Test Facility
 Function: Engine Test Facility
 Size: 2,484 SF
 Year of Construction: 1967

Building 611 is located in the south-central portion of NAS Brunswick within the airfield apron secure perimeter fence. Building 611 is located within the Building 153, 555 and 611 parcel. To the north the parcel is bordered by the Hangar 5 Maintenance parcel which includes Building 554 (Fleet Support Unit) located directly to the north; directly to the east is Building 555 (Sonobuoy Building); to the south and to the west by the Airfield Parking Apron Area parcel and directly to the south is Building 553 (Airfield Support Building). Building 153 (Recycling Center) is located beyond Building 553 (Airfield Support Building) to the south. Building 611 is known as the Aircraft Intermediate Maintenance Division (AIMD) Engine Test Cell.

Building 611 consists of a 2,484-square-foot, single-story, steel-truss building on a concrete slab foundation. Constructed in 1967, the building is comprised of a large, out-of-air-frame, engine test room and a control room on the east side of the building. The building was originally heated by an oil-fired furnace and was converted to natural-gas heat in approximately 2002.

HWSA INSPECTION / CONDITION

Site visit observations are summarized below:

- At the time of inspection, Building 611 was unoccupied and was in fair condition.
- The interior of Building 611 consisted a test room and office on the west side of the building and a control room and restroom on the east side of the building.
- Control room equipment and office furniture were present in the building.
- No evidence of hazardous waste residues was observed.
- Staining was observed on the floor of the engine test cell room of Building 611.
- Structural modifications that could conceal signs of a past release were not observed.
- No hazardous waste storage areas or hazardous waste accumulation areas were observed.
- A bermed area is located on the eastern exterior of Building 611 which was use for fuel storage. A 1,000-gallon JP8 tank were located inside the bermed area.
- According to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith, a waste accumulation area was located on the west side of the building.
- No peeling paint was observed at Building 611.
- Trench drains were observed on the north and south sides of the engine test cell room.
- A natural gas furnace was observed on the west side of the engine test cell room.
- Three pole-mounted style transformers were identified in the vicinity of Building 611.
- A small yellow tank was observed in the bermed area located on the east side of the building on April 28, 2010.

POTENTIAL PCB-CONTAINING TRANSFORMERS

The following transformers are associated with Building 611 according to the NASB database:

Transformer	Manufacturer	Serial No.	Manufacture Date	Notes
38-kVa non-PCB-containing, pole-mounted	General Electric	GE G567256-66Y ⁽¹⁾	1966	<50 ppm PCB
38-kVa non-PCB-containing, pole-mounted	General Electric	GE G567255-66Y ⁽¹⁾	1966	0 ppm PCB
38-kVa non-PCB-containing, pole-mounted	General Electric	GE G567254-66Y ⁽¹⁾	1966	<50 ppm PCB
37.5-kVa non-PCB-containing, pole-mounted	McGraw-Edison ⁽²⁾	ME 90NA074-016 ⁽³⁾	January 1990	<1ppm PCB
37.5-kVa non-PCB-containing, pole-mounted	McGraw-Edison ⁽²⁾	ME 90NA074-036 ⁽³⁾	January 1990	<1ppm PCB
37.5-kVa non-PCB-containing, pole-mounted	McGraw-Edison ⁽²⁾	ME 90NA074-041 ⁽³⁾	January 1990	<1ppm PCB

APPLICABLE REPORTS / DOCUMENTS

Available historical aerial photos and base maps were reviewed for past uses:

1940 aerial – Building 611 area is vegetated and undeveloped. A road is visible directly to the north.

1943 map – Building 611 area not shown on map.

1946 map – Original runway and taxiways shown. The current Building 611 area is located directly south of the southwestern corner of the original runway and Gurnet Road and is located within the cleared runway approach area. Buildings 53, 54 and 55 are shown directly west of Building 611 along Ordnance Road.

1952 map – New runways and taxiways shown. No buildings shown at Building 611 location.

1953 aerial – New runways and taxiways shown. Resolution of photo not clear. Area of Building 611 shown as mostly undeveloped or grass-covered Gurnet Road shown to the west.

1956 map – Same as 1952 plan.

1957 map – Buildings 53, 54 and 55 no longer shown on map.

1958 aerial- Concrete apron area present. No buildings present in B611 parcel.

1962 map –area not shown.

1959 aerial – No buildings present.

1965 aerial – same as 1959 aerial except an east-west dirt access road to the airfield apron is visible. A yellow structure is visible on the airfield apron directly west of the current Building 611 location.

1966 aerial – same as 1965 aerial.

1972 aerial –area not shown.

1975 map – Area not shown.

1978 aerial – Buildings 611 and 617 (AMSE storehouse) to the north present. Heavy petroleum staining on apron to the northwest of B611. A small structure is visible approximately 60 feet south of Building 611.

1978 map – Buildings 611 and 617 shown.

1979 map – Same as 1975 map.

1980 aerial – Same as 1978 aerial.

1981 aerial – Same as 1978 aerial. A small structure is visible approximately 60 feet south of Building 611.

1983 map- Buildings 555 and 611 present.

1984 aerial – Building 611, 617, and 555 present (east). Not as much visual staining on apron as observed in 1978, 1980 and 1981 aerials. Additionally, a modification to the structure of Building 611 is observed when compared to the 1981 aerial.

1989 map – same as 1983 plan.

1989 aerial – same as 1984 aerial

1993 aerial – same as 1989 aerial.

1997 aerial – Same as 1993 aerial.

2006 map – Buildings 611 and 555 identified at current location with B553 to the south and B554 to the north.

Building 611 is first listed on NAS historical site lists starting in 1976 where it is listed as the T-56 Engine Test Facility with a size of 2,449 SF. On the 2006 building list Building 611 is listed as the T-56 Engine Test Facility with 2,484 SF built in 1967. On the 2008 NAS historical building list, Building 611 is listed as 2484 SF built in 1967.

Trench drains, located on the north and south sides of the inside Building 611, discharge to a 1,000-gallon, concrete chamber, oil/water separator (O/W separator) located on the southeast side of the building. The OWS then discharges to the sanitary sewer system.

According to NAS Brunswick records, a 1,000-gallon, fiberglass-reinforced-plastic, underground storage tank (UST) (10045-070) was installed at Building 611 in 1983 and removed in May 1995. According to historical site plans a new O/W separator was replaced in 1990. The following ASTs were associated with Building 611:

Serial No.	Capacity and Make	Product	Installation Date	Removal Date
A611.0	1,000 gallons SWS	JP8 jet fuel	1967	2009
A611.1	185 gallons DWS	Waste Oil	1994	Inactive
A611.2	1,000 gallons DWS	No. 1 fuel oil (heating)	1994	1999
A611.3	100 gallons SWS	JP8 jet fuel	1994	2009
A611.4	330 gallons SWS	No. 1 fuel oil (heating)	1998	2002
A611.5	330 gallons SWS	No. 1 fuel oil (heating)	1998	2002

MISCELLANEOUS NOTES

- In historical site plan dated 1990, soil excavation to a depth of 3' was planned in an approximate 80 by 40 foot area located approximately 60 feet south of B611 in the approximate location of the small structure observed south of B611 in the 1978 and 1981 aerials. The plan states that "soil shall be removed and disposed and to a depth of 3' and replaced with clean fill and loamed and seeded." Since there is no waste oil tank listed in the database prior to 1994, it is possible that this structure was used for waste oil disposal prior to 1994 (see fire emergency plan).
- Two spills were identified in the MEDEP spills database for B611. MEDEP spill file (P-619-1991) identified a spill of virgin JP5 (originally thought to be oil and/or solvent from underground piping associated with an AST. The release was identified when the O/W separator appeared to be backing up. Approximately 50 y³ of impacted soil was excavated and disposed.
- MEDEP spill file (P-354-2008) lists an unreported, unremediated spill of 2-3 gallons of JP8 in the tank dike observed in 2007 by SW Cole. This file also indicates that underground fuel lines were abandoned in place as approved by the MEDEP.

The following five releases were identified in the NASB spill logbook (MEDEP Logbooks #1 and #2):

Spill Date	Quantity	Material Released	DEP Spill Notified?	Notes:
12/15/1988	Unknown	Hydraulic oil	Unknown	Spill near O/W separator, backed up due to snow and rain. Cleaned with speedy dry.
1/11/1989	15-20 gallons	JP-5	Unknown	Fuel truck operator overfilled tank. Some discharged to storm drain. Covered drain with plastic and cleaned with absorbent pads.
2/14/1989	Unknown	unknown	Unknown	Badly flooded area due to storm drain backup from O/W separator. Cleaned with absorbent pads.
1/3/1994	20 gallons	Hydraulic oil	Unknown	Hydraulic lines ruptured. Drains were plugged, spill contained.
5/5/1995	Unknown	#2 fuel oil	Yes	Spill occurred during tank removal- contaminated soil stockpiled and removed.

HAZARDOUS WASTE STORAGE RECORDS

According to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith, Building 611 mainly produced "used oil" waste. This included oils, hydraulic fluids, and waste fuel from hooking up propellers and other parts. Aircraft engines were also cleaned with alcohol in Building 611. The rags used for the cleaning of the engines may have been part of the waste stream for this building. The used oils and rags were stored on the west side of the building in the container storage area prior to handling through the base-wide hazardous waste program. NAS Brunswick has a program in place that tracks hazardous waste to ensure proper handling and disposal.

INSPECTOR SIGNATURE: _____ 

PHOTOGRAPHS



No. 1 Building 611 – AIMD Engine test Cell, NAS Brunswick April 28, 2010
Engine Test Cell Building northeast elevation



No. 2 Building 611 – AIMD Engine test Cell, NAS Brunswick September 9, 2010
Engine Test Cell Building northwest elevation; west bermed area and detached boiler house



No. 3 Building 611 – AIMD Engine test Cell, NAS Brunswick September 9, 2010
Engine Test Cell Building east bermed area; inactive AST 611.1 shown



No. 4 Building 611 – AIMD Engine test Cell, NAS Brunswick September 9, 2010
Engine Test Cell Building control room



No. 5 Building 611 – NAS Brunswick
Engine test room after cleaning (view to south)

September 9, 2010



No. 6 Building 611 – NAS Brunswick
Engine test Cell interior; test room roof after cleaning

September 9, 2010