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NAS BRUNSWICK
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FINAL RESOURCE CONSERVATION AND RECOVERY ACT PARTIAL CLOSURE REPORT
FOR BUILDING 28 OXYGEN SHOP NAS BRUNSWICK ME
3/1/2010
TETRA TECH NUS

**RCRA PARTIAL CLOSURE REPORT
for
BUILDING 28 – OXYGEN SHOP
NAVAL AIR STATION BRUNSWICK, MAINE
USEPA IDENTIFICATION NUMBER ME8170022018
MARCH 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 Building 28, at Naval Air Station Brunswick (NAS Brunswick).

2. PROPERTY DESCRIPTION

Building 28 is located at the intersection of 4th Street and Seahawk Avenue at NAS Brunswick (Figures 1 and 2). Constructed in 1944, Building 28 is a 784 square-foot single story building on a slab foundation with stucco exterior cinder block walls.

The Building 28 Oxygen Shop served as the recharge station for ground support equipment oxygen and nitrogen cylinders until approximately 2003, when operations were moved to the new distribution facility. Building 28 has been unoccupied since that time. The building contains a cylinder recharge shop, a compressor room, and additional work space. An external lean-to area with chain-link fence is attached, housing three aboveground storage tanks (ASTs). One of the tanks contained liquid oxygen and the other two contained liquid nitrogen. All three tanks are now empty. Building 28 was originally heated by steam heat supplied by the public works central heating plant, with a steam pit located inside the building.

3. PROPERTY HISTORY AND RECORDS RESEARCH

The Tetra Tech NUS, Inc. (TtNUS) 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 28, including past use and operations at that location.

According to NAS Brunswick Environmental Department personnel, since its construction in 1944, the sole use of Building 28 has been refilling oxygen and nitrogen cylinders for ground support equipment. There is no record of hazardous waste operations at Building 28.

The NAS Brunswick records search revealed the following information pertinent to a future determination as to whether the hazardous waste closure requirements of the MEDEP Regulations Chapter 851, Standards for Generators of Hazardous Waste, Section 11 apply to Building 28.

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. Building 28 is present in all historical aerial photographs reviewed (1958, 1978, 1984, 1989, 1993, and 1997).

No polychlorinated biphenyl (PCB)-containing transformers that could be a potential source of PCB contamination were listed in the NAS Brunswick Removed Transformers list at Building 28.

Additional information concerning Building 28 discovered during the file and database search is provided below.

No underground storage tanks (USTs) were registered to Building 28. Two ASTs containing liquid nitrogen and one AST containing oxygen were present in the lean-to area of Building 28.

4. SITE VISIT AND INVESTIGATION

A Building 28 site visit was conducted by Mr. Brandon Smith, P.E. and Mr. James Forrelli, P.E., of TtNUS on June 30, 2009. The purpose of the visit was to verify information gathered during the records search and to collect additional information as necessary to prepare this RCRA Partial Closure Report. TtNUS personnel were accompanied by Mr. D. Bruce Smith, the NAS Brunswick Hazardous Waste Manager and Mr. Paul Burgio, Navy Base Realignment and Closure (BRAC) Program Management Office (PMO). The Building 28 location was visually inspected for signs of hazardous waste generation or storage activity. Site visit observations, recorded on the attached Building Inspection Form⁽¹⁾, are summarized below:

- At the time of inspection, Building 28 was not occupied and in fair condition.
- The interior consisted of a cylinder recharge shop, compressor room, and additional work space. An external lean-to area with chain-link fence was attached and houses the three ASTs referenced in Section 3.
- No evidence of current or past hazardous waste generation activities was observed.
- 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.
- No hazardous waste storage or accumulation areas were observed.
- No transformers that could be a potential source of PCB contamination were observed in the immediate vicinity.
- The paint coating of the main room wall is deteriorating (peeling), resulting in the accumulation of paint-chip waste material on the floor. (Disposal of the paint-chip waste material may be subject to RCRA requirements, as discussed in Section 6 below.)

Based on the records research findings and site visit observations, it was determined that neither further inspection nor sampling of Building 28 is required to complete the MEDEP hazardous waste closure requirements.

5. HAZARDOUS WASTE GENERATION AND STORAGE

Based on the records research, site visit observations and NAS Brunswick Environmental Department personnel interviews, no hazardous waste generation activity or hazardous waste accumulation or storage activity was conducted at Building 28.

6. OTHER ENVIRONMENTAL CONSIDERATIONS

If the deteriorating paint observed during the Building 28 inspection is lead-based, disposal of the paint-chip waste material may be subject to RCRA requirements. Paint wastes exhibiting the "toxicity characteristic" as measured using the Toxicity Characteristic Leaching Procedure (TCLP) must be handled and disposed of in conformance with hazardous waste laws and regulations. Lead-contaminated wastes with TCLP levels at or above 5 parts per million lead are defined as hazardous waste.

Total RCRA 8 metals analysis was performed on Building 28 paint-chip samples as a screening tool in lieu of TCLP. On October 7, 2009, TtNUS collected two paint chip samples from Building 28 for RCRA 8 metals analysis by its subcontractor analytical laboratory (Analytics Environmental Laboratory, Portsmouth, New Hampshire). Sample NASB-B28-PC01 was collected from the wall of the main room of the Oxygen Shop, and sample NASB-B28-PC02 from the floor of the main room, adjacent to the tank rack (Figure 3). Sample analytical data underwent limited data

validation, consisting of field duplicate evaluation, blank contamination evaluation and completeness evaluation.

Total RCRA 8 metals results for each sample are summarized in Table 1. For each metal, results were compared to 20 times the TCLP regulatory limit for hazardous waste. Using "the Rule of 20," if a result is less than 20 times its TCLP regulatory limit, then the sample could not possibly "leach" enough of the chemical under TCLP conditions to fail the TCLP limit, even if all the chemical dissolved into the extraction fluid.

**TABLE 1
PAINT CHIP SAMPLE RCRA 8 METALS RESULTS
BUILDING 28 - OXYGEN SHOP**

RCRA 8 Metals	TCLP Limit (mg/L)	20 x TCLP Limit (mg/kg) ⁽¹⁾	Total Concentration (mg/kg)	
			B28-PC01	B28-PC02
Arsenic	5	100	0.72	2.1
Barium	100	2000	1100	570
Cadmium	1	20	2.3	15
Chromium	5	100	330	88
Lead	5	100	1500	550
Mercury	0.2	4	14	6.4
Silver	5	100	0.18 J	0.75

Notes:

Bold italics font indicates result exceeds 20 times the TCLP limit.

(1) TCLP analysis was not conducted. As a screening tool, metals results are compared to 20 times the TCLP limit using "the Rule of 20".

J estimated concentration

mg/L milligrams per liter

mg/kg milligrams per kilogram

TCLP Toxicity Characteristic Leaching Procedure

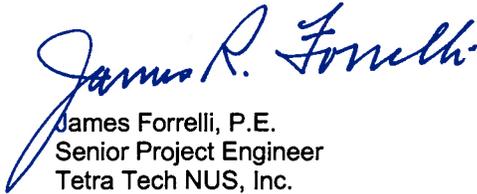
As presented in Table 1, in paint chip sample NASB-B28-PC01 concentrations of chromium (330 mg/kg), lead (1,500 mg/kg), and mercury (14 mg/kg) exceed 20 times the respective TCLP regulatory limit. In sample NASB-B28-PC02, concentrations of lead (550 mg/kg) and mercury (6.4 mg/kg) exceed 20 times the TCLP standard. Since the total levels of lead and other RCRA metals exceed 20 times the TCLP limits, a TCLP test should be completed for the Building 28 paint-chip waste to determine the applicable waste handling and disposal requirements.

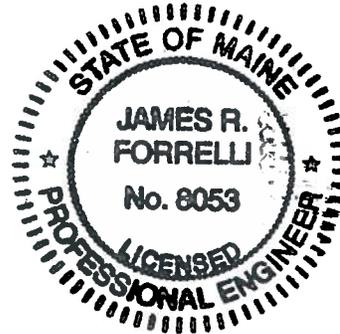
7. LIMITATIONS

This investigation of the hazardous waste closure requirement applies to the Building 28 footprint (as shown on Figure 2) only. It does not apply to the land surrounding or the groundwater underlying Building 28.

8. CERTIFICATION

Based on the findings of this investigation, there have been no activities resulting in the generation, accumulation or storage of hazardous waste at Building 28, NAS Brunswick, Maine. Therefore, the hazardous waste closure of Building 28 was completed in accordance with the provisions of MEDEP Regulations Chapter 851, Standards for Generators of Hazardous Waste, Section 11.

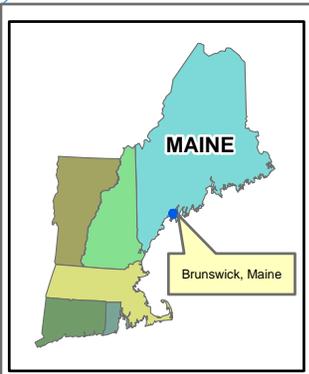
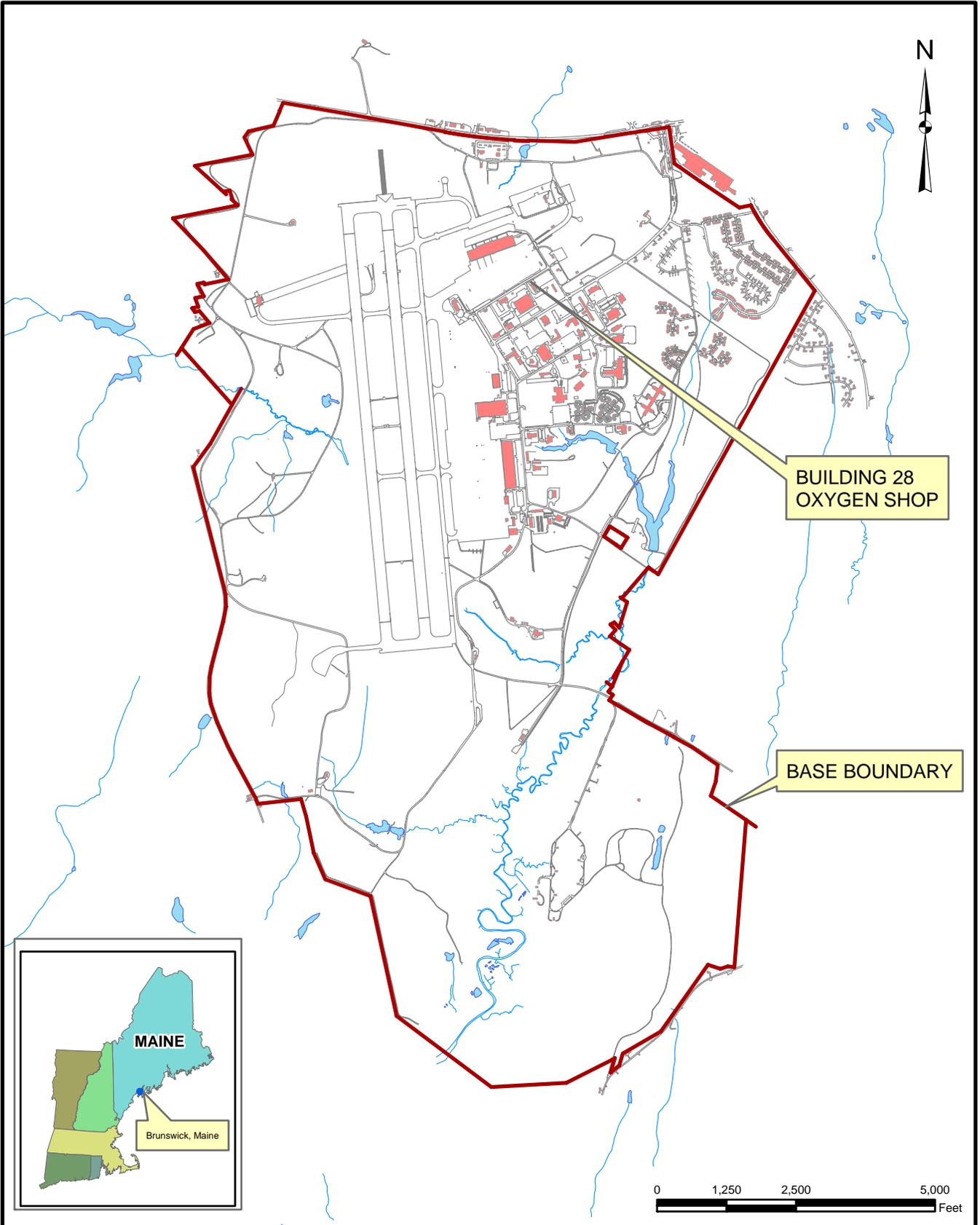

James Forrelli, P.E.
Senior Project Engineer
Tetra Tech NUS, Inc.



⁽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

- 1958 NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. 10/09/58.
- 1978 NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. 11/22/78.
- 1984 NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. 04/23/84.
- 1989 NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. 04/02/89.
- 1993 NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. 11/08/93.
- 1997 NAS Brunswick Aerial Photographs. James W. Sewall Company, Old Town, ME. 05/1997.
- BNAS Reuse Master Plan Property Condition Assessment. Mid-Coast Regional Redevelopment Authority, Brunswick, ME. 2006
- Master/Historical Underground Storage Tank Inventory. NAS Brunswick, Maine. 02/05/96.



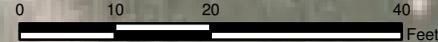
SITE LOCATION MAP
BUILDING 28 - OXYGEN SHOP
RCRA PARTIAL CLOSURE REPORT
NAVAL AIR STATION BRUNSWICK, MAINE

SCALE AS NOTED	
FILE I:_NASB_BLDG_28_LOCUS.MXD	
REV 0	DATE 03/10/10
FIGURE NUMBER 1	

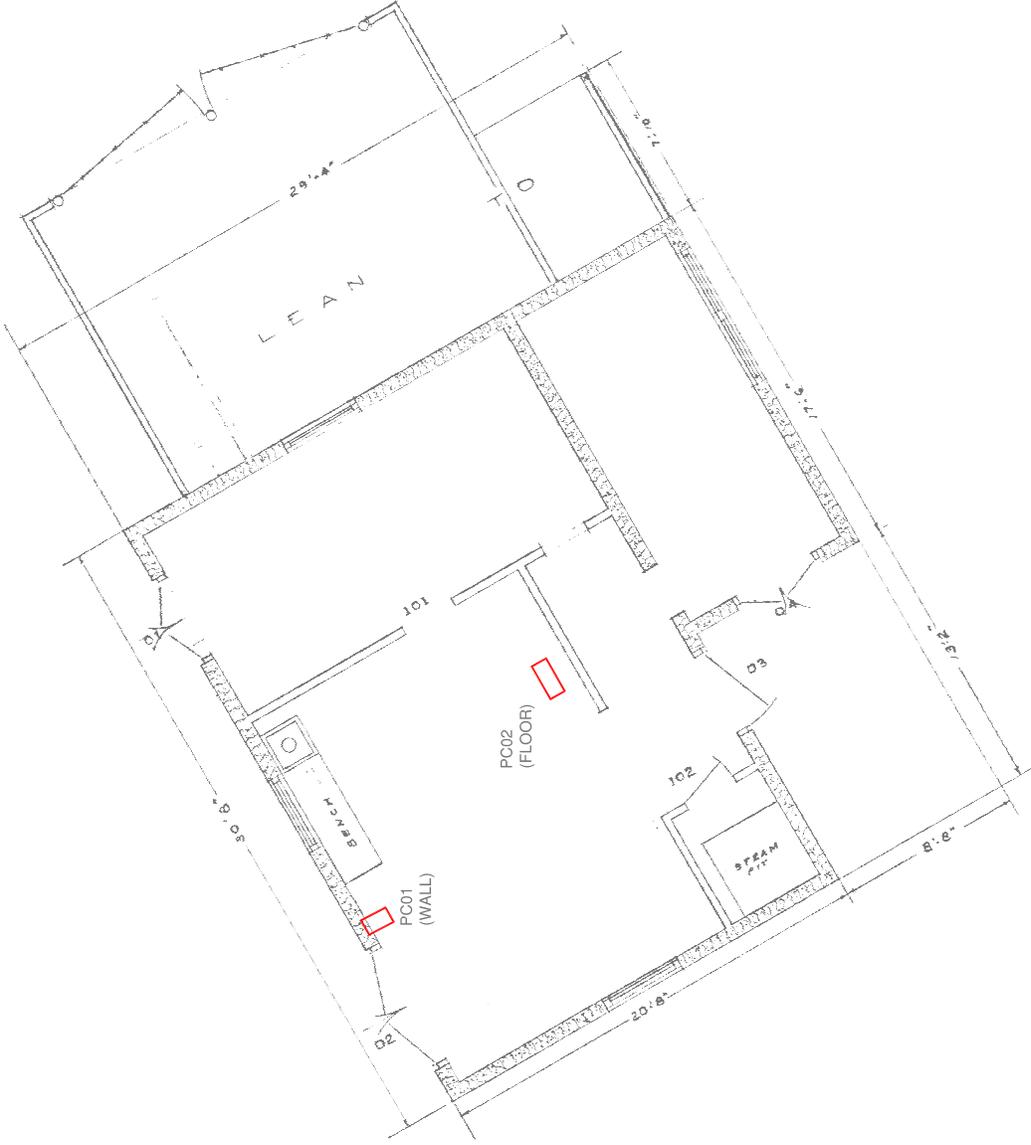


Building Corner	Northing	Easting
North	388705.193	3015408.869
East	388682.838	3015422.962
South	388667.773	3015400.607
West	388694.987	3015383.112

Coordinates are in NAD 1983, Maine West, Feet



 Tetra Tech NUS, Inc.	SITE PLAN BUILDING 28 - OXYGEN SHOP RCRA PARTIAL CLOSURE REPORT NAS BRUNSWICK, MAINE	SCALE AS NOTED
		FILE \\.\NASB_BLDG_28_ORTHO.MXD
		REV DATE 0 01/15/10
		FIGURE NUMBER 2



LEGEND



PC01 - PAINT CHIP SAMPLE



FLOOR PLAN
 BUILDING 28 - OXYGEN SHOP
 NAS BRUNSWICK
 BRUNSWICK, MAINE



TETRA TECH INUS, INC.

SCALE
 AS NOTED

FILE
 \NASB_BLDG_28_FP.DWG

REV 0 DATE 01/21/10

FIGURE NUMBER
 3

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

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

GENERAL BUILDING INFORMATION / USES

Building Name: Oxygen Shop
 Function: Oxygen Shop
 Size: 784 SF
 Year of Construction: 1944

Building 28 is located at the intersection of 4th Street and Seahawk Avenue at NAS Brunswick. It was constructed in 1944 and served as an oxygen and nitrogen refilling shop for its entire history. Building 28 consists of a 784 square-foot, stucco-exterior cinder block wall one level building on a slab foundation.

Building 28 was used to refill oxygen and nitrogen tanks for the aircraft. Building 28 contains a carburetor shop, compressor room, and additional work space. An external lean to area with chain-link fence is attached and houses two ASTs containing liquid oxygen and nitrogen.

Building 28 was used only as the oxygen and nitrogen refueling office. No hazardous materials were used in its operation and no hazardous waste was generated, according to NASB personnel.

Building 28 was originally heated by steam heat, with a steam pit located inside the building.

BUILDING INSPECTION / CONDITION

No record of hazardous waste stored at Building 28.

The building was not occupied at the time of the site visit and appeared in fair condition. Asbestos warning labels were noted on interior walls.

No evidence of current or past hazardous waste generation activities was observed.

No evidence of hazardous waste residues was observed.

No signs of a past release (staining, unusual odors, stressed vegetation, etc.) were observed. No modifications to the structure, which may conceal signs of a past release, were observed.

No hazardous waste storage areas or hazardous waste accumulation areas were observed.

No transformers that could be a potential source of polychlorinated biphenyls (PCBs) contamination in the event of a leak were observed.

APPLICABLE REPORTS / DOCUMENTS

Available historical aerial photos were reviewed for past property uses:

- 1958 - Building 28 present.
- 1978 - Building 28 present.
- 1984 - Building 28 present.
- 1993 - Building 28 present.
- 1997 - Building 28 present.

No USTs were present at Building 28 according to NASB records.

Two ASTs containing liquid nitrogen and oxygen were present in the lean to area of Building 28.

A memorandum from the NASB Asbestos Program Manager, stated that "All painted surfaces of building 28 are considered to contain some levels of lead. The interior wall and ceiling paint has been analyzed and found to contain less than 0.022%. Other building materials may contain lead, as in roof flashing, vent sealant and the window glazing. Laboratory analysis using PLM indicates that there are several asbestos containing building materials located in building 28. There is approximately 200 square feet of transite board in the mechanical room, approximately 20 linear feet of straight pipe insulation and one insulated pipe joint in the work shop. Asbestos containing vinyl composition tile and the associated mastic is throughout the building. The roof tar has been tested by PLM analysis with negative results. However, until TEM analysis is performed the tar shall remain suspect for asbestos content. "

HAZARDOUS WASTE STORAGE RECORDS

No hazardous waste was historically stored at Building 28, according to NAS Brunswick Hazardous Waste Manager, D. Bruce Smith.

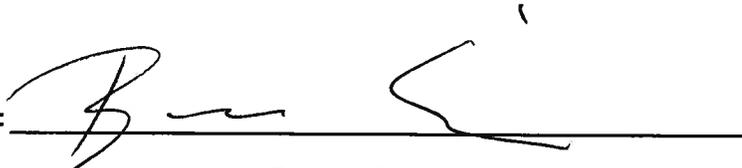
MISCELLANEOUS NOTES

Tetra Tech personnel were accompanied on the inspection by D. Bruce Smith, NAS Brunswick Hazardous Waste Manager and Paul Burgio, Navy BRAC PMO.

P. Burgio (Navy BRAC PMO) requested that lead paint chip samples be collected at Building 28.

(SEE ATTACHED BUILDING FLOOR PLAN AND PHOTOGRAPHS)

INSPECTOR SIGNATURE:



Brandon Smith, P.E.

PHOTOGRAPHS



No. 1 Building 28 – NAS Brunswick June 30, 2009
Liquid nitrogen and oxygen tanks in lean to area of Building 28 – Oxygen Shop.



No. 2 Building 28 – NAS Brunswick October 7, 2009
Sampling paint chips in Building 28 – Oxygen Shop