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STATEMENT OF BASIS SOLID WASTE MANAGEMENT UNIT 7 BUILDING N 126 PLATING
SHOP DRY WELL MILLINGTON SUPPACT TN

Statement of Basis
Solid Waste Management Unit 7
Building N-126 Plating Shop Dry Well
Naval Support Activity Mid-South
Millington, Tennessee

INTRODUCTION

This Statement of Basis contains a summary of the location, operating history, contaminants detected, and remedy selected for Solid Waste Management Unit (SWMU) 7, Building N-126 Plating Shop Dry Well, Naval Support Activity Mid-South, Millington, Tennessee (Figure 1).

SPECIFIC SITE INFORMATION

Building N-126 is within the 538-acre airfield land parcel that was transferred to the City of Millington in 1999. The building is a two-story aircraft hangar/building with classrooms and offices. Formerly, the Aircraft Intermediate Maintenance Department (AIMD) operated a plating shop that reportedly used a 10-foot square by 6-foot deep gravel-filled dry well for disposing of plating wastes. To evaluate whether past operations impacted soil and groundwater, the dry well was designated as SWMU 7, prompting its characterization within the RCRA program.

The subsequent RCRA Facility Investigation (RFI) initially focused on the dry well but expanded to include a large area when it became apparent there were multiple sources of the groundwater contaminant trichloroethylene, a common degreaser, beneath the tarmac and airport infield (RFI; EnSafe, 2000).

SUMMARY OF CONTAMINANT EVALUATION

Multiple investigations have been conducted at SWMU 7, beginning in 1983 and concluding with the 1999 Voluntary Clean-Up Action (VCA). However, the most comprehensive soil and groundwater data set were collected as part of the RFI. A summary of the number of samples collected from each media and those that exceeded relevant action levels are discussed below. Soil and groundwater sample locations are provided on Figures 2 and 3.

Soil

Soil contaminants detected above relevant action levels criteria consisted of dieldrin and several polycyclic aromatic hydrocarbons (PAHs), and a single detection of the polychlorinated biphenyl (PCBs) Aroclor 1260. Table 1 lists contaminants detected above the residential and/or industrial screening criteria, sample locations, and the associated concentrations. In September 1996, the dry well was removed through a VCA, during which the pit floor and walls were over-excavated by approximately 2 feet. Six effectiveness soil samples were collected from the floor of the excavation and analyzed for metals, VOCs, and TPH. The excavation was backfilled and capped with concrete (EnSafe, 1999). There were no constituents detected above regulatory action levels

in the excavation. Risks to human health from the contaminants identified at SWMU 7 outside the excavation were evaluated in accordance with existing USEPA and TDEC methods. To assess human health risk at SWMU 7, data from the RFI were used to evaluate risks using future residential, construction, and industrial land-use scenarios (EnSafe, 2005). The human health risk associated with SWMU 7 soil indicates no contaminants of concern are present under an industrial reuse of the site. Aroclor 1260 in surface soil was determined to be a chemical of concern for a hypothetical resident.

Table 1
Soil Contaminants Exceeding
Risk Based Screening Criteria (ppb) ^a

Sample Location	Analyte	Result	RBC-RES ^b	RBC-IND ^b
	<i>PAHs^c</i>			
007S0002	Benzo(a) pyrene	1,200	87	780
007S0002	Benzo(a)anthracene	1,200	870	7800
007S0002	Benzo(b)fluoranthene	1,200	870	7,800
007S0002	Dibenz(a,h)anthracene	240	87	780
007SMW11	Benzo(a) pyrene	360	87	780
007SMW11	Dibenz(a,h)anthracene	97	87	780
007SMW13	Benzo(a)anthracene	930	870	7,800
007SMW13	Benzo(a) pyrene	840	87	780
007SMW13	Benzo(b)fluoranthene	960	870	7,800
007SMW13	Dibenz(a,h)anthracene	240	87	780
007SMW16	Benzo(a)pyrene	216	87	780
007SMW17	Benzo(a)pyrene	140	87	780
007SMW18	Benzo(a)pyrene	350	87	780
	<i>Pesticides/PCBs</i>			
007SMW16	Dieldrin ^d	420	40	360
007SMW17	Dieldrin ^d	360	40	360
007S0007	Aroclor 1260	20,000	320	2,900

- Notes:**
- ^a Units of ppb denote parts per billion.
 - ^b Denotes residential (RES) and industrial (IND) risk based concentration taken from *Risk-Based Concentration Table*, October 7, 1999 (USEPA, 1999).
 - ^c Contaminant is a PAH (polycyclic aromatic hydrocarbon).
 - ^d Note the background reference concentration (262 ug/kg) is above the USEPA's residential RBC screening values.

Groundwater

Seven monitoring wells (007G01LS, 007G03LS, 007G05LS through 007G09LS) were set in the loess — clay/silt deposits that extend from the ground surface to a depth of approximately 30 feet. The maximum contaminants detected above a screening value were limited to a single monitoring well (007G01LS). 1,1,1-trichloroethylene was detected above the 5 parts per billion (ppb) MCL at 17 ppb and benzene was detected above the 5 ppb MCL at 8 ppb.

SELECTED REMEDY

Groundwater contamination is being addressed as part of AOC-A, North Side Groundwater. The selected remedies for SWMU 7 are the following land-use controls:

- The site must be used for nonresidential purposes only.
- The use of shallow (loess) groundwater is prohibited. The installation of wells in the Memphis Sand or deeper aquifers must be double-cased to prevent any downward migration of contamination. The use of groundwater as a drinking water source is controlled by Shelby County local ordinances.

These land-use controls have been incorporated into the *Land-Use Control Implementation Plan (LUCIP)* for Area of Concern A which apply to the entire Airfield area and are memorialized in the Airfield deed (*Quitclaim Deed JY7103*).

The LUCIP includes a *Land-Use Control Compliance Certification* form to be completed by the Air Port Authority, annually which ensures the protections remain in place and includes the following:

- Location of land subject to LUC
- Explanation of LUC (e.g., signage and fencing requirements, restrictions, etc.)
- Duration of the LUC
- Requirements and frequency of LUC inspections, including documentation requirements.

REFERENCES

Technical Memorandum – Preliminary Risk Evaluation SWMU 7 – Building N-126 Dry Well; Naval Support Activity Mid-South. (EnSafe, December 21, 2005).

RCRA Facility Investigation Report; Naval Support Activity Mid-South. AOC A. Northside Fluvial Groundwater. Revision 02 (EnSafe, February 17, 2000).

RCRA Facility Investigation Report Addendum; Naval Support Activity Mid-South. Area of Concern A. Northside Fluvial Groundwater. Revision 0 (EnSafe, February 17, 2000).

Voluntary Corrective Action Report; RCRA Facility Investigation; Naval Support Activity Memphis; SWMU 3, 7, 17, 18, 19, 67, and Apron Area Gasoline Pits; Revision 2 (EnSafe, May 1999).

Assembly A Long-Term Groundwater Monitoring Report (March 1995 – August 1996); Naval Support Activity Memphis; Revision 1 (EnSafe, Mary 30, 1997).

FIGURES FOR SWMU 7

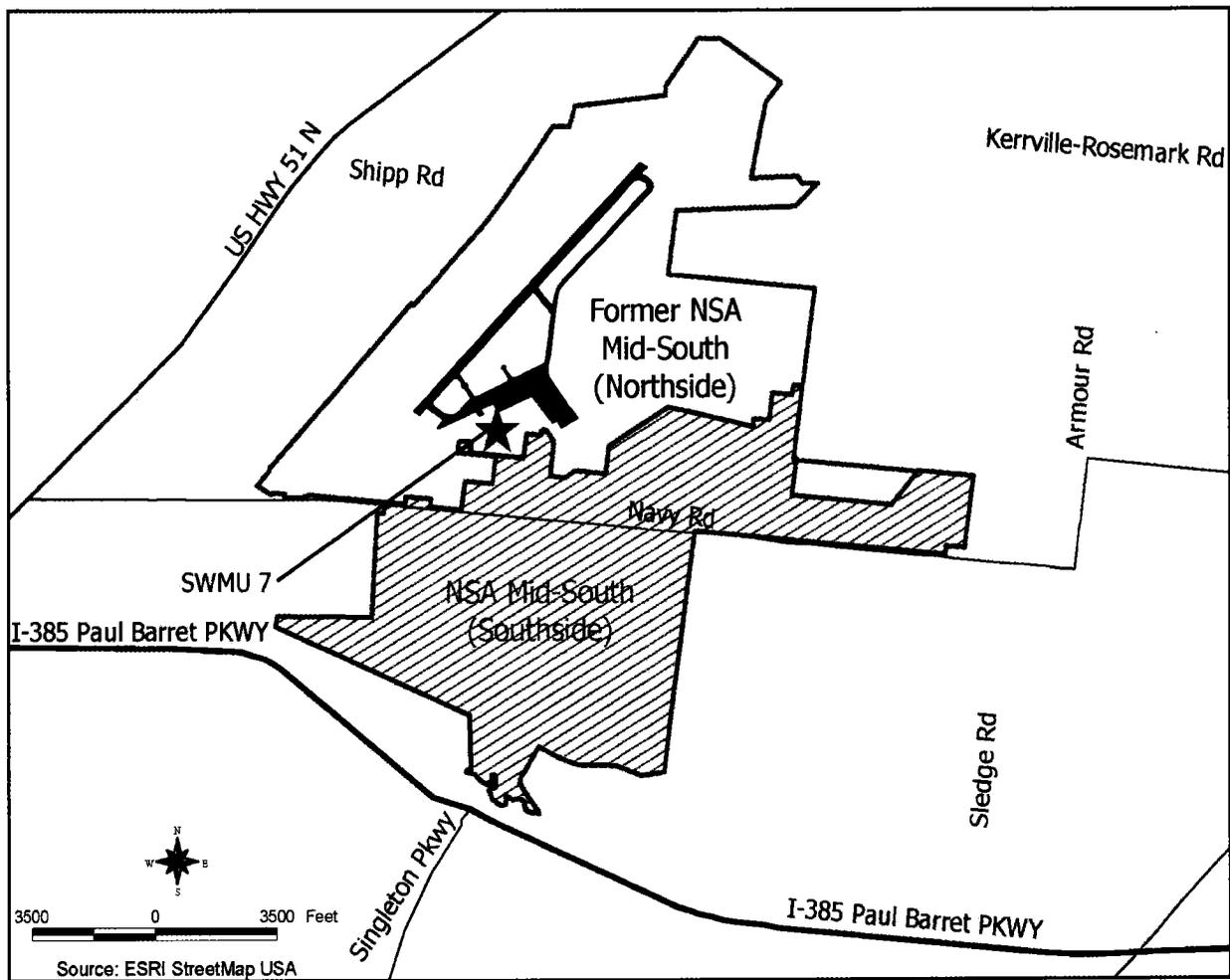
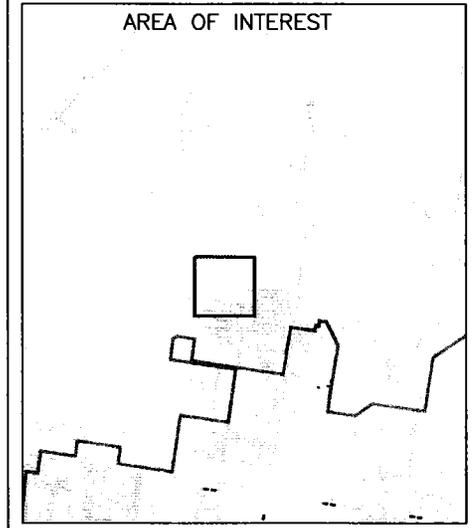
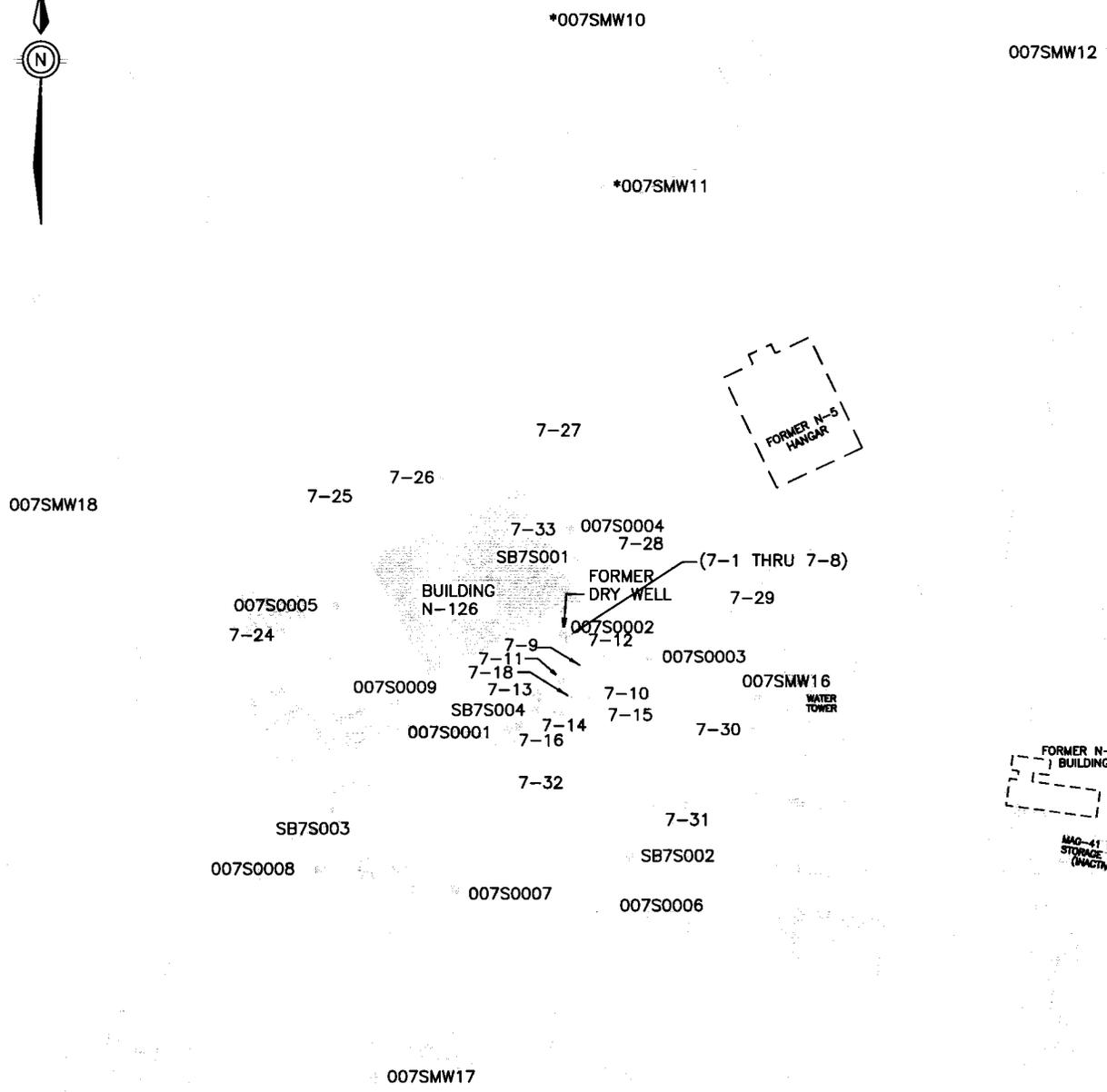


Figure 1: SWMU 7 Location at NSA Mid-South, Millington, Tennessee
Building N-126 Plating Shop Dry Well

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LEGEND

- SOIL SAMPLE COLLECTED WITH DIRECT PUSH TECHNOLOGY
- SOIL BORING
- BUILDING
- AREA OF INVESTIGATION
- NSA MID-SOUTH BOUNDARY

- 007S0004 - SOIL BORING ID
- SB7S001 - SOIL BORING ID
- 7-29 - DPT SAMPLE ID

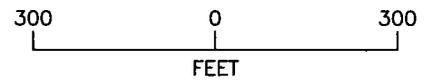


FIGURE 2
SWMU 7 STATEMENT OF BASIS
SOIL SAMPLE LOCATIONS

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A:\03570270045_FIG 3_SWMU 7_STATEMENT OF BASIS_LOESS_GROUNDWATER_SAMPLE_LOCATIONS.DWG

