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NAS FORT WORTH
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ACTION MEMORANDUM FOR TIME CRITICAL REMOVAL ACTION FOR FORMER SKEET
RANGE AT CHILD DEVELOPMENT CENTER NAS FORT WORTH JRB TX
10/24/2014
NAVFAC SOUTHERN

Action Memorandum

Date: 24 October 2014

Subject: Time Critical Removal Action — Former Skeet Range at Child Development Center
Naval Air Station Fort Worth Joint Reserve Base, Fort Worth, Texas

1.0 PURPOSE

The purpose of this Action Memorandum is to document approval of the proposed time-critical removal action (TCRA) for the skeet range formerly situated at the current location of the Child Development Center at Naval Air Station Joint Reserve Base (NAS JRB) Fort Worth, Texas (Figure 1-1 of Attachment). NAS JRB Fort Worth is an active military facility which provides land-based support and schooling for electronic countermeasures aircraft, patrol aircraft, and fleet air reconnaissance aircraft. The former skeet range is located in the northeast corner of Air Field, the current main operational base. The U.S. Navy is the lead agency and is conducting this TCRA.

This TCRA will be implemented at the former skeet range. Past use of the skeet range has resulted in soils affected with residual polycyclic aromatic hydrocarbons (PAHs) from clay target pigeons. Portions of the site are currently used for residential purposes and the Child Development Center (CDC). Adjacent land use includes several athletic fields and a track used for recreational purposes by Navy personnel as well as civilians. Based on available site data and standard risk screening protocols, PAH concentrations in the surface soil at the sites present unacceptable risks to human health based on current land uses. Therefore, the purpose of the TCRA is to select and implement the removal activities to allow the continued use of the CDC and existing residences.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) and the National Oil and Hazardous Substances Contingency Plan (NCP) authorize two types of responses to releases of hazardous substances into the environment. These responses include remedial and removal actions. Remedial actions involve the study, design, and construction of long-term actions directed toward a permanent remedy. CERCLA and the NCP define a removal action as any one or all of the following:

1. cleanup or removal of released hazardous substances
2. actions to mitigate a threat or release of hazardous substances
3. actions to monitor and evaluate release conditions
4. disposal of removed material
5. actions to mitigate or prevent damage to public health, welfare, or the environment

Specific topics addressed in this Action Memorandum demonstrate that the presence of PAHs in surface soil at the CDC and one residence meet statutory and NCP requirements for a removal action.

2.0 SITE CONDITIONS AND BACKGROUND

NAS JRB Fort Worth is located in Fort Worth, Tarrant County, Texas. The base was commissioned as Tarrant Field in 1942 as a primary aviation training center for bomber and patrol training operations and is currently occupied by 33 tenant commands. The former skeet range is located in the northern portion of the Air Field, within the current main operational base. This section describes the history, characteristics, and results of previous investigations conducted at this site.

2.1 Site History

The former skeet range was identified on a 1951 Base Layout Map. The map shows two semi-circular firing lines with individual firing stations and high/low throwing houses, all of which were generally oriented toward the northwest. Sometime between 1978 and 1995, recreational fields including a running track and a baseball field were constructed in the shot path of the skeet range. The U.S. Air Force 1993 Environmental Baseline Survey, which was performed in conjunction with the base realignment and closure activities, did not identify the presence of the former skeet range. Additionally, the former skeet range was not identified in the Navy's 2000 Closed, Transferred, Transferring, Active, and Inactive Range Survey. In 2007, the CDC was constructed over or very near the former skeet range firing stations.

2.2 Site Characteristics

The former skeet range is located in the northern portion of NAS JRB Fort Worth, northwest of Captain's Row and east of Sesame Street, between the CDC (Building 3320) and the Baseball Field Snack Bar (Building 3334). Based on a 900-foot shot radius, the former skeet range occupied an approximately 1,271,700-square foot area.

2.3 Results of Previous Investigations

Site inspection and sampling efforts conducted to date indicate the presence of both clay target fragments containing PAHs and residual surface soils impacted with PAHs above Texas Commission on Environmental Quality (TCEQ) Protective Concentration Levels (PCLs), which are intended to ensure protection of human health under assumed long-term, residential land use exposure scenarios.

Limited surface soil sampling (LSSS) was conducted to determine whether the site contained lead and PAHs above regulatory levels and whether a follow-on investigation or removal action was warranted (U.S. Navy 2014). Chemical-specific applicable or relevant and appropriate requirements (ARARs) for soil at the site are discussed in Section 4.3, which describes the results of the LSSS for the site.

Lead and PAHs associated with the former skeet range were anticipated primarily in the near-surface soil (anticipated depth range from ground surface to 12 inches below ground surface [bgs]) along the former firing lines and immediately down range; however, the majority of the lead shot would have been expected to travel farther down range and into the track and recreational fields located 300 feet to 500 feet to the north.

LSSS at the former skeet range entailed a discreet sampling approach and was intended to assess the designated playgrounds and common areas of the CDC property. Additionally, the residence located at 3265 Captain's Row was included in the sampling since it was anticipated to be directly adjacent to and due east of the firing lines. On 26 August 2014, the Navy collected a total of 13 surface soil samples; 11 were collected in the playground areas and two were collected within the CDC property common areas beyond the playground boundaries. Also, two soil samples were collected from the back yard of the residence at 3265 Captain's Row and two additional soil samples were collected from the front yard of this residence on 18 September 2014. All soil samples were collected from the ground surface to 6 inches bgs and analyzed for 8 RCRA metals, including lead and PAHs (U.S. Navy 2014).

With the exception of six PAH constituents, PAH concentrations in soil were below their respective TCEQ PCLs for unrestricted residential land uses under the Texas Risk Reduction Program (TRRP); lead did not exceed its PCL. Figure 2-1 presents the laboratory data on a call-out map and Table 2-1, below, presents the range of PAH concentrations of the six constituents that exceeded their respective PCLs.

| Table 1 Removal Evaluation Area Lead and PAH Concentrations in Surface Soil | | | |
|--|--|--|--|
| Analyte | Range of Concentrations in Surface Soil (mg/kg) | Human Health Screening Levels | |
| | | Texas Residential Total Soil Combined PCL (mg/kg) | U.S. EPA Residential Soil RSL (mg/kg) |
| Lead | 17.1 — 79.9 | 500 | 400 |
| Benzo(a)anthracene | 0.898 — 159 | 5.7 | 0.15 |
| Benzo (a)pyrene | 0.856 — 185 | 0.56 | 0.015 |
| Benzo(b)fluoranthene | 0.885 — 168 | 5.7 | 0.15 |
| Benzo(k)fluoranthene | 0.886 — 127 | 5.7 | 1.5 |
| Dibenz(a,h)anthracene | ND — 28 | 0.55 | 0.015 |
| Indeno(1,2,3-cd)pyrene | 0.56 — 136 | 5.7 | 0.15 |

- Notes:**
- mg/kg = milligrams per kilogram
 - PAH = Polycyclic Aromatic Hydrocarbons
 - PCL = Protective Concentration Level
 - RSL = Regional Screening Level
 - U.S. EPA = United States Environmental Protection Agency
 - ND = Not Detected

Based on the laboratory results of the LSSS, the site was divided into a total of eight Excavation Areas (EAs), which were identified as EAs A through H, as shown on Figure 2-2. In addition to the identified PAH concentrations, these EAs were further defined based on the historical and frequency uses of the areas, due to these factors affecting the types and levels of contamination likely to be

present. EAs A, C, D, and E consist of playground areas within the CDC property. EAs B and F are common areas within the CDC property; and EAs G and H are the respective back and front yards of the adjacent residence located at 3265 Captain's Row.

Additional soil sampling to obtain vertical delineation of PAH-affected soil was conducted within each EA following the LSSS. Soil samples were collected from 0.5-foot to 1.0-foot, 1.0-foot to 1.5-foot, 1.5-foot to 2.0-foot and 2.0-foot to 3.0-foot bgs within each EA. Laboratory results were used to establish pre-determined excavation depths, eliminating the need for confirmation sampling.

2.4 State and Local Authority Roles

The Navy is the lead federal agency at NAS JRB Fort Worth and is required to ensure that state and local officials be given timely opportunity to review and comment on the Navy's response actions. State and local authorities have not undertaken any removal actions at the former skeet range site; however, they provide oversight of studies and actions conducted by the Navy.

The TCEQ has been consulted regarding the Navy's findings and appropriate response action(s) based thereon. The TCEQ was notified of the discovery of the clay pigeon target fragments at the CDC and was provided validated laboratory data associated with the former skeet range by email. A site visit was conducted by TCEQ personnel and a subsequent Removal Action Workplan was prepared and submitted to the TCEQ for review. Following review, the TCEQ recommended that the Navy proceed with soil removal measures. The TCEQ has also been involved in developing sampling protocol for soil confirmation sampling at the CDC as well as the adjacent residence at 3265 Captain's Row.

The local community has been kept informed of the various activities conducted to plan and implement this TCRA. Informational letters and a community fact sheet were made available to the public. Additionally, two open house public meetings were conducted, which provided public access to manned poster board stations. Personnel at each station provided attendees with information on subjects ranging from project history, media sampling methods, sampling results, health effects, and base housing.

3.0 THREATS TO PUBLIC HEALTH OR WELFARE OR THE ENVIRONMENT, AND STATUTORY AND REGULATORY AUTHORITIES

3.1 Threats to Public Health or Welfare

Currently, the majority of the site area is residential consisting of the CDC building and the residence located at 3265 Captain's Row. The remainder of the site is developed for recreational activities (e.g., track and athletic fields). Therefore, the residence is the primary human population of concern, followed by the recreational user. Future land use is expected to remain the same at the site. Use of the site by Navy personnel, contractors, or visitor/recreational users is likely to be frequent and of long duration.

Incidental ingestion and direct contact with affected surface soil are complete pathways for residents, including young children, Navy personnel, contractors, trespassers, and visitor/recreational users. Inhalation of dust by Navy personnel and contractors is also a complete pathway. Surface soil results were initially compared to Texas PCL soil cleanup levels for unrestricted land uses, and six PAH constituents were detected above applicable screening values. As discussed above, residential PCLs are expected to be protective of human health at the site based on the site use and duration of exposure.

3.2 Threats to the Environment

The primary threat to public health is exposure to surface soil from the site. Due to the developed nature of the site and surrounding area, no ecological impact is anticipated.

3.3 Regulatory Authorities

The Navy is the lead agency under CERCLA, and the TCEQ provides regulatory review and guidance for the project.

4.0 ENDANGERMENT DETERMINATION

In accordance with the U.S. Environmental Protection Agency Action Memorandum Guidance (U.S. EPA 1990), the endangerment determination for the site is as follows: Actual or threatened releases of pollutants and contaminants from the former skeet range , if not addressed by implementing the response action selected in this Action Memorandum, may present a substantial endangerment to public health, welfare, or the environment if the site remains developed for residential and recreational land uses in the future. The Navy has determined that this threat can be abated, minimized, or eliminated by undertaking a TCRA.

5.0 PROPOSED ACTIONS AND ESTIMATED COSTS

Based on the results of the LSSS, the Navy proposes to implement a TCRA at both the CDC and the adjacent residence at 3265 Captain's Row. This section describes the implementation details associated with the proposed action, ARARs, schedule, and estimated costs.

5.1 Proposed Actions

This section describes the ongoing and proposed TCRA actions to mitigate the conditions cited in Section 3 of this document. This section also discusses ARARs and presents estimated costs for the TCRA.

An Interim Removal Action Work Plan for the former skeet range, dated 8 October 2014, was developed and is being used to implement the TCRA at the CDC property and the adjacent residence at 3265 Captain's Row. The TCRA consists of excavation, transportation, and offsite disposal of impacted soil. Following excavation, confirmation soil samples will be collected, where applicable, and backfill will be placed to bring the site back to grade. This work, which began on 14 October 2014, and is currently on going, is intended to remediate PAH concentrations in the EAs to below residential PCLs to ensure protectiveness of the residential property and the CDC personnel and children. On average, the site will be excavated to a depth of two feet; however, based on the results of the vertical sampling activities, some of the EAs will be deeper and some shallower. Figure 4-1, shows each excavation depth associated with each EA.

5.2 Applicable or Relevant and Appropriate Requirements

The Navy considered potential chemical-specific, location-specific, and action-specific ARARs and evaluated these ARARs for the removal action. The proposed removal action alternative complies with all ARARs.

Chemical-specific ARARs are health and/or risk-based numerical values or methodologies that establish the acceptable amount or concentration of a hazardous substance that may be found in or discharged to the environment. Soil data collected during the LSSS were compared to the following potential chemical-specific ARAR:

- **Texas PCL Soil Cleanup Levels for Unrestricted Land Uses** (Texas Administrative Code [TAC], Title 30, TRRP PCL Table 1).

Action-specific ARARs are guidelines on how a remedial alternative must be achieved and are generally technology-based, applying to specific remedial approaches rather than to a site. The following were compared to action-specific ARARs:

- **Control of Dust, Visible Emissions and Particulate Matter** — Air contaminants shall not be discharged in such concentrations or durations that may affect human health, welfare or the environment (30 TAC 101.4, and 30 TAC 111.111).

- **Characterization of Solid Wastes as Either Hazardous or Non-Hazardous** — Persons who generate a solid waste (excavation of affected soil for off-site disposal) must determine if that waste is subject to regulation as either a characteristic or listed hazardous waste or special waste because of varying storage, transportation and disposal requirements (40 Code of Federal Regulations [CFR] 262.11(a), (b), (c) and (d); 264.13(a) (1); 30 TAC 335.503 and 504.
- **Disposal of Non-Hazardous Municipal Solid Wastes** — Texas Municipal Solid Waste Regulations (30 TAC 330 (c)).

5.3 Project Schedule and Estimated Costs

TCRA activities, which began 15 October 2014, are currently being conducted at the former skeet range site. The estimated capital cost for this removal action is \$1,300,000. Capital costs are associated with conducting the TCRA and a Remedial Investigation to complete site delineation.

5.4 Expected Change in the Situation Should Action be Delayed or Not Taken Project Schedule and Estimated Costs

Based on available site data and standard risk screening protocols, PAH concentrations in the surface soil at the site present an unacceptable risk to human health under current land uses. Therefore, without restricting current land use (closing the CDC and prohibiting occupancy at 3265 Captain's Row), the sites would not be protective of human health.

6.0 OUTSTANDING POLICY ISSUES AND ENFORCEMENT

6.1 Outstanding Policy Issues

None

6.2 Enforcement

There are no enforcement actions associated with this site.

7.0 DECISION

This Action Memorandum documents the determination to undertake a TCRA to address a release of hazardous substances at the former skeet range at NAS JRB Fort Worth, in accordance with CERCLA as amended and the NCP to the extent practicable. This decision is based on the Administrative Record for the site. This TCRA is protective of human health, complies with federal and state ARARs, and is cost effective.

The Navy will conduct the TCRA to remove PAH-affected soil concentrations to below residential human health PCLs. Therefore, no additional long-term action is required to protect human health and the environment at the CDC and at the residence at 3265 Captain's Row.

Approvals:



Gil Miller, Captain U.S. Navy Commanding Officer
NAS Fort Worth JRB

22 OCT 2014

Date

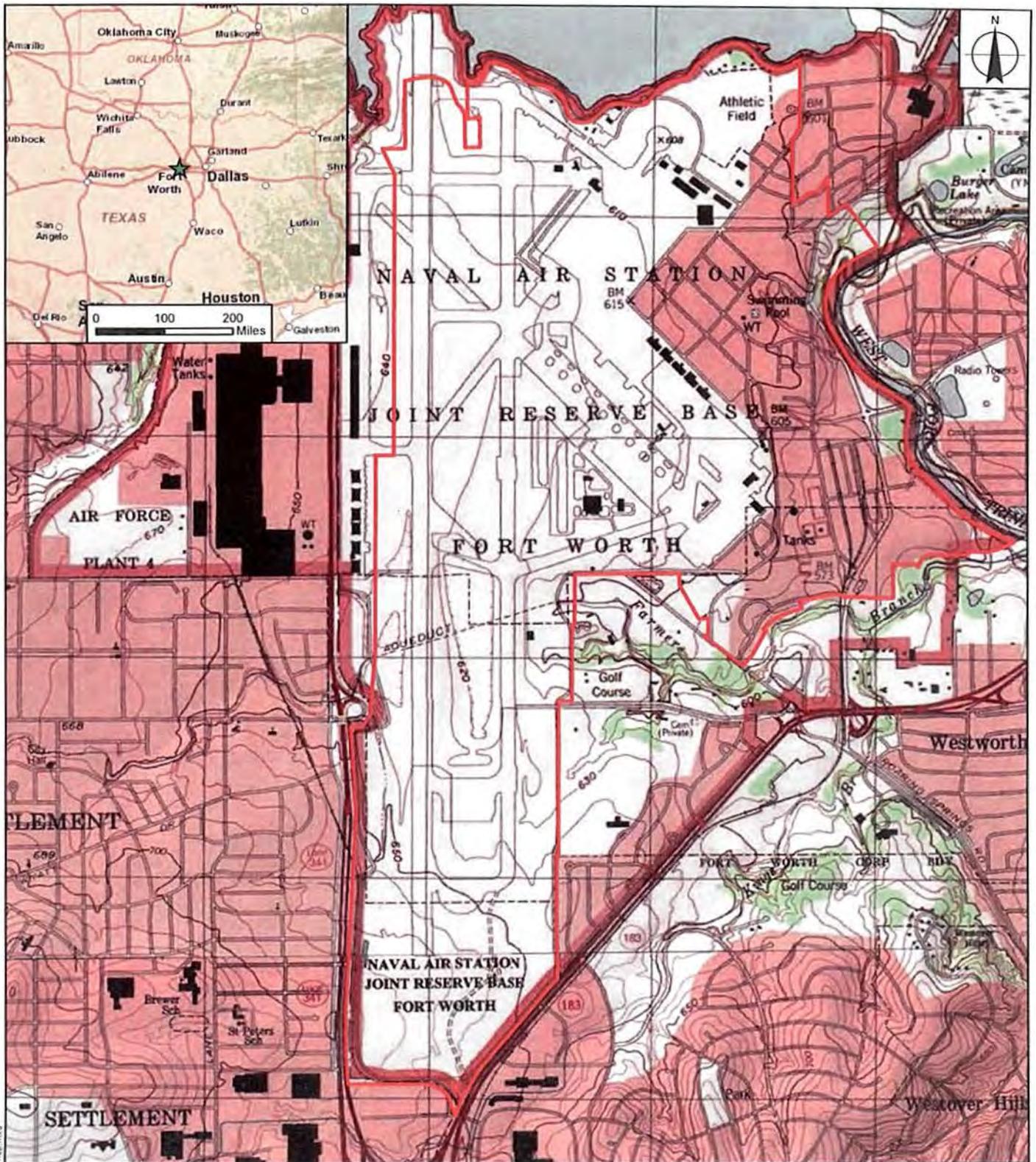
8.0 REFERENCES

Resolution Consultants, *Final Work Plan, Former Skeet Range Interim Removal Action, Naval Air Station Joint Reserve Base, Fort Worth, Texas*, 8 October 2014.

- *Site Removal Evaluation Report, Former Skeet Range, Naval Air Station Joint Reserve Base, Fort Worth, Texas*, October 2014.

United States Environmental Protection Agency, *Regional Screening Level Tables*, May 2014

**Attachment
Figures**



Legend

- ★ Installation Location
- Installation Boundary

0 2,000 4,000 Feet

Site boundary is from Tetra Tech

FIGURE 1-1
SITE LOCATION MAP
NAVAL AIR STATION
JOINT RESERVE BASE
FORT WORTH, TEXAS



REQUESTED BY: B. HAMBY
DRAWN BY: MSENNE

DATE: 10/29/2013
TASK ORDER NUMBER: JM24

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FIGURE 2-2
 EXCAVATION AREAS AND SOIL
 SAMPLING LOCATIONS
 NAVAL AIR STATION JOINT RESERVE BASE
 FORT WORTH, TEXAS

Legend

- Sample Locations
- ▭ Individual Excavation Areas



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|--------------------------|-------------------------|--|--|
| | | | |
| REQUESTED BY: B. JACKSON | DATE: 10/21/2014 | | |
| DRAWN BY: B. LIPSCOMB | TASK ORDER NUMBER: XXXX | | |

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