Final

ENVIRONMENTAL BASELINE SURVEY
DEFENSE FUEL SUPPORT POINT – GRAND FORKS
AND
DEFENSE FUELS PIPELINE
GRAND FORKS, NORTH DAKOTA

Prepared for

Environmental Management Flight
Grand Forks Air Force Base, North Dakota

September 2003
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EXECUTIVE SUMMARY

INTRODUCTION
An Environmental Baseline Survey (EBS) documents the environmental condition of real property resulting from the storage, release, and/or disposal of hazardous substances or petroleum substances and their derivatives over an installation’s history. This EBS has been prepared to document the environmental condition of the Defense Fuel Support Point (DFSP)-Grand Forks and the Defense Fuels Pipeline, Grand Forks, ND. It addresses only the aforementioned properties, and contains information necessary to establish a baseline for use by the Air Force in making decisions concerning these properties. The information was obtained through document review, visual site inspections, historical aerial photograph and topographic map review, and interviews conducted in April and May 2003. No soil, air, water, or building material samples were collected.

DFSP-Grand Forks encompasses 11.25 acres on the north side of 27th Avenue North at the intersection of North 42nd Street, Grand Forks County, North Dakota, at the northern edge of the urbanized area of the city of Grand Forks, about three miles northwest of the Central Business District. The terminal is a government-owned, contractor-operated facility used for the storage of bulk petroleum and as a terminal for supplying petroleum to Grand Forks Air Force Base (GAFB) and other Air Force and Air National Guard units.

The DFSP receives fuel via both tanker truck and from the Williams Pipeline Company. The Defense Fuels Pipeline begins at a Meter House on the Williams Pipeline Company Terminal, located less than a mile south of DFSP-Grand Forks. The pipeline runs from the Meter House to the DFSP (4,600 linear feet) and from the DFSP west to GAFB (74,700 linear feet). The pipeline is nearly entirely through rural farmland except when the line passes beneath Interstate 29 and the Grand Forks International Airport, and is completely underground except at the Williams’ Terminal, at DFSP, and at GAFB.

ENVIRONMENTAL FACTORS EVALUATED
Eighteen environmental factors are evaluated for an EBS. Of these, five are considered Property Categorization Factors, i.e., factors that are common sources of hazardous substance or petroleum product storage, disposal, or release. These factors are:

- Management of hazardous materials and petroleum products and their wastes
- Installation Restoration Program/release sites
- Aboveground and underground storage tanks and pipelines
- Oil/water separators
- Wastewater management.

Only Property Categorization Factors are used to determine if the property is suitable for transfer.

Ten factors, known as Facility Disclosure Factors (such as asbestos, lead-based paint, pesticides, etc.), are conditions involving hazardous substances that generally do not pose specific risk or a hazard to human health or safety if maintained and managed properly. The remaining three
factors are Conservation Disclosure Factors, which include cultural, biological, or natural resources. These last thirteen factors are evaluated, but are not used to determine the property transfer category.

**SUMMARY OF FINDINGS**
Facility records were reviewed to identify the quantities, types, and management of hazardous materials and petroleum products that have been used, stored, or released at DFSP-Grand Forks or at the Defense Fuels Pipeline. Research indicated no historical use of chlorinated solvents at the facility or in association with the pipeline. No significant quantities of hazardous wastes appear to have been generated at the site, and only small quantities of hazardous materials were identified in the Laboratory and Maintenance Building during the site inspection. All required permits have been obtained and the facility appears to be in compliance with applicable federal, state, and local regulations.

In June 1990, JP-4 was discovered in the lift station and in an area near the fuel sample building (see Figure 1-1). The source was identified as a leak from the 10-inch pipeline that led to the railcar loading rack. Soil and groundwater samples were collected and analyzed for benzene, toluene, ethylbenzene, and total xylenes; total gasoline-derived hydrocarbons; and total jet-fuel derived hydrocarbons. The highest concentrations of petroleum constituents in both soil and groundwater were located in the southwest portion of the facility. Additional investigation defined the extent of contamination and, since 1995, annual sampling has been conducted to monitor the contamination. In 2002, sampling and analysis of natural attenuation parameters was also performed and the analytical results were compared on a well-by-well basis to evaluate if natural attenuation is occurring at the site. Based upon this comparison, it is likely that aerobic and anaerobic biodegradation of the contaminants is occurring.

Pipeline leaks were reported in April 1982, October 1988, and April 1992. The locations are shown on Figure 1-2. At each release, cleanup actions included replacing the defective section of the pipe, use of absorbent materials, and removal of the contaminated soil. No continuing actions were initiated.

An evaluation of the environmental condition of adjacent properties was conducted to assess possible impacts on the DFSP and the pipeline. A visual inspection of contiguous adjacent properties and the surrounding area was conducted from publicly accessible streets and thoroughfares. Additionally, an environmental database search was conducted to identify sites that could have an environmental effect on DFSP-Grand Forks or on the Defense Fuels Pipeline. The results of the visual inspections and the database search indicated no apparent activity in the circumjacent area that would negatively impact either of the subject properties, with the exception of Cenex Corporation and the Williams Pipeline Company terminal.

**CONCLUSIONS**
Research determined no known hazardous substances (as defined in the Comprehensive Environmental Response, Compensation, and Liability Act (42 U.S.C. 9601), as amended) have been stored for more than one year, are known to have been released, or have been disposed of on the Air Force-controlled real property described in this report. Therefore, the real property is classified as follows:
Table ES-1. Property Categorization

<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Category 2</td>
<td>Areas where only release or disposal of petroleum substances has occurred.</td>
</tr>
</tbody>
</table>

Current and historic operations at DFSP-Grand Forks have been associated with petroleum fuel storage and distribution. Petroleum products were released to the environment and impacted the soil and groundwater. During the research, no data gaps were identified; however, it is recommended that annual sampling at DFSP should be continued to document the degradation of the contamination.
1. PURPOSE OF THE ENVIRONMENTAL BASELINE SURVEY

1.1 INTRODUCTION

1.1.1 Purpose

An Environmental Baseline Survey (EBS) documents the environmental condition of real property resulting from the storage, release, and disposal of hazardous substances, and/or petroleum substances and their derivatives over an installation's history. The EBS also establishes a baseline for use by the United States (U.S.) Air Force in making decisions concerning real property transactions. The preparation of an EBS is required by U.S. Department of Defense (DoD) policy before any property can be sold, leased, transferred, or acquired.

Although primarily a management tool, the EBS also assists the Air Force in meeting its obligations under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S. Code Section 9620(h), as amended by the Community Environmental Response Facilitation Act, Public Law 102-426. The EBS supports notice, when required under CERCLA, of the type, quantity, and time frame of any storage, release, or disposal of hazardous substances or petroleum products on the property.

This EBS has been prepared to document the environmental condition of the Defense Fuel Support Point (DFSP)-Grand Forks and the Defense Fuels Pipeline, Grand Forks, ND, as a result of the storage, use, and disposal of hazardous substances and/or petroleum products over the history of these properties. This EBS addresses only the aforementioned properties, and is a single document containing information necessary to establish a baseline for use by the Grand Forks Air Force Base (GFAFB) when conducting real estate or environmental planning activities concerning these properties.

1.1.2 Content of Environmental Baseline Survey Report

The information for this EBS was obtained through document review, visual site inspections, aerial photograph review, and interviews conducted during April and May 2003. The document review included a record search of available information regarding environmental setting, history, restoration/remediation, resources, compliance, and inspections. Visual site inspections were performed at DFSP-Grand Forks and the Defense Fuels Pipeline on April 28 and 29, 2003, respectively, and interviews were conducted with current employees and with persons familiar with the property. No soil, air, water, or building material samples were collected. The EBS survey methodology is more fully described in Section 2.0.

This EBS also includes a visual site assessment and a document review of the environmental condition of areas immediately adjacent to or relatively near the subject areas that could pose environmental concern and/or affect the subject properties. The document review included a record search of available information regarding adjacent properties and the visual site assessment included adjacent areas.

Based upon an analysis of the available data and existing documents, an EBS categorizes property into seven categories as delineated in U.S. Air Force Instruction (AFI) 32-7066, 25 April 1994, as revised per HQ USAF/ILEV Memo, 09 February 1999:
• Category 1 - Areas where no release or disposal of hazardous or petroleum substances has occurred (including no migration of these substances from adjacent areas).

• Category 2 - Areas where only release or disposal of petroleum substances has occurred.

• Category 3 - Areas where release, disposal, and/or migration of hazardous substances has occurred, but at concentrations that do not require removal or remedial response.

• Category 4 - Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions have been taken.

• Category 5 -Areas where release, disposal, and/or migration of hazardous substances has occurred, and all removal or remedial actions are underway, but not yet taken.

• Category 6 - Areas where release, disposal and/or migration of hazardous substances has occurred, but removal or remedial actions have not been implemented.

• Category 7 - Areas that are not evaluated or require additional evaluation.

Property in the first four categories would be suitable for transfer by deed. Property in the last three categories would be unsuitable for deed transfer until the necessary actions have been taken and the property has been reclassified into one of the first four categories.

Eighteen environmental factors are evaluated in this EBS. Of these, five are considered Property Categorization Factors, i.e., factors that are common sources of hazardous substance or petroleum product storage, disposal, or release. These factors have been used to categorize the subject properties according to the seven categories listed above, and include the following:

• Hazardous substances, including hazardous and petroleum waste management
• Installation Restoration Program (IRP)/release sites
• Aboveground/underground storage tanks (ASTs/USTs) and pipelines
• Oil/water separators (OWSs)
• Wastewater management and disposal

Ten of the environmental factors that are evaluated during a real property transfer or lease are considered Facility Disclosure Factors. Facility Disclosure Factors include substances or conditions that may affect the use of the property, but are not regulated under CERCLA. Facility Disclosure Factors also includes hazardous substances that do not pose specific risk or hazard to human health or safety if maintained and managed properly. These factors are not used for property categorization unless a release has occurred. They include the following:

• Pesticides/Herbicides/Rodenticides
• Medical and biohazardous waste
• Ordnance
• Radiological material and mixed waste
Environmental Baseline Survey

- Solid waste
- Drinking water quality
- Asbestos-containing materials (ACM)
- Polychlorinated biphenyls (PCBs)
- Radon
- Lead-based paint (LBP)

The three remaining environmental factors that are considered are Conservation Disclosure Factors, and include:

- Cultural resources
- Biological resources
- Natural resources

As with Facility Disclosure Factors, Conservation Disclosure Factors are considered, but are not used for property categorization.

1.1.3 Data Gaps and Updates
This EBS compiles available information on the environmental condition of DFSP-Grand Forks and the Defense Fuels Pipeline into a single document. The EBS will also identify any data gaps in the available information. If possible, the government will take action to fill the data gaps immediately so this EBS will be as complete and accurate as possible. When it is not possible to take immediate action, the government will include the actions required to identify and characterize environmental contamination in one of the existing, ongoing programs. This may provide the appropriate vehicle for filling data gaps. In all cases, actions to fill data gaps will be accelerated, whenever possible, to support the transfer actions.

1.2 Boundaries of the Property and Scope of Survey Area
DFSP-Grand Forks encompasses 11.25 acres on the north side of 27th Avenue North at the intersection of North 42nd Street, Grand Forks County, North Dakota. The facility is at the northern edge of the urbanized area of the city of Grand Forks, about three miles northwest of the Central Business District. The geographical coordinates are: Latitude 47° 56’ 09” north and Longitude 97° 06’ 06” west. The brief legal description of the site is:

… in Falconer Township, the southwest ¼ of the southwest ¼ of the southwest ¼ of Section 29, Township 152 North, Range 50 West of the Fifth Principal Meridian.

DFSP-Grand Forks is a government-owned, contractor-operated facility used for the storage of bulk petroleum and as a terminal for supplying petroleum to GFAFB and other Air Force and Air National Guard units. There are no petroleum production facilities onsite. The facility contains four aboveground petroleum storage tanks with a total capacity of 270,000 barrels (bbl) or 11,340,000 gallons, three accessory tanks, several small ASTs and USTs, three bottom-loading truck racks, a 20-rail car loading rack (blind flanged and in a caretaker status), and numerous buildings containing support services such as administration/laboratory, maintenance, storage, pumping station/transfer manifold, etc. A 7-foot security fence topped with three strands of...
barbed wire surrounds the depot. Access is available only through a security gate off 27th Avenue North. A site map is shown as Figure 1-1; photographs of pertinent features are in Appendix B.

The DFSP receives fuel via both tanker truck and from the Williams Pipeline Company. The Defense Fuels Pipeline begins at a Meter House on the Williams Pipeline Company Terminal, located less than a mile south of DFSP-Grand Forks at the intersection of Gateway Drive (State Route 2) and North 42nd Street. An 8-inch pipeline runs from the Meter House to the DFSP [4,600 linear feet (lf)] and a 9-inch pipeline runs from the DFSP west to GFAFB (74,700 lf) except at Kellys Slough where there is a 10-inch line. The pipeline route is nearly entirely through rural farmland except when the line passes beneath Interstate 29 and the Grand Forks International Airport and is completely underground except at the Williams’ Terminal, at DFSP, and at GFAFB. Both the terminal and the entire pipeline route are within the county of Grand Forks. The complete Defense Fuels Pipeline route is shown on Figure 1-2; the legal description for the pipeline is in Appendix C. Also included in Appendix C is a brief discussion of the installation of a rectifier at the intersection of 18th Street North and 19th Avenue North, including the history of title for the easement property. The terminal and the pipeline are under the administrative control of the Defense Energy Support Center, Fort Belvoir, Virginia; overall facility management is by the Defense Logistics Agency, Cameron Station, Alexandria, Virginia.

The scope of this EBS includes all real property associated with DFSP-Grand Forks and the Defense Fuels Pipeline and is based upon a review of 1) information known about the subject properties, and 2) an assessment of known site conditions at properties within about one-half mile of the boundaries of the subject properties. These properties were assessed to identify areas of known or potential environmental concern. The results of the survey for DFSP-Grand Forks and the Defense Fuels Pipeline are discussed in Chapter 3; the results of the survey for adjacent properties are discussed in Chapter 4.
Figure 1-1. Site Plan.
DFSP - Grand Forks.
Grand Forks, ND.
Figure 1-2. Site Plan.
Defense Fuels Pipeline Route.
Grand Forks, ND
2. **SURVEY METHODOLOGY**

The methods used to conduct the EBS for DFSP-Grand Forks and the Defense Fuels Pipeline are described in this chapter.

2.1 **APPROACH AND RATIONALE**

This EBS followed a methodical process in which the available information was analyzed and conclusions were drawn about the environmental condition of the property. As part of the record search, previous reports, site drawings, and historical topographic maps and aerial photographs were reviewed to assist in identifying past land uses and potential environmental contamination sources. Because no manufacturing was conducted at DFSP-Grand Forks and, reportedly, no significant quantities of solvents or degreasers were stored at the facility, the EBS investigation focused upon the storage and transfer of petroleum products.

Field investigations and environmental database reports were reviewed to identify areas where the presence (or absence) of contamination has been confirmed, either at the facility or on adjacent sites. Then, physical inspections of the properties and facilities were conducted to identify any evidence of spills, distressed vegetation, or other conditions that might indicate contamination. Additionally, installation and contractor personnel were interviewed to obtain both historical and current information. Finally, records from environmental files at the facility were reviewed, as well as any previous environmental audits or surveys, to identify any other areas of concern. Types of surveys reviewed typically included asbestos, LBP, and/or transformers, if available.

Thus the major components that support this analysis are document review, a visual site inspection of DFSP-Grand Forks and the Defense Fuels Pipeline, a visual site assessment of adjacent properties, and interviews with persons who could provide information about the site. These components are described on the following pages.

2.1.1 **Description of Documents Reviewed**

The record search of available documentation focused primarily on reports, database results, aerial photographs, and maps. Various studies, investigations, and inspections that consider environmental conditions at the installation, including regulatory compliance issues, have been conducted by the Air Force and other federal and state agencies during the past several years. The results of these studies and investigations provided much of the information used in developing this EBS. The primary studies, documents, or investigations include those items listed below. A complete reference list is in Appendix D.

- Environmental Data Resources (EDR) – Area/Corridor Study DFSP-GFAFB Pipeline, March 31, 2003
- EDR – Radius Report, DFSP Tank Farm, March 30, 2003
- Site Inspection Report, March 1988
- Environmental Compliance Assessment Report, February 11, 2002
- Site Investigation Defense fuel Support Point Site, June 1996
- DFSP Annual Monitoring and Natural Attenuation Evaluation Report, May 2003
- DFSP Oil and Hazardous Substance Integrated Contingency Plan, June 2002
• DFSP Environmental Quality Survey Report, August 1995
• DFSP Cathodic Protection System Investigations, July 1995
• Engineering Services for the Pipelines at DFSP Grand Forks, ND, April 1998
• Soil Survey of Grand Forks County, North Dakota
• Historic aerial photographs and maps
• Available real property documents.

The documents and records referenced above were reviewed and applied to each of the following environmental media:

**Hazardous Materials/Petroleum Products Management.** Management practices for hazardous materials/petroleum products were determined through a review of reports and from interviews with facility personnel. No significant use of hazardous materials was identified during the review.

**Hazardous Waste/Petroleum Waste Management.** No indication of contamination as a result of hazardous or petroleum waste generation, management, or disposal was discovered. Information was obtained from environmental reports and interviews with facility personnel.

**Release Sites.** Previous reports and contractor files were reviewed to obtain information on sites where confirmed releases have taken place and/or where remediation efforts were undertaken.

**Storage Tanks and Pipelines.** An inventory of existing and historic ASTs, USTs, and associated piping systems was compiled from various storage tank listings and interviews conducted with facility personnel. Information was also obtained from visual inspections conducted as part of this EBS.

**Oil-Water Separators.** The history of the OWSs and associated piping systems was compiled and interviews were conducted with facility personnel. Additional information was obtained from visual inspections conducted as part of this EBS.

**Wastewater Discharges.** Previous reports and personnel interviews were conducted to determine current and historical wastewater treatment and disposal practices.

**Pesticides.** Information on pesticide storage and use was obtained from environmental files and an interview with facility personnel.

**Medical/Biohazardous Waste.** Information on the generation and disposal of medical/biohazardous waste was obtained from an interview with facility personnel.

**Ordnance.** Information on the use of ordnance at the facility was obtained from an interview with facility personnel.

**Radiological Materials and Mixed Waste.** Information on radiological materials was obtained from an interview with facility personnel.
Solid Waste. Information on solid waste disposal compliance was obtained from previous reports and from interviews with facility personnel.

Drinking Water Quality. Information on drinking water quality was obtained from environmental files and an interview with facility personnel.

Asbestos-Containing Materials. ACM information was obtained from the site inspection and interviews with facility personnel.

Polychlorinated Biphenyls. Information on PCB-containing equipment was obtained from an interview with facility personnel and from NODAK Electrical Cooperative.

Radon. Information on potential radon concentrations was obtained from reports and from an interview with facility personnel.

Lead-Based Paint. Information on the potential use of lead-based paint was obtained from an interview with facility personnel.

Other Environmental Resources/Factors. This category includes any environmental resource or factor not addressed in any of the previous environmental media, such as septic tanks, contaminated sewer systems, etc. Applicable information on these factors was obtained through interviews with facility personnel.

2.1.2 Property Inspections
As part of the EBS effort, visual site inspections were conducted at DFSP-Grand Forks and along the Defense Fuels Pipeline route on April 28 and 29, 2003, respectively. The objective of a visual site inspection is to note potential contamination sources, including leaks or spills, and any other evidence of release, such as stressed vegetation or stained soils. Special emphasis is placed on areas identified as potential sources of contamination through the document review. No environmental samples were collected. The inspection also involved a drive-by examination of all properties circumjacent to DFSP-Grand Forks and the pipeline, and a review of all facilities within about a half-mile of the subject properties that were identified in an electronic database search.

2.1.3 Personnel Interviews
Interviews were conducted with Air Force personnel, contractor personnel currently operating DFSP-Grand Forks and the Defense Fuels Pipeline, regulators, and other persons familiar with the area. Table 2-1 identifies persons contacted for information or interviewed, their job title, and their area of expertise. These interviews were conducted to identify potential environmental concerns related to recent and/or historic operations or to verify information found in the records search.

2.1.4 Sampling
No sampling activities were conducted as part of this Phase I EBS. NODAK Electric Cooperative voluntarily tested transformers at the DFSP to determine if the transformer oil contained PCBs.
### Table 2-1. Persons Contacted or Interviewed

<table>
<thead>
<tr>
<th>Name</th>
<th>Job Title</th>
<th>Area of Expertise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Bjorg</td>
<td>Soil Conservation Technician, USDA, Natural Resources Conservation Service</td>
<td>Historical land use, Natural resources</td>
</tr>
<tr>
<td>Stephen Braun</td>
<td>UST Manager, Environmental Management Flight, Grand Forks Air Force Base</td>
<td>USTs/Pipeline</td>
</tr>
<tr>
<td>Conrad Carlson</td>
<td>North Dakota Department of Health, Division of Waste Management</td>
<td>Hazardous waste compliance</td>
</tr>
<tr>
<td>Staff Sgt. Ken Coffman</td>
<td>Entomology Department, Grand Forks Air Force Base</td>
<td>Pesticides, Herbicides</td>
</tr>
<tr>
<td>Heidi Durako</td>
<td>Natural/Cultural Resources and EIAP Manager, Environmental Management Flight, Grand Forks Air Force Base</td>
<td>EBS Point-of-Contact, Natural/Cultural resources</td>
</tr>
<tr>
<td>Kathy Duttenhefner</td>
<td>North Dakota Parks and Recreation, Natural Heritage Program</td>
<td>Natural resources, Endangered species</td>
</tr>
<tr>
<td>Steve Dyke</td>
<td>North Dakota Game &amp; Fish</td>
<td>Natural resources</td>
</tr>
<tr>
<td>L. David Glatt</td>
<td>Chief, Environmental Health Section, North Dakota Department of Health</td>
<td>Compliance status</td>
</tr>
<tr>
<td>Winston Johnson</td>
<td>Liquid Fuels Department/Spill Team, Grand Forks Air Force Base</td>
<td>Spills</td>
</tr>
<tr>
<td>Duane Klinner</td>
<td>North Dakota Historic Preservation Office</td>
<td>Cultural resources</td>
</tr>
<tr>
<td>Wayne Koop</td>
<td>Chief, Environmental Management, Grand Forks Air Force Base</td>
<td>Compliance status, Operations, History</td>
</tr>
<tr>
<td>Dave Kovar</td>
<td>DFSP Terminal Manager, Doss Aviation</td>
<td>Operations, History</td>
</tr>
<tr>
<td>Larry LePier</td>
<td>LePier Oil Company, Inc.</td>
<td>Waste disposal</td>
</tr>
<tr>
<td>Tim Ness</td>
<td>DFSP Security Guard, Doss Aviation</td>
<td>Operations, History</td>
</tr>
<tr>
<td>Tom Riffe</td>
<td>Environmental Coordinator, Defense Fuel Support Center, Fort Belvoir, Virginia</td>
<td>General information, Operations, Point-of-Contact</td>
</tr>
<tr>
<td>Wayne “Rocky” Rocksvold</td>
<td>NODAK Electric Cooperative</td>
<td>PCB content of transformers</td>
</tr>
<tr>
<td>Alison Schlag</td>
<td>Air Programs Manager, Grand Forks Air Force Base, ND</td>
<td>General information, Compliance</td>
</tr>
<tr>
<td>Jim Semerad</td>
<td>North Dakota Department of Health, Division of Air Quality</td>
<td>Air quality compliance</td>
</tr>
<tr>
<td>Judy Stensland</td>
<td>Real Property Officer, Grand Forks Air Force Base</td>
<td>Real estate, Titles, &amp; Deeds</td>
</tr>
<tr>
<td>Terry Stromsodt</td>
<td>Chairman, Board of Supervisors, Rye Township</td>
<td>Installation of electric line under Rye Township road</td>
</tr>
<tr>
<td>Kurt Tompkins</td>
<td>Assistant Refuge Manager, U.S. Fish &amp; Wildlife Service</td>
<td>Kellys Slough</td>
</tr>
</tbody>
</table>
3. FINDINGS FOR DFSP-GRAND FORKS AND THE DEFENSE FUELS PIPELINE

This section of the EBS presents the findings from the records search and the results of the visual site investigations. Section 3.1 relates the history and current use of DFSP-Grand Forks and the Defense Fuels Pipeline; Section 3.2 describes the environmental setting. Sections 3.3 and 3.4 summarize the research results for each of the environmental factors considered in the EBS.

3.1 HISTORY AND CURRENT USE
DFSP-Grand Forks and the Defense Fuels Pipeline were constructed in 1958-59. The mission of the DFSP was to receive, store, and distribute government-owned fuel to GFAFB and other DoD facilities, such as Minot AFB, North Dakota, and Air National Guard units in North Dakota and Minnesota. In 1979, the Air Force purchased both the DFSP and the pipeline from the Western Terminal Company. Since that time, facility management has been contracted to private companies, including Petroleum Terminal Management, Continental Services, P.O.S.S.I., Impact Technology, and Sierra. The current contractor is Doss Aviation, who has managed the DFSP and the pipeline since 1997. The Terminal Manager, Mr. David Kovar, has been employed at the facility since 1983 and has been Terminal Manager for three years. The Security Guard, Mr. Tim Ness, has worked at the DFSP since 1979.

Several major renovations have taken place at the terminal. In 1991, geodesic domes were constructed on the tanks and, in 1995-96, the tanks were moved to new foundations. Also, in the early 1990s, the terminal facility was concreted; prior to that time the grounds were gravel-covered.

Originally, the DFSP provided jet petroleum (JP)-4, jet fuel. In 1997, the facility switched to providing only JP-8. No aviation gas or leaded fuels were handled and no petroleum production has taken place at the facility.

Numerous historical photographs and topographic maps were reviewed for information on the environmental condition of the DFSP and the pipeline. Aerial photographs from 1954 through 1991 were reviewed in the office of the U.S. Department of Agriculture, Natural Resources Conservation Service in Grand Forks, ND. Copies of photographs showing the DFSP in 1954, 1969, 1980, and 1991 are included in Appendix E, as are photographs of the Defense Fuels Pipeline route from 1954 and 1980. U.S. Geological Survey (USGS) photographs from 1981 and 1997, obtained from EDR, are also in Appendix E. Aerial photographs from the North Dakota Global Information System (GIS) Repository were also downloaded and reviewed. None of the historical aerial photographs provided any indication of environmental contamination in the vicinity of the DFSP or the pipeline.

Historical topographic maps obtained from EDR were reviewed for land use. Copies of maps from 1936/1938 and 1963 are included in Appendix F. These provide additional information on the historical development of the area; however, none of the historical topographic maps reviewed indicate environmental contamination in the vicinity of the DFSP or the pipeline.

Personnel familiar with the area remember the DFSP site as being “marshy” prior to construction of the terminal. The land was previously undeveloped, however, and there is no record of its use as a disposal facility.
3.2 **ENVIRONMENTAL SETTING**

DFSP-Grand Forks is located at the northern boundary of the city of Grand Forks in a lightly populated, mixed commercial/industrial/residential area. Much of the land surrounding the terminal is undeveloped farmland.

The Defense Fuels Pipeline route is almost entirely through rural, undeveloped farmland—the only exceptions being when the pipeline travels beneath Interstate 29 and beneath the Grand Forks International Airport. Both the terminal and the entire pipeline route are within Grand Forks County.

3.2.1 **Climate**

Grand Forks has a subhumid, continental climate characterized by a broad fluctuation of temperatures during the year and moderate precipitation. Temperatures are very cold in winter, when arctic air frequently surges over the area. The average daily temperature in January is 2.5°F; the average daily temperature in July is 68.7°F, with temperatures ranging from a low of -43°F to a high of 109°F. The average annual precipitation is 18.42 inches, with the heaviest precipitation falling during spring and early summer. Average winter snowfall is 35.6 inches, generally blown into drifts so that much of the ground is free of snow. Prevailing winds are from the north; average wind speed in the spring is 13 miles per hour.

3.2.2 **Soils**

The DFSP and much of the pipeline are located in soil classified by the U.S. Department of Agriculture as Bearden silty clay loam, with small areas of Ojata silty clay loam. Bearden soils are characterized as somewhat poorly drained, moderately saline soils on glacial lake plains. The natural drainage pattern is poorly defined and constructed drains generally remove excess surface water. Both the surface soil and the upper portion of the substratum contain salt crystals. Bearden soils have moderately slow permeability. Runoff is slow and the seasonal high water table is at 1.5 to 2.5 feet below ground surface (bgs). Wetness is the primary limitation for site development. The small areas of Ojata silty clay loam are found in low-lying sloughs and swales. This soil is strongly saline. Runoff is very slow and the seasonal high water table is at or near the ground surface.

The pipeline runs through two extremely low-lying areas of Lallie silty clay loam, characterized by poorly drained saline soils found in sloughs and intermittent lake basins on glacial lake plains. These areas are ponded for very long periods. Most areas of this soil type are used for wetland wildlife habitat. Because of the ponding, a lack of suitable drainage outlets, and the moderate salinity, the soil is unsuitable for most developmental purposes. These low-lying areas are bordered by small strips of numerous other soil types commonly found along drainageways and on the crest and shoulders of slopes. All of the soils have moderate to high salinity, moderate to high shrink-swell potential, and a high water table. The risk of corrosion to uncoated steel for all soil groups is high.

3.2.3 **Geology**

Grand Forks lies in the Great Plains region, characterized by flat-lying topography as a result, in part, of the four major periods of glaciation that occurred in North America. The glacial advances and retreats produced glacial deposits overlying Paleozoic and Mesozoic Age bedrock. The thickness of the glacial deposits increase from west to east across Grand Forks County, with
an average thickness of approximately 200 feet. They are primarily composed of clay till and have low permeability; however, local sand and gravel units yield varying amounts of water. Overlying the glacial drift deposits are fine-grained (clay to silt) lacustrine deposits ranging from 150 to 200 feet. At the DFSP, the lacustrine deposits are overlain by approximately 1 to 2 feet of topsoil or fill material.

3.2.4 Hydrogeology/Groundwater
The water supply in Grand Forks County is from both surface and groundwater sources. The Red Lake River of Minnesota and the Red River of the North are the principal sources of municipal and industrial water for the city of Grand Forks and GFAFB. Other areas obtain water from groundwater sources. Numerous major and minor aquifers have been identified in the regional glacial deposits. The Dakota Aquifer is the most extensive source of groundwater in the county. The water is very saline and is unsuitable for consumption even by livestock. The Grand Forks Aquifer, identified in the vicinity of the facility, consists of fine- to medium-grained sand and poorly sorted gravel with an average thickness of less than 20 feet. Recharge is slow and the chemical quality of the water is poor. Because of the high minerals content, the water is generally unsuitable for most uses.

Water level measurements, obtained several times at the DFSP, indicate depth to water has typically ranged between 1.5 and 6 feet. The predominant direction of groundwater flow is to the north and northeast in both the shallow and in the deeper portion of the aquifer. It is possible, however, that shallow groundwater flow is being affected by the drainage system and by underground utilities creating variations in the groundwater flow direction.

3.2.5 Wetlands
The 1992 National Wetlands Inventory map, based on June 1979 and April 1981 aerial photography, indicates no wetlands areas immediately adjacent to the DFSP. The Defense Fuels Pipeline, however, runs through several wetlands. Numerous small areas described as Palustrine, emergent, seasonally or temporarily flooded (some excavated) lie between DFSP and GFAFB. Further west are the Salt Water and Fresh Water Coulees and Kellys Slough, all significant wetlands areas. The Salt Water and Fresh Water Coulees are intermittent streams that provide natural drainage for the area. The two Coulees meet just north of the pipeline and continue northeast to the Turtle River, a tributary of the Red River. Although the Coulees are shallow and are often dry in mid-summer, they still support wetlands vegetation. Kellys Slough is a National Wildlife Refuge under the protection and administration of the U.S. Fish and Wildlife Service.

3.2.6 Topography and Surface Water
Based on an interpretation of the USGS 7.5 minute topographic maps for the DFSP and the Defense Fuels Pipeline, shown as Figures 3-1 and 3-2, land surface in the vicinity of the DFSP and the Defense Fuels Pipeline is generally flat, sloping gently down (northeast) from a surface elevation of about 880 feet above mean sea level (msl) at GFAFB to an elevation of about 830 feet msl at the DFSP—an average slope of 3.5 feet per mile.

The nearest surface water body to the DFSP is the English Coulee, located less than a mile east of the terminal. The Coulee and its tributaries flow northeast to the Red River, about ½ miles northeast. The only other surface waters in the vicinity of the subject properties are the Salt and Fresh Water Coulees and Kellys Slough. Excess surface water in the Grand Forks area is
controlled by numerous drainage ditches that discharge into coulees. Small ditches run east-west along both sides of 27th Avenue North; a larger ditch, west of the DFSP, runs north-south. Both of these ditches eventually discharge into the English Coulee.

Storm water from the terminal facility generally flows via gravity to an underground storm drainage system that discharges into the drainage ditch on 27th Avenue North. Gutters on the truck loading rack canopy also discharge directly into the underground drainage system. All other storm waters that come into contact with fuel storage or transfer equipment go to the OWS prior to discharge.

3.2.7 Floodplain
The DFSP is located within the 100-year flood zone established by the Federal Emergency Management Agency. The dikes and drainage ditches around the facility, however, reduce the potential for flooding. Portions of the pipeline are also within floodplain areas or are in areas subject to intermittent flooding, but are unlikely to be affected by flooding.

3.2.8 Seismic Activity
Based on the national seismic risk map, the subject properties are located in a very low seismic risk hazard area (Zone 0).

3.2.9 Utilities
All utilities at DSFP-Grand Forks and along the Defense Fuels Pipeline are provided by public service providers. These providers are:

- Electricity – NODAK Electric Cooperative
- Natural Gas – Northern States Power
- Drinking Water – City of Grand Forks
- Solid Waste – City of Grand Forks

Sanitary waste is handled through a septic system at the terminal; there are no drinking water wells on the property or in the immediate vicinity of the property.

3.3 Property Categorization Factors
The following sections discuss the five property categorization factors that are evaluated in this EBS. These factors are common sources of hazardous substance or petroleum product storage, disposal, or release that could have a significant effect on the environmental condition of the project area.

3.3.1 Hazardous Substances
3.3.1.1 Hazardous Materials/Petroleum Products Management
Reports and facility records were reviewed to identify the quantities and types of hazardous materials and petroleum products that have been used, stored, or released at DFSP-Grand Forks since its initial construction in 1958. No records were located describing hazardous materials
Figure 3-1.
Topographic Map.
DFSP - Grand Forks.
Grand Forks, ND

U.S. Geological Survey
Grand Forks, ND-MN/7.5
1963, Revised 1994
Figure 3-2. Topographic Map. Defense Fuels Pipeline. Grand Forks, ND.
use prior to the mid 1980s. Interviews with personnel familiar with the site, however, indicated that chlorinated solvents have generally not been used at the terminal. No one could recall the presence of significant quantities of cleaning solvents, paint, and/or paint thinner.

DFSP operates a small quality control laboratory, located in the Administration Building, to periodically test fuel samples prior to distribution to ensure compliance with government specifications. Minimal quantities of chemicals, such as acetone, toluene, and isopropyl alcohol, are used either as part of the analysis or for instrument cleaning. The fuel samples are drained directly into the 550-gallon laboratory UST (see Section 3.3.3) and later recycled.

The June 2002 Chemical Survey & Inventory indicated only small quantities of hazardous chemicals are regularly kept at the DFSP. Inspections of the laboratory and the flammable storage cabinets in the Fuel Sample Building and the Maintenance Building revealed only small quantities of chemicals stored. Additionally, all chemicals were stored safely, with little chance of release to the environment.

There are no hazardous materials associated with the Defense Fuels Pipeline.

3.3.1.2 Hazardous Waste/Petroleum Waste Management

DFSP-Grand Forks currently holds U.S. Environmental Protection Agency (USEPA) ID number ND0971528807 and is registered as a large-quantity generator of hazardous wastes. No early records of hazardous waste generation or disposal are available; however, an inspection conducted by the North Dakota Department of Health, Division of Hazardous Waste Management and Special Studies, on July 23, 1986, indicated no violations or problems at the facility.

Used oils are collected in a 55-gallon drum and transported to the Grand Forks reclamation station east of the city. Off-specification fuels from the testing laboratories are collected in two 550-gallon USTs and disposed of through LePier Oil Company. Because these fuels are blended by LePier Oil and recycled for energy recovery, they are not hazardous wastes. Tank bottom water is drained once per week and allowed to settle in a 100-gallon vertical tank. After settling, the fuel is reclaimed and the wastewater is stored in a 1,000-gallon poly tank, currently kept in Cell 4, until disposal. Prior to 1990, tank bottom water was drained onto the ground in the tank cells and allowed to evaporate. The practice was stopped in 1990 and, in 1995-96, the floors of the tanks cells were dug out and replaced with a polyethylene liner covered with sand/gravel.

A review of the DFSP Hazardous Waste Generator Report for 2001 indicated the terminal disposed of used, oily rags/absorbent and tank bottom water during that year. Both wastes were hazardous for benzene (D018) based upon contamination with JP-8. Hazardous wastes, such as rags and absorbent, are collected in a 55-gallon drum in the hazardous waste collection area and disposed of through LePier Oil Company. A review of manifests filed at the terminal indicated similar wastes were disposed in 2002. No wastes are disposed of on site.

There are no hazardous or petroleum wastes associated with the Defense Fuels Pipeline unless there is a release.
3.3.2 Installation Restoration Program/Release Sites Identified to Date
There currently are no IRP designations associated with the DFSP or the Defense Fuels Pipeline. According to DFSP personnel, the only reported fuel spill at the DFSP took place during the winter of 1984-85 from the base of Tank 1. About 100 gallons were released, but were contained in the secondary containment cell and cleaned up. Since that time, the tank has been relocated and the soil in the containment cell was removed and disposed.

In March 1988, a Site Inspection Report for the DFSP was completed by the USEPA. No hazardous conditions or incidents were reported and no findings of contamination were identified other than the practice of discharging tank bottom water into the dike areas and permitting it to evaporate, seep into the ground, and/or discharge into dike drainage. As discussed above, this practice was discontinued in 1990.

In June 1990, JP-4 fuel was discovered in the lift station. Additional fuel was identified in an area near the fuel sample building. The source was identified as a leak from the 10-inch pipeline that led to the rail car loading rack. Approximately 70 cubic yards of impacted soil were removed. In October 1990, an environmental assessment was initiated at DFSP that consisted of collecting 143 soil samples from 32 soil borings and installing 13 groundwater monitoring wells. The highest concentrations of organic vapors in soils occurred in the southwest portion of the facility near the tank car-dispensing terminal; the lowest concentrations generally occurred in the northeast portion of the facility. Groundwater samples collected in October and November 1990 from the 13 monitoring wells were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX); total gasoline-derived hydrocarbons, and total jet-fuel derived hydrocarbons. Phase-separated petroleum hydrocarbons were noted in three wells; all wells but one had detectable amounts of contaminants. As with the soil, the highest concentrations of petroleum constituents in groundwater were located in the southwest portion of the facility.

In 1995, additional investigation was conducted at DFSP. Concentrations of total petroleum hydrocarbons (TPH) and BTEX exceeding regulatory criteria were identified in soils at the southwest corner of the site, adjacent to the pipeline, within the upper 10 to 12 feet. Similarly, BTEX and TPH concentrations that exceeded state and federal Drinking Water Standards were identified in the groundwater at the southwest corner of the site. Additional areas identified included inside Dike 1 (corresponding to the 1984-85 release described above) and inside Dike 4. It was concluded that the areas of greatest contamination are at the southwest portion of the site and have been most likely impacted by former releases from the fuel pipeline, former rail car activities, or subsequent leaks since that time. The results of the risk assessment conducted at that time demonstrated that there was no potential threat to human health or the environment associated with measured levels of soil and groundwater contamination at the site. It was determined that no further action was required and to begin biannual sampling for one year. This was later modified to annual sampling and water level measurements.

Thus, since 1995, sampling has been conducted to track the concentrations of dissolved petroleum hydrocarbon compounds and to determine if natural degradation is occurring. The results of the 2002 sampling event are shown in Figure 3-3. Both benzene and TPH as gasoline were detected at concentrations exceeding the current North Dakota ground-water standards at MW-03, MW-04, MW-23, and MW-25, all located near the southwest corner of the facility. TPH as diesel was also found at elevated concentrations, both in the southwest corner of the site.
and at other locations, as shown on Figure 3-3. Generally, the results were consistent with sampling results from previous years.

In 2002, sampling and analysis of natural attenuation parameters was also performed and the analytical results from seven sampling events (1995 through 2002) were compared on a well-by-well basis to evaluate if natural attenuation is occurring at the site. Based upon this comparison, both the primary lines of evidence (decreases in contaminant concentration with time and migration) and the secondary lines of evidence (the natural attenuation parameters) indicate that it is likely that aerobic and anaerobic biodegradation of the contaminants is occurring.

Pipeline leaks were reported in April 1982, October 1988, and April 1992. The locations are shown on Figure 1-2. In the 1982 and 1992 incidences, about 100 gallons of JP-4 were estimated to have been released; in 1988, the estimate was about 200 gallons of JP-4. At each release, cleanup actions included replacing the defective section of the pipe, the use of absorbent materials, and removal of the contaminated soil. No information from soil or groundwater sampling was identified.

### 3.3.3 Storage Tanks

#### 3.3.3.1 Aboveground Storage Tanks

DFSP-Grand Forks has four aboveground, welded steel, floating roof, petroleum storage tanks. Additional ASTs contain support materials, such as fuel system icing inhibitor (FSII), foam, or backup fuel for the generator. The facility originally handled JP-4 and fuel for propeller planes; however, the fuel for propeller planes was phased out and, in 1991, JP-4 was also phased out. The terminal currently handles only JP-8. The tanks and their size, location, construction material, date of installation, and historical contents are listed in Table 3-1. All current tank locations are also shown on Figure 1-1.

<table>
<thead>
<tr>
<th>Tank No.</th>
<th>Maximum Capacity (gallons)</th>
<th>Location</th>
<th>Construction Material</th>
<th>Year Installed</th>
<th>Product Stored</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2,310,000 (90 feet in diameter)</td>
<td>Outside</td>
<td>Welded steel with pontoon floating roof</td>
<td>1959</td>
<td>JP-8</td>
</tr>
<tr>
<td>2</td>
<td>3,360,000 (110 feet/diameter)</td>
<td>Outside</td>
<td>Welded steel with pontoon floating roof</td>
<td>1959</td>
<td>JP-8</td>
</tr>
<tr>
<td>3</td>
<td>3,360,000 (110 feet/diameter)</td>
<td>Outside</td>
<td>Welded steel with pontoon floating roof</td>
<td>1959</td>
<td>JP-8</td>
</tr>
<tr>
<td>4</td>
<td>2,310,000 (90 feet in diameter)</td>
<td>Outside</td>
<td>Welded steel with pontoon floating roof</td>
<td>1959</td>
<td>JP-8</td>
</tr>
<tr>
<td>5</td>
<td>30,240</td>
<td>Outside</td>
<td>Welded carbon steel with vertical cone roof</td>
<td>1959</td>
<td>JP-8 for transfer pumps</td>
</tr>
<tr>
<td>6</td>
<td>17,040</td>
<td>Outside</td>
<td>Welded carbon steel with vertical cone roof</td>
<td>1991</td>
<td>FSII</td>
</tr>
<tr>
<td>7</td>
<td>17,101</td>
<td>Outside</td>
<td>Welded carbon steel with vertical cone roof</td>
<td>1959</td>
<td>Reclaimed fuel from truck rack</td>
</tr>
</tbody>
</table>
The four petroleum storage tanks were constructed on site in 1959. Geodesic domes were added to the tanks in 1991. In 1993, it was noted the tank foundations were cracking and one of the tanks was leaning slightly. In 1995-96, new ringwall foundations were poured 25 feet northeast and east of the existing locations and the tanks were moved – two by floating the tanks on air and two by rolling the tanks on piping. The original tanks did not have liners under the foundations; however, a polyethylene liner was placed under the new tank foundations. The tank bottoms were recently upgraded to meet American Petroleum Institute Standards.

During the tank renovations, some of the tank cell walls were also moved and all were reconstructed. The old drainage lines with an ACM coating were removed and replaced with a new drainage system. Polyethylene liners were installed in the cell bottoms, with sand/gravel over the liners. Each tank cell was provided with a catch basin and a second oil/water separator was installed to handle the additional discharge.

The tanks were last cleaned and inspected in 2001 and 2002.

### 3.3.3.2 Underground Storage Tanks

DFSP-Grand Forks has two USTs for storing off-specification fuel that is recycled for energy recovery. Both tanks are double-walled fiberglass tanks equipped with leak-sensor underground warning systems. The tanks are used as temporary holding tanks for the fuel and are not waste storage tanks. There are no pressurized piping lines--only gravity-flow fill lines. Monthly, interstitial vapor-sensor monitoring is performed to confirm no leaks have occurred.
### Table 3-2. Underground Storage Tanks

<table>
<thead>
<tr>
<th>Tank No</th>
<th>Maximum Capacity (gallons)</th>
<th>Location</th>
<th>Construction Material</th>
<th>Year Installed</th>
<th>Product Stored</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>550</td>
<td>South of sample shed</td>
<td>Double-walled fiberglass</td>
<td>1988</td>
<td>Reclaimed fuel</td>
</tr>
<tr>
<td>11</td>
<td>550</td>
<td>South of admin building</td>
<td>Double-walled fiberglass</td>
<td>1988</td>
<td>Reclaimed fuel</td>
</tr>
</tbody>
</table>

### 3.3.3.3 Pipelines and Fuel Transfer Systems

The DFSP receives fuel via both tanker truck and via pipeline from the Williams Pipeline Company. An 8-in., underground, welded pipeline runs north from the Williams Pipeline Company along the Burlington Northern Santa Fe Railroad and under 27th Avenue North to the DFSP. There are eight cathodic protection test stations (sacrificial anodes) along this approximately one-mile long stretch of underground pipeline. Once the pipeline enters the DFSP, 46,000 lf of pipeline, complete with shut-off valves and fittings for control, route the fuel through four manifolds and direct the fuel to storage tanks, transfer pipelines, or truck racks. From DFSP, a 9-in. pipeline (10-inch at Kellys Slough) runs south out of the facility, under 27th Avenue North, and turns west toward GFAFB. The pipeline is carbon steel (Schedule 40) pipe, with a polyethylene-butyl-adhesive coating. New lines have a thermal plastic resin coating called “yellow jacket.” The line is buried about 40 in. bgs, on average, and no digging is permitted within 15 feet of the pipeline without contacting the DFSP. Personnel from the DFSP inspect the pipeline once per week, following the pipeline route, even though the line is not above ground anywhere along the route. In areas of high stress, such as under the highway or at the airport, the pipeline is enclosed in a double casing to prevent stress fractures. There are 74,000 lf of welded, underground pipeline between DFSP and GFAFB, with a holding capacity of 251,497 gallons and a transfer rate of about 35,000 to 40,000 gallons per hour. There are 28 cathodic protection test stations (sacrificial anodes) between DFSP and GFAFB and 5 rectifiers to protect the pipeline from corrosion. Two low-point drains, one on each side of Kellys Slough, permit clean-out of standing water from the interior of the pipe to prevent corrosion from the inside.

In October 2001, a Tracer Tight® leak test was performed on the piping system at GFAFB. Tracer Tight® leak testing is a patented process performed by mixing a volatile chemical concentrate with the product inside a pipeline, followed by the detection of tracer underground in the vapor phase. If a pipeline leaks, the tracer is released into the soil and disperses in all directions. If the pipeline leaks under water, the tracer rises to the surface of the water and releases into the air. There were no leaks detected in the pipeline on GFAFB. According to GFAFB personnel, there have been no leaks in the pipeline on GFAFB for at least the past six years.

The truck loading facility consists of three loading racks, with four loading bays equipped with an overfill protection system, for bottom-loading tanker trucks. Generally only two trucks are serviced at one time. The loading pad is fully curbed and graded. Storm water runoff and spills are directed into trench drains that lead to the OWSs. Drain lines from the truck rack are controlled by manually operated gate valves that are kept closed when not in use.
The rail car loading racks are currently blind flanged and in a caretaker status. If reactivated, the system would be capable of handling ten to twenty tank cars, depending upon size. There are no containment or diversionary structures, however, and any overflow or spill would flow into the drainage ditch along the terminal.

3.3.4 Oil/Water Separator
A shallow, underground tile drainage system leading to two oil/water separators underlies the fuel distribution and contained areas of the terminal. The separators have a storage capacity of 1,000 and 1,500 gallons and are rated at 100 and 250 gallons per minute, respectively. One was installed as part of the original equipment; the second was installed in 1995. The separators are cleaned out and inspected yearly. Fuel that has accumulated in the separators is pumped into Tank 7. Water collected in the separators is routed through the lift station and discharged to a ditch on the south side of 27th Avenue North under National Pollutant Discharge Elimination System (NPDES) permit ND0024023. The permit expires March 31, 2005. A June 2002 inspection by the North Dakota Department of Health, Division of Water Quality, indicated all records were available and in good order and there were no current permit violations.

3.3.5 Wastewater Treatment, Collection, and Discharge
Sanitary wastes at the terminal are discharged into an onsite septic system that is serviced by Rotor-Rooter, when necessary. Other wastewaters generated include tank bottom waters and equipment wash-down rinse water. Tank bottom waters are collected and disposed as discussed in Section 3.3.1.2; rinse water that has the potential to be contaminated with JP-8 or with oil and grease is directed to the OWS prior to discharge.

In 1986, when the four large storage tanks were being cleaned, a wastewater sample was submitted for analysis to the Fuels Analysis Laboratory, University of North Dakota, to determine disposal requirements. The analysis indicated the wastewater was not hazardous with respect to lead and could be disposed of through the Grand Forks public wastewater treatment system.

3.3.6 Other Environmental Factors
No additional environmental factors have been identified.

3.4 Disclosure Factors

3.4.1 Facility Disclosure Factors
Facility disclosure factors include substances or conditions that may affect the use of the property, but are not regulated under CERCLA, and/or hazardous substances that do not pose specific risk or hazard to human health or safety if maintained and managed properly. These factors were not used for property categorization because there is no indication a release has occurred.

3.4.1.1 Pesticides/Herbicides/Rodenticides
No significant pesticide, herbicide, or rodenticide storage or application was identified for either the DFSP or the Defense Fuels Pipeline. Personnel at the DFSP formerly used Round-up, a commercially available product, to control weeds. For the past few years, however, Fert-L-Lawn (a licensed, state-approved local company), has been applying Sahara and Gly Fos three times
per year for weed control at the terminal. Both herbicides are registered with the USEPA and have been applied in accordance with current regulations.

According to interviews conducted with terminal personnel, no pesticides are applied on the pipeline. Trimming is performed occasionally to clear the pipeline inspection route.

On GFAFB, the pipeline lies near ditches that occasionally have standing water. During the summer, the Base Entomology Department applies Altosid XR Briquettes, a mosquito larvicide (EPA registration number 2724-421), in accordance with applicable regulations. Additionally, an herbicide (2,4-D) is occasionally applied to lawn areas for control of dandelions.

3.4.1.2 Medical/Biohazardous Waste
A review of environmental records and interviews with personnel indicate no significant medical or biohazardous waste is generated at the DFSP or at the Defense Fuels Pipeline, nor is there any historical records indicating generation of these wastes.

3.4.1.3 Ordnance
There is no indication of any ordnance stored or used at the DFSP. No one interviewed could recall ordnance storage or use at the facility or on the pipeline.

3.4.1.4 Radiological Substances
A review of environmental records and interviews with personnel indicate no radiological substances or radioactive equipment has been used at the DFSP or at the pipeline.

3.4.1.5 Solid Waste
Solid waste, consisting of trash and other general wastes, is handled by the city of Grand Forks. Based upon a review of historical aerial photographs and topographic maps and interviews with facility personnel, there is no indication any trash or other wastes were ever disposed at the DFSP.

3.4.1.6 Drinking Water Quality
In August 2002, drinking water at the DFSP was tested for bacteria, nitrate-nitrite, and sulfate. All parameters were below the recommended allowable limit. No drinking water wells for individuals or for the community of Grand Forks were identified in the vicinity of the terminal.

3.4.1.7 Asbestos-Containing Material
No asbestos survey has been completed at DFSP and, during the site inspection, no obvious ACM was observed. The office was redecorated during the mid 1990s. In 1995, water lines with an ACM wrapping were replaced in the tank containment areas. Also, an ACM wrapper on the diesel generator muffler and an ACM pipe wrap on the pig launcher have been removed.

3.4.1.8 Polychlorinated Biphenyls (PCBs)
A bank of three pole-mounted transformers and a single, pole-mounted transformer are located just inside the front fence of the DFSP. These transformers belong to the NODAK Electric Cooperative, Inc. In June 2003, the oil in the transformers was tested for PCBs; analytical results were non-detect for all four transformers. The transformers appear to be very well
maintained and there is no apparent sign of leakage. If there is any problem with the transformers, all responsibility belongs to NODAK.

Several dry-type transformers that do not contain oil are also located at the terminal. Suspended fluorescent lighting in the Administrative Building and Laboratory was installed when the facilities were remodeled in 1994-95. If these lights were newly purchased prior to installation, it is unlikely the lighting fixtures contain PCBs. No information is available about the fluorescent light ballasts in other buildings.

3.4.1.9 Radon
Radon is a common, naturally occurring material in the soil and is not associated with any current or past activities. No radon testing has been conducted at the facility. The USEPA recommends 4.0 picoCuries per liter of air (pCi/L) be used as a target level for corrective action in occupied areas. The DFSP is located in USEPA Radon Zone 1, characterized by an average indoor level greater than 4.0 pCi/L. However, it is highly unlikely that the radon level within any buildings is of concern because of the ventilation provided and the short time duration spent in the buildings by personnel.

3.4.1.10 Lead-Based Paint
No LBP testing has been performed at the facility. LBP was historically used on tanks and other structures exposed to the weather. Because the buildings were constructed prior to the DoD ban on the use of LBP in 1978, it is possible that the buildings contain LBP.

In 1993, the tanks were sand-blasted, primed, and painted with epoxy. Paint wastes generated during the activity were disposed of as LBP. Although some chips may have fallen on the ground at that time, a short time later all the soil in the containment cells was removed to install liners. Thus any paint chips in the soil were removed.

3.4.2 Conservation Disclosure Factors
Conservation disclosure factors are structures or artifacts of historical interest, threatened or endangered species or their habitats, recreational interests, and/or valuable mineral resources that may affect the transfer of property. Conservation disclosure factors are not used in property categorization.

3.4.2.1 Cultural Resources
No cultural resources have been identified.

3.4.2.2 Biological Resources
The North Dakota Parks & Recreation Department was contacted for information regarding rare species and significant natural areas within the project area. The North Dakota Natural Heritage Inventory compiled files of rare species and significant ecological communities within one mile of the project area. The results are shown on Figure 3-4, Biological Resources.

Two significant natural features were identified in the Natural Heritage Inventory, as shown in Table 3-3.
Figure 3-4. Biological Resources.
Grand Forks, ND

Source: North Dakota Natural Heritage Inventory

Legend
- Natural Community
- Animal

QUADRANGLE LOCATION

Scale - Miles

0 1 2

NORTH DAKOTA

CALAMAGROSTIS STRICTA
CAREX SARTWELL
C. PRAEGRAECIUS
PLANTAGO ERIOPODA
(BRACKISH, WET MEADOW)

CICINDELA CIRCUMPICTA JOHNSON
(A TIGER BEETLE)
### Table 3-3. Biological Resources

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Common Name</th>
<th>Global Rank/ State Rank</th>
<th>Breeding Habitat/Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cicindela circumpicta johnsonii</td>
<td>A tiger beetle</td>
<td>Secure; common, widespread, and abundant/ state rank not yet assessed</td>
<td>Saline soils/ Grand Forks</td>
</tr>
<tr>
<td>Calamagrostis stricta, Carex sartwell, C. praegracilis, Plantago eriopoda</td>
<td>Brackish, wet meadow</td>
<td>Natural communities unranked</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>

#### 3.4.2.3 Natural Resources

The Defense Fuels Pipeline runs through the southern-most portion of Kellys Slough. In 1936, President Franklin D. Roosevelt established Kellys Slough National Wildlife Refuge. The Refuge was to be set aside for use "as a refuge and breeding ground for migratory birds and other wildlife." Members of the Kelly family were the landowners who asked the federal government to protect the original Refuge land. In addition to the original, 1,270-acre Refuge, other lands were purchased and developed into Waterfowl Production Areas. The U.S. Fish and Wildlife Service’s Devils Lake Wetland Management District office currently owns and manages more than 4,000 acres of land adjacent to or near the Refuge.

In 1990, the Fish and Wildlife Service initiated a North American Waterfowl Management Plan project aimed at creating, restoring, and managing quality wetland and upland habitat in the Kellys Slough area. Refuge wetlands flow directly into the Turtle River, a tributary of the Red River. Construction of dikes and the installation of water control structures began in 1991. By 1994, the Service was managing water levels in eight pools covering almost 900 acres. Plans are in place to develop several more managed pools on the Refuge.

Migratory and breeding waterbirds are found at Kellys Slough, including giant Canada geese, sandpipers, mallards, and raptors such as red-tailed hawks and bald eagles. Other species of wildlife that can be seen at Kellys Slough National Wildlife Refuge are white-tailed deer, muskrat, raccoon, white-tailed jackrabbit, and mink.
4. FINDINGS FOR ADJACENT PROPERTIES

4.1 LAND USE
An evaluation of the environmental conditions of adjacent properties was conducted to assess possible impacts on the DFSP terminal and the Defense Fuels Pipeline. The terminal is located on the northern edge of the city of Grand Forks and much of the circumjacent land is farmland, with development only occurring south of the site. Further south and southwest, along 42nd Street North, are several single-family residences and light industrial facilities such as North Dakota Mustard and Spice and North Dakota Concrete Products. The pipeline route is generally through a rural, unpopulated area that is primarily farmland. On April 28 and 29, 2003, a visual inspection was conducted of adjacent properties and the neighborhood surrounding the DFSP and the pipeline, respectively. The following features were observed in the vicinity of the DFSP:

- North: Vacant, undeveloped farmland. About a mile north is CF Industries, with two large anhydrous ammonia tanks.
- East: Vacant, undeveloped farmland.
- South: Cenex Transportation – primarily a transportation facility for oils, fertilizer, gasoline, and jet fuel, with several large ASTs containing road oil and dry fertilizer.
- West: Burlington Northern Santa Fe Railroad – runs north-south along the western boundary of the site. Further west is undeveloped farmland.

Except for the beginning and end points, the only development along the pipeline is the Grand Forks International Airport. The pipeline route is also adjacent to the Grand Forks Municipal Landfill, the city wood/construction debris landfill, and the garbage compactor facility. Prior to entering GFAFB property, the pipeline route is near the GFAFB lagoons.

4.2 RECORDS SEARCH
A search of available environmental records maintained by federal and state government agencies was conducted to determine if any sites appearing on these lists, within the search radius indicated, could have an environmental effect on the DFSP. Thirty databases were reviewed, as shown in Table 4-1.

<table>
<thead>
<tr>
<th>Environmental Databases Reviewed</th>
<th>Radius (in miles)</th>
<th>Num. of Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Federal Lists and Sites</td>
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<td></td>
</tr>
<tr>
<td>National Priorities List (NPL)</td>
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</tr>
<tr>
<td>Proposed NPL</td>
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<tr>
<td>Comprehensive Environmental Response, Compensation, Liability, and Information System (CERCLIS)</td>
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<tr>
<td>CERCLIS, No Further Remedial Action Planned (NFRAP)</td>
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<td>1.25</td>
</tr>
<tr>
<td>Correction Action Report (CORRACTS) Sites</td>
<td>2.0</td>
<td>0</td>
</tr>
</tbody>
</table>