

**Final Proposed Plan for  
Installation Restoration Program  
Sites 1, 2, 3, 5, 6, and 7  
161<sup>st</sup> Air Refueling Wing  
Arizona Air National Guard Base  
Sky Harbor International Airport – Phoenix, Arizona**



**Air National Guard Announces  
Proposed Plan**

This Proposed Plan presents the Preferred Alternative of No Further Action (NFA) for the assessment of potential soil and groundwater contamination at the following Installation Restoration Program (IRP) sites located at the Arizona Air National Guard Base (ANGB), 161<sup>st</sup> Air Refueling Wing (ARW), Phoenix, Arizona:

- IRP Site 1 – JP-4 Hydrant Area
- IRP Site 2 – Hazardous Waste Storage Area
- IRP Site 3 – Fuel Bladder Area
- IRP Site 5 – Ammunition Dump
- IRP Site 6 – Petroleum, Oil, and Lubricant (POL) Area
- IRP Site 7 – Old Oiled Road Area

IRP Site 4, a hazardous waste collection area, is not included as part of this Proposed Plan. IRP Site 4 is associated with the 107<sup>th</sup> Tactical Control Squadron, located at the Papago Army Military Reservation approximately 4 miles northeast of the ARW.

This Proposed Plan provides the rationale for selection of NFA as the Preferred Alternative at the IRP sites identified. This Proposed Plan includes a summary of investigation activities conducted at each of the six IRP sites and cleanup activities conducted at IRP Sites 1, 6 and 7.

This document is issued by the Air National Guard (ANG), the lead agency for site activities. The document has been coordinated with the Arizona Department of Environmental Quality (ADEQ), the relevant regulatory authority for site cleanups.

**MARK YOUR CALENDARS**

**PUBLIC COMMENT PERIOD:**

November 29, 2013 – December 29, 2013

The Air National Guard (ANG) will accept written comments on the Proposed Plan during the public comment period. Comment letters must be postmarked by December 29, 2013 and should be submitted to:

Major Craig Alann, Environmental Manager  
161<sup>st</sup> Air Refueling Wing  
Arizona Air National Guard  
3200 East Old Tower Road  
Phoenix, Arizona 85034-6098

Email: [craig.alann@ang.af.mil](mailto:craig.alann@ang.af.mil)

Phone: (602) 302-9254

To request an extension, send a request in writing to Major Craig Alann by 5 p.m., December 29, 2013.

**PUBLIC MEETING:**

If there is interest from the public, the ANG will provide an opportunity to explain the Proposed Plan and the preferred alternative for the IRP Sites 1, 2, 3, 5, 6, and 7. The public are encouraged to contact the ANG by December 29, 2013 if they have an interest in having a public meeting. The ANG will issue additional public notices to announce a date, time, and location of a meeting. Additional oral or written comments will also be accepted at the meeting.

**For more information, see the Information Repository at the following location:**

Phoenix Public Library – Saguaro Branch  
2808 North 46<sup>th</sup> Street  
Phoenix, Arizona, 85008  
(602) 262-6802  
Call for hours

Subsequent to various assessment, investigation, and clean-up activities at the IRP sites detailed below, the ANG, in consultation with the ADEQ, concluded that no further actions are required at IRP Sites 1, 2, 3, 5, 6, and 7.

Although this Proposed Plan recommends NFA for IRP Sites 1, 2, 3, 5, 6, and 7, a final determination will not be made until the public comment period ends and all comments are reviewed and addressed. The NFA decision for each IRP site may be

reviewed and modified in the future if new information becomes available, which indicates the presence of contamination or exposure routes that may cause an unacceptable risk to human health or the environment. Therefore, the public is encouraged to review and comment on information presented in this Proposed Plan. For reference, a Glossary of Terms is provided at the end of the Proposed Plan.

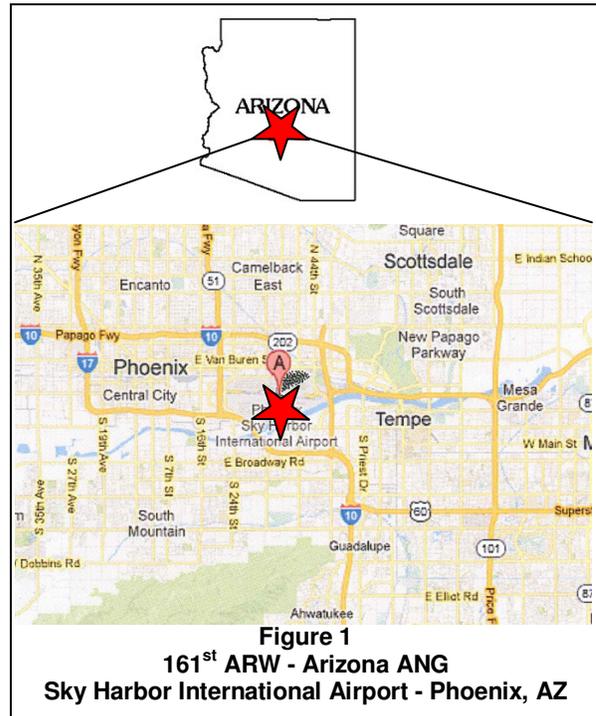
This Proposed Plan summarizes information that can be found in greater detail in the various investigation study reports for the IRP sites, and other documents contained in the Information Repository file for IRP Sites 1, 2, 3, 5, 6, and 7. Copies of site documents are available for review at the Phoenix Public Library – Saguaro Branch, 2808 North 46<sup>th</sup> Street, Phoenix Arizona 85008.

This Proposed Plan is issued by the ANG, as part of its public participation responsibilities under Section 117 (a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 United States Code (USC) § 9617(a) and Section 300.430 (f)(3) of the National Oil and Hazardous Substances Pollution Contingency Plan.

The ANG and the ADEQ encourage the public to review these documents, to gain an understanding of the IRP sites and the investigation and cleanup activities that have been conducted.

### Site History and Background

The 161<sup>st</sup> ARW, Arizona ANGB, is located at the Sky Harbor International Airport (Airport) within the City of Phoenix, Arizona (Figure 1). The ANGB occupies approximately 51 acres at the south end of the Airport. The Air Force leases the land from the City of Phoenix, and then grants a license to the Arizona ANG. Areas north and west of the ANGB are occupied primarily by the Airport and south and east of the ANGB are undeveloped lands adjoining the Salt River valley. The channel of the Salt River is



immediately south of the ANGB. The ANGB has been occupied continuously since its construction in 1952.

In 1999 and 2000, the Airport was expanded by the addition of a third runway and associated taxiway. To accommodate the Airport expansion, it was necessary to relocate the ANGB facilities approximately 800 feet southwest of its original location (Figure 2). The boundary outline of the ANGB prior to relocation in 1999 and 2000 is also depicted in Figure 2. By July 2001, the ANG no longer controlled or leased the former installation property outside of the current Base boundary.

The 161<sup>st</sup> ARW was previously designated as the 161<sup>st</sup> Air Transport Group in 1962 and the 161<sup>st</sup> Aeromedical Airlift Group in 1968. The present mission of the 161<sup>st</sup> ARW, air-to-air refueling support began in 1972.

The ANGB and Airport are located within the Motorola 52<sup>nd</sup> Street (M52) Superfund Site that includes several contaminated sites that have undergone investigation and/or remediation. Groundwater contaminants associated with the M52 site include volatile organic compounds (VOCs).

A total of six IRP sites, (IRP Sites 1, 2, 3, 5, 6, and 7), as described on Page 1 of this Proposed Plan, have been identified and investigated at the 161<sup>st</sup> ARW. The locations of these six IRP sites at the 161<sup>st</sup> ARW are depicted in Figure 2.

As part of the Department of Defense's (DoD's) IRP, the ANG initiated activities at IRP Sites 1, 2, 3, 5, 6, and 7 to identify, evaluate, and remediate former disposal or spill sites containing hazardous substances, and assess the potential impact on human health and the environment. In addition, at IRP Site 6 remediation and monitoring activities were conducted from 1997 through 2009.

### **IRP Site 1 – JP-4 Hydrant Area**

IRP Site 1 is located within the footprint of the northern portion of the former ANGB, which is now the location of airport taxiways. IRP Site 1 was formerly an area with concrete pavement and gravel-covered ground near the JP-4 hydrants at the west side of the aircraft parking apron (Figure 3). The JP-4 hydrants were located in a fenced area immediately east of former Control Building No. 3. The hydrant system consisted of a series of pumps, pipes, and valves located above ground and underground, used in aircraft refueling.

Reportedly, small releases of JP-4 fuel may have occurred in the area in the past, and the area received potentially impacted surface runoff from the northern portion of the aircraft parking area. The total amount of fuel released is estimated to be a small volume, with actual amounts unknown.

Activities completed at IRP Site 1 include a Preliminary Assessment (PA) in 1988, a Site Investigation (SI) in 1992, a Site Assessment (SA) in 1993, groundwater monitoring from 1993 to 1995, and a Decision Document (DD) and site closure in 1996 and 1999.

### ***Preliminary Assessment – 1988***

A PA of the 161<sup>st</sup> ARW was conducted in 1988, which identified IRP Site 1. The PA included a review of available installation

and regulatory records regarding IRP Site 1, and documents initial site surface conditions. The PA recommended an SI to determine whether a release has occurred to soil and groundwater.

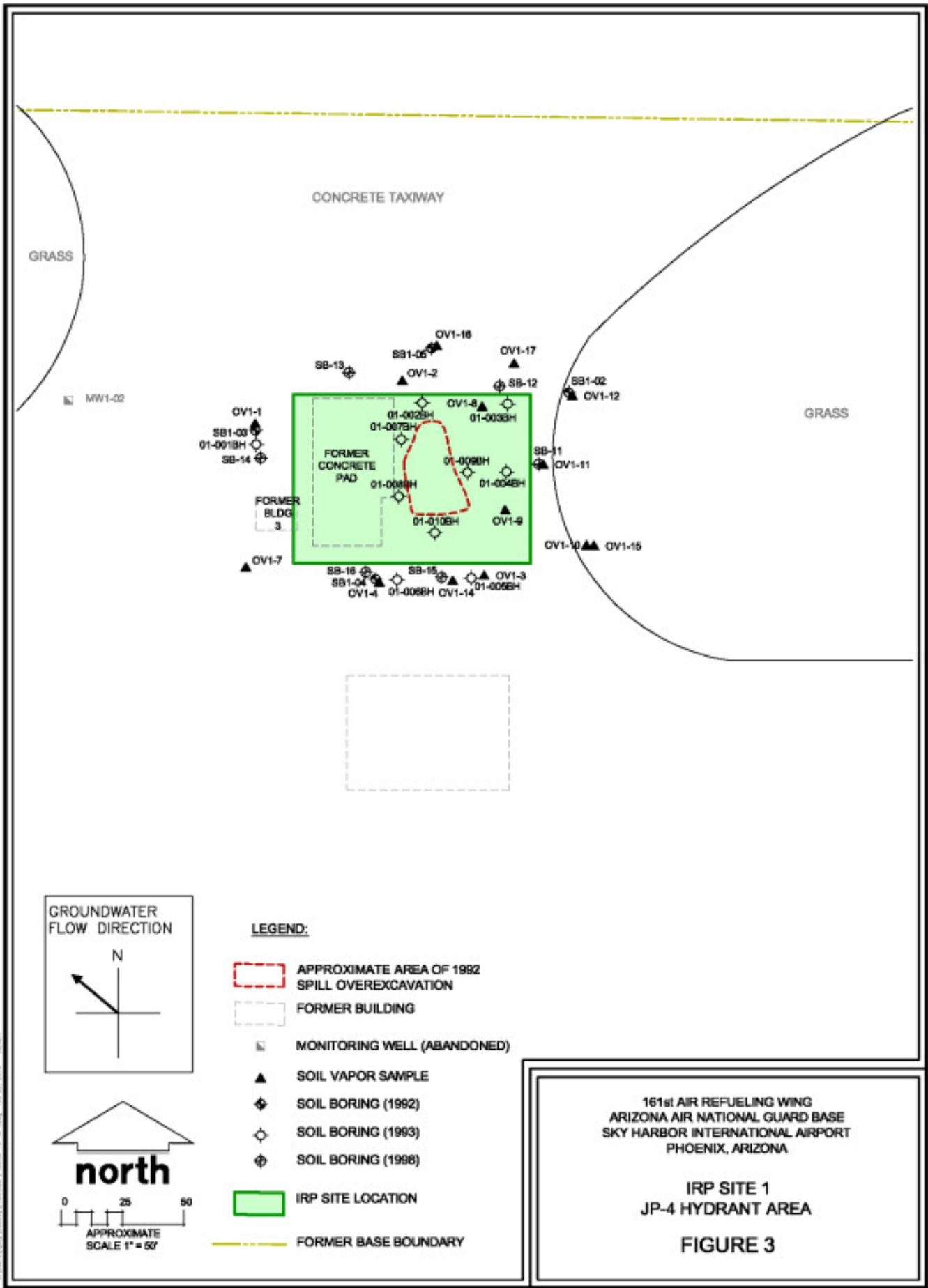
### ***Site Investigation (SI) – 1990-1991***

From 1990 through 1991, an SI was completed at IRP Site 1, including the completion of seventeen soil borings, and soil vapor sampled for field screening purposes. Based on these results, four soil borings were completed, and one monitoring well was installed. Groundwater flow direction was determined through the installation of three piezometers at the 161<sup>st</sup> ARW.

The soil and water samples collected from these locations were analyzed for VOCs, semivolatile organic compounds (SVOCs), and total petroleum hydrocarbons (TPH). The VOC, SVOC, and TPH results for soil and groundwater from IRP Site 1 were compared to background concentrations. Acetone and TPH were detected in soil samples, and 1,2-dichloroethylene and trichloroethene were detected in groundwater. The detected concentrations of 1,2-dichloroethylene and trichloroethene in groundwater did not exceed applicable maximum contaminant levels. The results were reported to be similar to background concentrations. Based on the data collected, it was concluded there was no significant contamination at IRP Site 1 and the site does not indicate a substantial threat to human health or the environment.

### ***Site Assessment – 1993***

A spill of 500 to 1,000-gallons of JP-4 fuel occurred in the IRP Site 1 area in September 1992. Approximately 10 cubic yards of soil were excavated and removed in the area of the spill. Additional soil and groundwater sampling was conducted early in 1993 to assess the area of the spill, including completion of ten soil borings. Soil samples from the soil borings were analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), TPH, and methyl-



tertiary-butyl-ether (MTBE). Five soil borings and three monitoring wells were also installed and sampled to collect background data at the 161<sup>st</sup> ARW.

TPH was the only contaminant found in soil. The assessment work delineated the lateral extent of contamination, while the vertical extent of contamination could not be delineated due to the presence of the JP-4 hydrant system components. The SA report recommended no further soil remediation at the spill site was warranted. The SA recommended periodic monitoring of the one monitoring well at IRP Site 1 to determine potential groundwater contamination.

#### ***Groundwater Monitoring – 1993 to 1995***

Groundwater monitoring was conducted from the site monitoring well at IRP Site 1 in 1993 and 1994, which showed no contaminant levels in groundwater above ADEQ cleanup standards.

#### ***Decision Document and Site Closure – 1996 and 1999***

A DD for IRP Site 1 was submitted to the ADEQ in January 1996 that recommended NFA for the site. The ADEQ concurred with the NFA classification recommendation for IRP Site 1 in a March 6, 1996 letter. The monitoring well at IRP Site 1 was properly closed in August 1999.

#### **IRP Site 2 – Hazardous Waste Storage Area**

IRP Site 2, a hazardous waste storage area, is located in the western portion of the footprint of the former ANGB, now the location of an airport taxiway. IRP Site 2 was located west of former Building 2 (Figure 4). At this location waste JP-4, solvent, hydraulic fluid, and oil was stored in labeled drums on a concrete pad. The site is a rectangular area approximately 20 by 30 feet enclosed by a brick wall and chain-link fencing. The area was used for waste storage beginning around 1982. Full drums stored in the area were periodically pumped out by a contractor. Wastes were suspected to have been released at IRP Site 2, although the total amount is

estimated to be a small volume, with actual amounts unknown.

Activities completed at IRP Site 2 include a PA in 1988, an SI in 1992, and a DD and Site Closure in 1996 and 1999.

#### ***Preliminary Assessment – 1988***

A PA of the 161<sup>st</sup> ARW was conducted in 1988, which identified IRP Site 2. The PA included a review of available installation and regulatory records regarding IRP Site 2, and documents initial site surface conditions. The PA recommended an SI to determine whether a release had occurred to soil and groundwater.

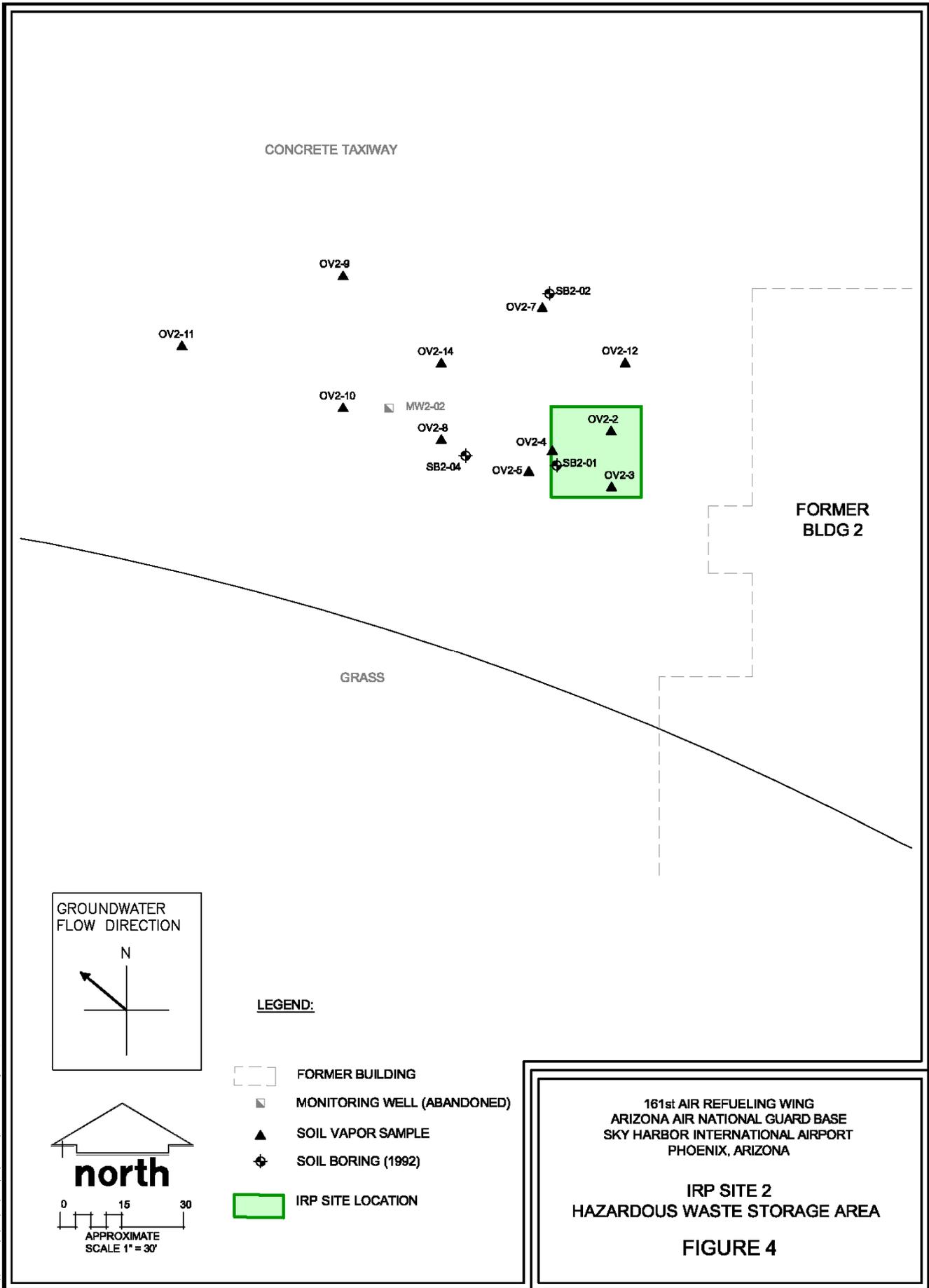
#### ***Site Investigation – 1992***

In 1992, an SI was conducted at IRP Site 2 with eleven soil borings completed and soil vapor analyzed for field screening purposes. Based on these results, three soil borings were completed and one monitoring well was installed and sampled. Retained soil and groundwater samples were analyzed for VOCs, SVOCS, TPH, and metals. Five soil borings and three monitoring wells were also installed and sampled to collect background data at the 161<sup>st</sup> ARW. Groundwater flow direction was determined through the installation of three piezometers at the 161<sup>st</sup> ARW.

Two metals, aluminum and beryllium in soils at IRP Site 2 were the only analytes found at the site that exceeded the ADEQ cleanup standards. None of the groundwater samples had analyte concentrations that exceeded ADEQ cleanup standards. The SI also included a preliminary risk evaluation. Based on the data collected at IRP Site 2 and the preliminary risk evaluation, it was concluded that IRP Site 2 was not a substantial threat to human health or the environment.

#### ***Decision Document and Site Closure – 1996 and 1999***

The ANG submitted a DD for IPR Site 2 to the ADEQ in January 1996, which recommended NFA at IRP Site 2. The



ADEQ concurred with the NFA classification recommendation for IRP Site 2 in a July 8, 1996 letter. The monitoring well at IRP Site 2 was properly closed in August 1999.

### **IRP Site 3 – Fuel Bladder Area**

IRP Site 3 is located along the western edge of the former ANGB, just west of former Building No. 25. The area around IRP Site 3 is currently an airport taxiway (Figure 5). The area was used in 1972 and 1973 for the temporary storage of JP-4 and leaded aviation gasoline (AVGAS) in three 30,000-gallon bladders while the POL area was being refurbished. During the time bladders were used, one of the AVGAS bladders leaked fuel from around an inspection hatch. The amount of fuel released is unknown, but is suspected it may have amounted to several thousand gallons.

Activities completed at IRP Site 3 include a PA in 1988, an SI in 1992, and a DD and Site Closure in 1996 and 1997.

#### ***Preliminary Assessment – 1988***

A PA of the 161<sup>st</sup> ARW was conducted in 1988, which identified IRP Site 3. The PA included a review of available installation and regulatory records regarding IRP Site 3, and documents initial site surface conditions. The PA recommended an SI to determine whether a release has occurred to soil and groundwater.

#### ***Site Investigation – 1992***

An SI conducted in 1992 included soil and groundwater sampling at IRP Site 3. Three soil borings and two monitoring wells were drilled and sampled at IRP Site 3. The monitoring wells were positioned downgradient and upgradient of IRP Site 3. Five soil borings and three monitoring wells were also installed and sampled to collect background data at the 161<sup>st</sup> ARW. Groundwater flow direction was determined through the installation of three piezometers at the 161<sup>st</sup> ARW.

Soil and groundwater samples were analyzed for VOCs, SVOCs, TPH, and lead. Several

VOCs and TPH were detected in samples from IRP Site 3, but none of the analytical compound concentrations exceeded ADEQ cleanup standards. The SI also included a preliminary risk evaluation. Based on the data collected at IRP Site 3 and the preliminary risk evaluation, the SI Report concluded IRP Site 3 was not a substantial threat to human health or the environment. The detected TPH was attributed to an upgradient location, later identified as IRP Site 6.

#### ***Decision Document and Site Closure – 1996 and 1997***

A DD for IRP Site 3 was submitted to the ADEQ in January 1996 that recommended NFA for the site. The ADEQ concurred with the NFA classification recommendation for IRP Site 3 in a June 28, 1996 letter. The monitoring wells at IRP Site 3 were properly closed in 1997.

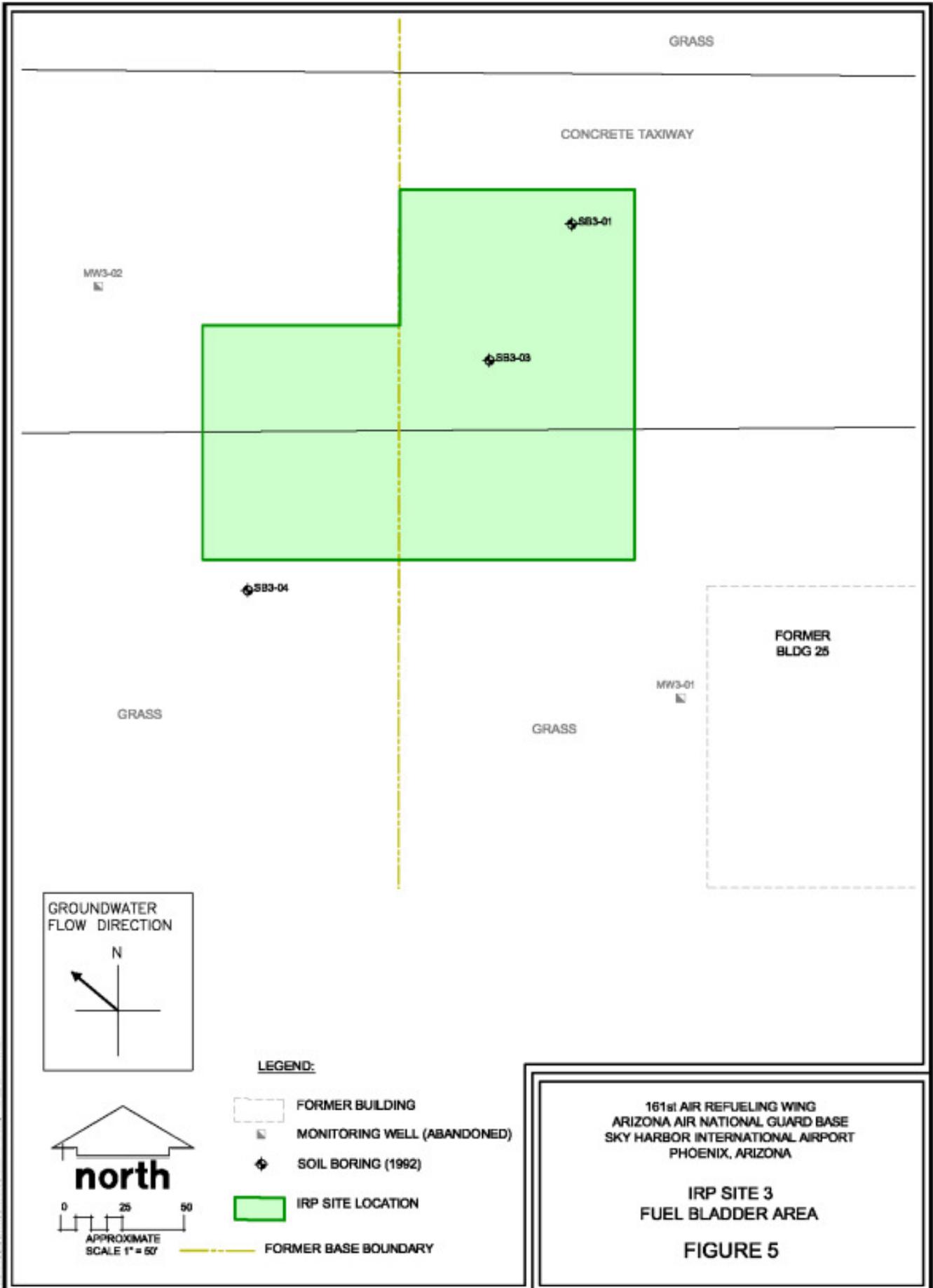
### **IRP Site 5 – Ammunition Dump**

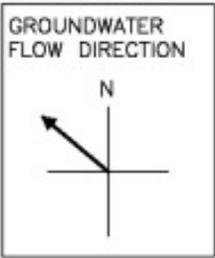
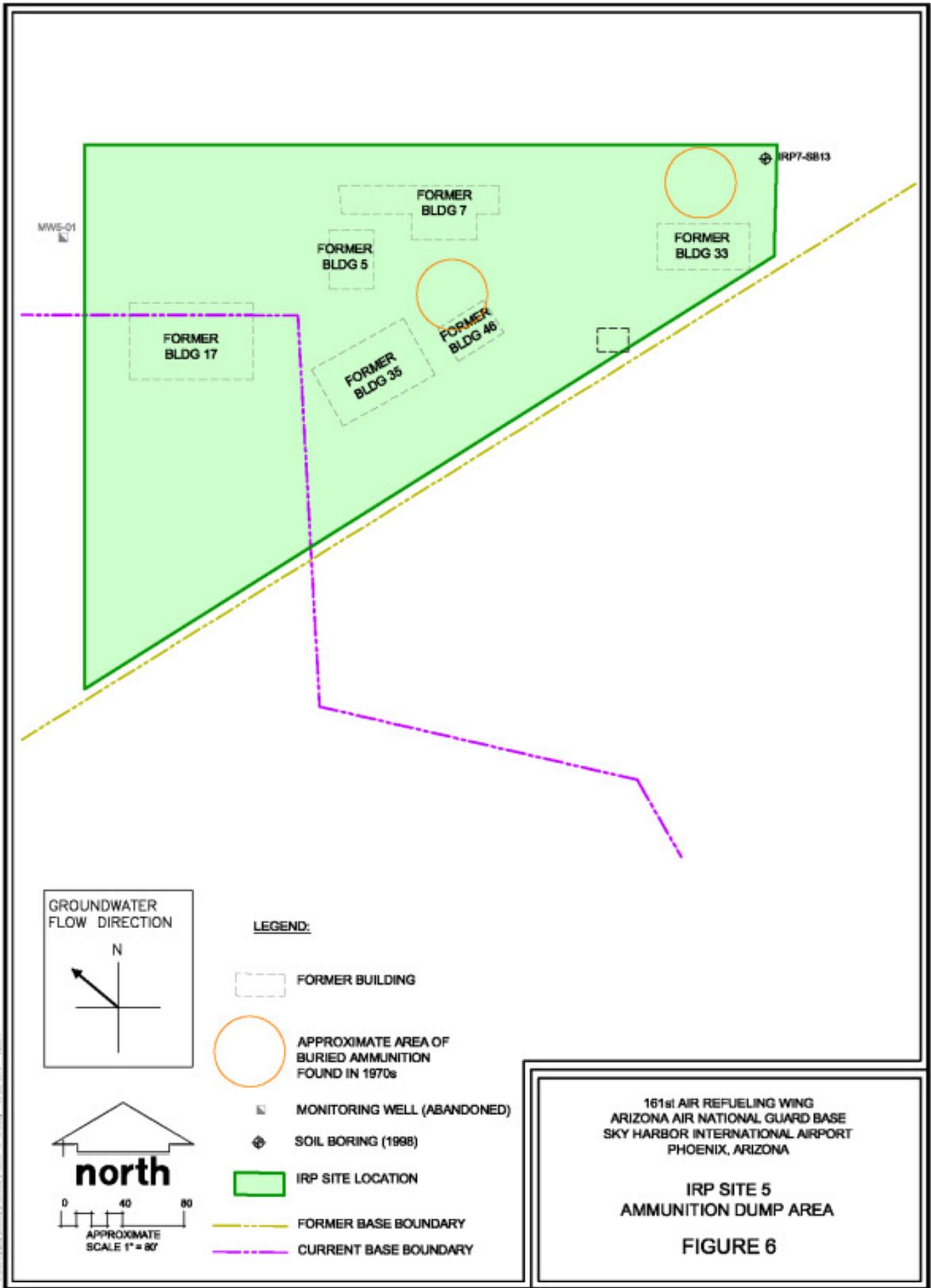
IRP Site 5 is located in the northeast corner of the existing ANGB boundary, and encompasses two areas; one located near former Building No. 46 and one located near the former ANGB fire station building, where 50 caliber ammunition was found buried at a depth of 6 to 8 feet (Figure 6). Ammunition was discovered in these areas at a depth of 6 to 8 feet during trenching activities in the late 1970s. The quantity of ammunition material buried at IRP Site 5 was uncertain.

Activities completed at IRP Site 5 include a PA in 1988, a SI in 1992, a DD in 1996, and Site Closure activities in 1999.

#### ***Preliminary Assessment – 1988***

A PA of the 161<sup>st</sup> ARW was conducted in 1988, which identified IRP Site 5. The PA included a review of available installation and regulatory records regarding IRP Site 5, and documents initial site surface conditions. The PA recommended an SI to determine whether a release has occurred to soil and groundwater.





**LEGEND:**

- FORMER BUILDING
- APPROXIMATE AREA OF BURIED AMMUNITION FOUND IN 1970s
- MONITORING WELL (ABANDONED)
- SOIL BORING (1998)
- IRP SITE LOCATION
- FORMER BASE BOUNDARY
- CURRENT BASE BOUNDARY

161st AIR REFUELING WING  
 ARIZONA AIR NATIONAL GUARD BASE  
 SKY HARBOR INTERNATIONAL AIRPORT  
 PHOENIX, ARIZONA

IRP SITE 5  
 AMMUNITION DUMP AREA

FIGURE 6

### ***Site Investigation – 1992***

An SI was conducted in 1992 that included geophysical surveys of the IRP Site 5 area, in an effort to confirm the suspected historical ammunition disposal location. No geophysical anomalies were identified near the fire station building. Several geophysical anomalies recorded near Building 46 were attributed to underground utility lines. No large geophysical anomalies were detected, which could have confirmed the presence of ammunition burial locations.

Groundwater flow direction was determined through the installation of three piezometers: at the 161<sup>st</sup> ARW. One soil boring was advanced to obtain several soil samples and a monitoring well was installed to collect two groundwater samples from IRP Site 5 for analyses of nitrates and metals. The soil samples were also analyzed for VOCs. Five soil borings and three monitoring wells were also installed and sampled to collect background data at the 161<sup>st</sup> ARW.

Aluminum, barium, chromium, vanadium, and nitrate were detected in the soil samples, and mercury and nitrate was detected in the groundwater samples. None of the soil and groundwater samples collected from IRP Site 5 had concentrations of analyzed compounds that exceeded applicable ADEQ cleanup standards. The SI also included a preliminary risk evaluation. Based on the data collected at IRP Site 5 and the preliminary risk evaluation, the SI Report concluded IRP Site 5 did not present a significant threat to human health or the environment.

### ***Decision Document and Site Closure – 1996 and 1999***

A DD recommending NFA for IRP Site 5 was prepared and submitted to the ADEQ in January 1996. The ADEQ concurred with the NFA classification recommendation in the DD for IRP Site 5 in a July 22, 1996 letter. The monitoring well at IRP Site 5 was properly closed in August 1999.

### **IRP Site 6 – Petroleum, Oil, and Lubricant (POL) Area**

IPR Site 6 consists of the former POL storage area, which included ten USTs, connections, and distribution piping located on the southwest side of the former ANGB in the vicinity of former Building No. 21. IRP Site 6 is located in the aircraft parking apron of the existing ANGB (Figure 7). The USTs at the POL consisted of the following:

- Four 50,000-gallon JP-4 tanks.
- Four 25,000-gallon JP-4 tanks.
- One 7,500-gallon diesel tank.
- One 2,000-gallon waste oil tank.

The POL was used to store JP-4, diesel fuel, and waste oil from 1950 to 1999. The POL was closed in 1999 and demolished during relocation of the ANGB.

During site monitoring activities conducted as part of the SI for IRP Site 3 in 1992, petroleum contamination was found in groundwater at a monitoring well located upgradient from IRP 3. The contamination, which appeared to be unrelated to IRP Site 3, was attributed to the POL area and identified as IRP Site 6. The SI recommended further investigation at IRP Site 6 to determine the extent of petroleum hydrocarbons in soil and groundwater.

Activities completed at IRP Site 6 include a PA in 1990, an SI in 1992, a Remedial Investigation (RI) in 1995 and 1996, groundwater monitoring from 1995 to 2000, remedial pilot testing in 1997, a Feasibility Study (FS) and Engineering Evaluation/Cost Analysis (EE/CA) in 1998, remedial activities from 1998 through 2007, and Site Closure in 2010.

### ***Preliminary Assessment – 1988***

A PA of the 161<sup>st</sup> ARW was conducted in 1990, which detailed the USTs and materials stored at IRP Site 6. The PA included a review of available installation and regulatory records regarding IRP Site 6, and documents initial site surface conditions. There were no reported releases at the POL



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Area, and no further action was recommended.

### ***Site Investigation – 1992***

Based on the petroleum impacts detected in groundwater at IRP Site, an SI was conducted in 1992, with completion of one soil boring, which was converted to a monitoring well. Groundwater flow direction was determined through the installation of three piezometers: at the 161<sup>st</sup> ARW. Collected soil and groundwater samples were analyzed for VOCs, SVOCs, and TPH. Five soil borings and three monitoring wells were also installed and sampled to collect background data at the 161<sup>st</sup> ARW.

Benzene, toluene, ethylbenzene, xylenes, naphthalene, and TPH were detected in soil and groundwater samples, with the concentration of benzene in groundwater exceeding the applicable ADEQ MCL. The SI also included a preliminary risk evaluation. Based on the data collected at IRP Site 5 and the preliminary risk evaluation, the SI Report recommended an additional assessment be completed to evaluate the extent of petroleum impacts at IRP Site 6.

### ***Remedial Investigation – 1995 and 1996***

An RI was conducted at IRP Site 6 in 1995 and 1996, which included soil sampling from fifteen soil boring and installation of seventeen monitoring wells. Four rounds of groundwater samples were collected from the monitoring wells. The soil and groundwater samples were analyzed for VOCs, SVOCs, and TPH. Concentrations of benzene, total xylenes, and TPH in soil were reported to be above ADEQ cleanup standards. Benzene, ethylbenzene, and 1,1,1-trichloroethane (TCA) were reported to exceed ADEQ cleanup standards in groundwater samples. Following completion of the initial RI activities, groundwater at twelve of the seventeen monitoring wells had benzene concentrations above the ADEQ cleanup standard. Ethylbenzene concentrations in groundwater samples from four monitoring wells exceeded the ADEQ cleanup standard

and groundwater from one monitoring well exceeded the ADEQ cleanup standard for TCA. Following the installation and sampling of five additional monitoring wells as an addendum to the RI, seventeen of the twenty-two monitoring wells above the ADEQ cleanup standard.

Reported fuel releases from UST system transfer lines at the POL and an unspecified source in the motor pool area were identified as the sources of petroleum hydrocarbon contamination at IRP Site 6. A layer of free product was detected on the groundwater surface in two monitoring wells at IRP Site 6. The source of TCE contamination in groundwater at IRP Site 6 was attributed to an off-site source located upgradient of the ANGB.

A baseline risk assessment included in the RI concluded that groundwater contamination presented a potential risk to human health. The RI recommended additional investigation to further delineate the extent of contamination at IRP Site 6. It also recommended completion of an FS to develop, screen, and evaluate alternatives for remediation of IRP Site 6.

Subsequently soil contamination and groundwater contamination at IRP Site 6 were segregated into two Operable Units (OUs); OU-1 for soil and OU-2 for groundwater.

### ***Groundwater Monitoring – 1995 through 2000***

As part of the investigation of IRP Site 6, semiannual and later quarterly groundwater monitoring was conducted from 1995 to 2000 to monitor the extent of the groundwater contamination plume. In an RI Addendum in 1996, two additional monitoring wells were also installed during this period to complete groundwater delineation activities off the ANGB to the west, and seven additional monitoring wells were installed at or near the POL facility to better identify the extent of impacts in this area.

### ***Remedial Pilot Test – 1997***

To address contaminated soil and groundwater at IRP Site 6, a soil vapor extraction (SVE) and air sparge (AS) pilot test was performed in August 1996. The SVE/AS pilot test equipment was operated as an interim Remedial Action (RA) measure until June 1999 when a full-scale SVE/AS system was installed. Over this time, the interim system removed approximately 308,000 pounds of hydrocarbons.

### ***Feasibility Study – 1998***

An FS was completed for IRP Site 6 in June 1998, which evaluated several remedial alternatives as potential remedies to address soil and groundwater contamination at IRP Site 6. The recommended remedial technology for soil contamination (OU-1) was SVE and for groundwater contamination (OU-2) was AS. The ADEQ concurred with the remedial approach in 1998.

### ***Engineering Evaluation/Cost Analysis – 1998***

An EE/CA was performed in 1998 for potential non-time-critical removal actions involving soil within the upper 4 feet (shallow soil) in 1998. The shallow soil removal was necessary as part of the ANGB relocation project, which was completed to accommodate expansion of the Airport. Plans for the ANGB relocation project included removal of shallow soil across most of the ANGB. The EE/CA used existing soil data obtained from previous investigations at IRP Sites 1, 2, 3, 5, 6, and 7, as well as soil sample data from 75 additional soil borings at the ANGB to evaluate shallow soils. During these investigations, shallow soils impacted by TPH and VOCs were identified in various areas at the ANGB installation. Evaluation of the soil data indicated that none of the shallow soil sample data exceeded applicable ADEQ soil cleanup levels.

The EE/CA evaluated several removal action alternatives including No Action. Based on the removal action alternatives evaluation,

the No Action alternative was recommended because the contaminant levels in the shallow soil did not exceed ADEQ soil cleanup levels. Soil excavation and off-site treatment by thermal desorption was also recommended as a contingency, in the event that shallow soil contamination exceeding the ADEQ soil cleanup level were encountered during the installation relocation.

### ***POL UST Removals and Shallow Soil Excavation – 2000***

As part of the installation relocation project, the ten USTs at the POL area were removed in July 2000 followed by demolition of the POL facilities in the IRP Site 6 area. Petroleum hydrocarbon-impacted soil was observed during removal of the USTs at the POL. Because this area had already been investigated and characterized as IRP Site 6, additional assessment and/or removal activity was not necessary. However, it was determined that petroleum-impacted soil on the bottom of the 25,000-gallon JP-4 UST excavation pit would not meet compaction requirements for the installation relocation project. Therefore, approximately 2,300 tons of petroleum-impacted soil were excavated and treated off site by thermal desorption.

Additional shallow soil was removed from across most of the ANGB during the installation relocation project in 2000. Of the shallow soil excavated, a total of approximately 9,250 tons were disposed off site. Confirmation sampling indicated no further action was required at the excavated portions of the ANGB, with the exception of IRP Site 6, which was to undergo active remediation.

### ***Remediation System Design and Implementation – 1998 through 2007***

An SVE/AS remediation system design for IRP Site 6 was completed in October 1998 and approved by the ADEQ. The design plan included a groundwater monitoring program and remediation system operation and maintenance (O&M) plan. The

remedial design incorporated the abandonment of some existing wells due to the ANGB relocation. Installation of the SVE/AS system was finished in December 2000 and included 18 vapor extraction wells, 26 air sparging wells, and 8 vapor monitoring wells.

The SVE/AS remediation system was operated from 2001 to 2007 removing an estimated 585,000 pounds of hydrocarbons. During this time, groundwater and vapor monitoring was performed at IRP Site 6 to monitor the effectiveness of the SVE/AS system, as well as attainment of remedial goals. Following shutdown of the SVE/AS remediation system in 2007, vapor and groundwater monitoring continued into early 2009 in order to confirm remediation was complete. As closure criteria focused on the protection and cleanup of groundwater, and shallow impacted soils were removed from IRP Site 6 during POL tank removal activities, confirmation soil sampling was not conducted.

#### ***Site Closure Activities – 2010 and 2011***

A Final Closure Report for IRP Site 6 was prepared in 2010 summarizing the remediation activities and associated monitoring. The report recommended NFA for IRP Site 6. The ADEQ concurred with the NFA recommendation in a July 2, 2010 letter. The remediation system was dismantled and selected wells were properly closed in 2010 and 2011. The remaining monitoring wells at the site are planned to be closed in the 2013.

#### **IRP Site 7 – Old Oiled Road Area**

IRP Site 7 is a flat elongated area covered by asphalt and some grass that extends along the southeast boundary of the former ANGB (Figure 8). The area reportedly was the former location of an old mining road where waste oil was historically spread on the road surface.

Activities completed at IRP Site 7 include an SI on 1992, an RI 1995, a DD in 1996, and shallow soil excavation in 2000.

#### ***Site Investigation – 1992***

As part of the SI activities, IRP Site 7 was identified through the detection of TPH concentrations above ADEQ cleanup standards at a background soil sampling in the vicinity of IRP Site 7 area. Additional assessment was recommended to evaluate the TPH exceedance.

#### ***Remedial Investigation – 1995***

The RI completed in 1995 included additional soil sampling to investigate the TPH concentrations found in shallow subsoil during the SI activities. Collected soil samples were analyzed for VOCs, SVOCs, and TPH. TPH was the only constituent in the soil samples exceeding ADEQ cleanup standards. Based on the apparent limited extent of contamination at IRP Site 7, it was recommended in the RI that no further action was necessary at IRP Site 7. The RI also recommended that future investigation could be necessary at IRP Site 7 if contamination is found during construction activities associated with ANGB relocation.

#### ***Decision Document – 1996***

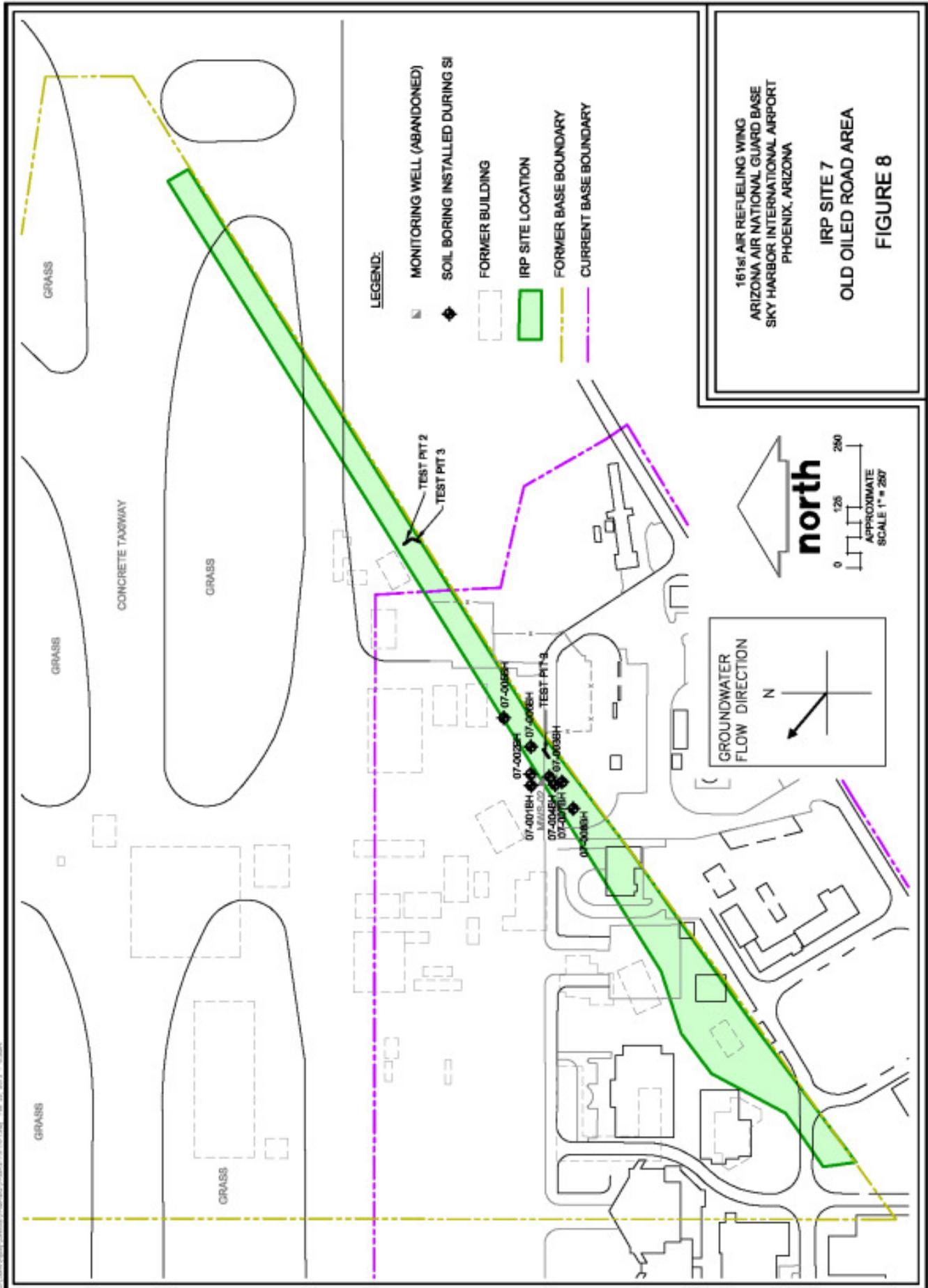
A DD for IRP Site 7 was submitted to the ADEQ in January 1996 that recommended NFA for IRP Site 7. The ADEQ concurred with the NFA classification recommendation for IRP Site 7 in a July 8, 1996 letter.

#### ***Shallow Soil Excavation – 2000***

As part of the ANGB facility relocation project, the TPH-impacted soils at IRP Site 7 were excavated and removed from the ANGB.

#### **Scope and Role of the Action**

NFA as the Preferred Alternative will be the final action for IRP Sites 1, 2, 3, 5, 6, and 7. NFA is appropriate at IRP Sites 1, 2, 3, 5, 6, and 7, to protect public health and welfare, and the environment because soil and groundwater sample data gathered at these IRP sites indicate remaining contaminant levels do not pose a threat.



## Summary of Site Risks

Available investigation data from IRP Sites 1, 2, 3, 5, 6, and 7; and results of remediation activities completed at IRP Sites 1, 6, and 7 indicate detected contaminants do not pose a risk to human health or the environment. With the exception of IRP Sites 2 and 6, the completed activities will not result in hazardous substances, pollutants, or contaminants remaining on-site above levels that allow for unlimited use and unrestricted exposure. Some soil contamination may be left in place at Sites 2 and 6 that exceed ADEQ cleanup standards, but it was determined that the residual contamination does not pose a substantial threat to human health or the environment. Therefore, a five-year review will not be required. It is the ANG's and ADEQ's current judgment that the Preferred Alternative of NFA identified in this Proposed Plan for each of the IRP sites, is appropriate to protect public health, welfare, and the environment.

## Summary of Preferred Alternative

Based on existing information and data collected for the six IRP sites, the ANG believes the Preferred Alternative of NFA for each IRP site is appropriate. The ANG expects the NFA Preferred Alternative will satisfy the following statutory requirements of CERCLA §121(b): (1) be protective of human health and the environment; (2) comply with Applicable or Relevant and Appropriate Requirements (ARARs); (3) be cost-effective; (4) utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable; and (5) satisfy the preference for treatment as a principal element.

## Regulatory Participation

The ADEQ actively participated with the ANG in evaluation of the IRP sites including discovery, investigation, applicable

monitoring and management activities, remediation at IRP Sites 1, 6, and 7, and subsequent NFA determinations for each of the IRP sites. Following ANG notification of the discovery of contamination, the ADEQ participated in the review of work plans and reports associated with the assessment and remediation activities completed. The ADEQ provided letters or other documentation concurring with the recommendation for NFA at the IRP sites. In cooperation with the ANG, the ADEQ is in mutual agreement of NFA as the Preferred Alternative for IRP Sites 1, 2, 3, 5, 6, and 7.

## Community Participation

The ANG and the ADEQ provide information to the public regarding the investigation at each of the six IRP sites and the remediation at IRP Sites 1, 6, and 7, through Information Repository files for the IRP sites. The ANG and the ADEQ encourage the public to gain an understanding of the IRP sites, and the investigation, evaluation, and remediation activities that have been conducted.

The dates for the public comment period and the location of the Information Repository files are provided on Page 1 of this Proposed Plan.

### For further information about the IRP sites, please contact:

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## Glossary of Terms

Specialized terms used in this Proposed Plan are defined below:

***Applicable or Relevant and Appropriate Requirements:*** The federal and state environmental laws that a selected remedy will meet. These requirements may vary among sites and alternatives.

***Comprehensive Environmental Response, Compensation, and Liability Act of 1980:*** The Cleanup Program focuses on human health and environmental concerns related to human health. The Cleanup Program is primarily carried out by the U. S. Environmental Protection Agency, working with the states, on sites designated for cleanup on the National Priorities List (NPL). The Cleanup Program emphasizes local source contact and prevention of further spread from sources.

***Decision Document:*** A document that provides a record of the reasons for selecting a particular alternative for a site.

***Engineering Evaluation/Cost Analysis:*** A study conducted as part of a non-time critical short-term cleanup. The EE/CA identifies the objectives of the cleanup and analyzes various cleanup alternatives in terms of cost, effectiveness, and ease of implementation.

***Groundwater:*** Underground water that fills pores in soils or openings in rocks to the point of saturation. Groundwater is often used as a source of drinking water via municipal or domestic wells.

***Information Repository.*** All documents that are considered, or relied on, in selecting the response action at a site, culminating in the Record of Decision for remedial action

or an Action Memorandum for removal actions.

***Installation Restoration Program:*** The Department of Defense program implemented at United States military bases to identify, investigate, and cleanup contamination resulting from past operations.

***JP-4:*** Jet Propulsion Fuel number 4, a gasoline-kerosene fuel historically used in military aircraft.

***No Further Action:*** A determination there are no contaminants present at the site; or that any contaminants present at the site or that have migrated from the site have been remediated in accordance with applicable remediation statutes, rules and guidance such that no further action is necessary

***Preliminary Assessment:*** The process of collecting and reviewing available information about a suspected contaminated site to determine whether the site requires further study

***Proposed Plan:*** A document that summarizes the preferred remedial action for a site and presents the rationale for the preference.

***Site Investigation:*** An investigation to confirm or deny the presence of contamination, but not necessarily delineate magnitude and extent.



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**From:**

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Place  
Stamp  
Here

**To:**  
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