NASJRB WILLOW GROVE
RAB MEETING MINUTES

Meeting Date: April 19, 2006
Meeting Time: 6:00 p.m.
Meeting Place: Horsham Township Public Library

	Name	Organization
Attendance:	Jack Dunleavy	RAB Member
	Jim Vetrini	Community Member
	John Martin	RAB Member
	Eric Lindhult	RAB Member
	George Hoffer	RAB Member
	Richard Peffal	RAB Member
	Ted Roth	RAB Member
	Kaye Maxwell Martin	RAB Member
	Stanley Allen	Community
	Tina Merl	Horsham Water and Sewer Authority
	Mike McGee	Horsham Township
	William Brown	NAS JRB Willow Grove
	Jim Edmond	NAS JRB Willow Grove
	Ellie F. Nix	USAF
	Duane Maslowski	ARS Willow Grove
	Bob Lewandowski	Navy, BRAC PMO
	Curt Frye	Navy, BRAC PMO
	Liz Gabor	BRAC
	Mary Cook	EPA
	Russ Turner	Tetra Tech NUS, Inc
	Kevin Kilmartin	Tetra Tech NUS, Inc
	Douglas Wright	INTEX
	Pat Beadling	Senator Greenleaf
	Margaret Choate	Form 1742Cad
	Pete Choate	Form 1742Cad
	Michael Scalzi	IET, Inc.
	Curt Toll	HLRA
	Joanna Furia	HLRA
	Donnamarie Davis	HLRA
	Tom Ames	HLRA

Jim Edmond opened the meeting and thanked everyone for coming, mentioning that this is the 28th RAB meeting. There will be an air show the weekend of June 17 and 18. There will be a free Doobie Brothers concert June 15th and a twilight show with fireworks June 16th. The Air Force Thunderbirds will be the big act this year. Mr. Edmond mentioned that at a past meeting, RAB members requested that the Navy provide a historical presentation of the IR (installation Restoration) program at the Air Station leading to the current status.

Mr. Edmond explained that in 1919 a private airfield was established with the intention of developing a commercial airport. In 1926, Harold Pitcairn began experimental aircraft development here. Shortly after the outbreak of World War II, in 1942 the Navy acquired and expanded the property. Many of the buildings at the Air Station today were built shortly after the original acquisition. The Air Station has been operated continuously since 1942 by the Navy under various Department of Defense missions including training of Navy and other Military pilots, and during the Cold War, Willow Grove aircraft provided protection from the threat of Soviet submarines along the eastern seaboard.

Currently, the Navy has four active IR sites in various stages of the cleanup process, with the major impact on groundwater. Groundwater contamination is prevalent throughout the Montgomery-Bucks County area. The Navy also had seven additional sites that are now considered no further action (NFA) sites. These sites were deemed not contaminated, that any contamination present was within state and Federal limitations. The Federal Facility Agreement (FFA) signed by EPA Region 3, PADEP and the Navy is the document that outlines what the Navy does to meet state and Federal regulations as well as Navy guidelines.

Using a map of the Air Station, Mr. Edmond, mentioned that the U.S. Air Force Reserve sites, located on the Air Force property, are separate from the Navy property sites and will be discussed at the next RAB meeting. This RAB meeting was just for Navy and Navy sites.

Pointing to the projected map, Mr. Edmond gave an overview of the Navy's site locations. There are four main IR program sites at NAS JRB Willow Grove; the Privet Road Compound, NAS 1; the Antenna Field Landfill, Site 2; the Ninth Street Landfill, Site 3; and the former Fire Training Area, Site 5. In addition, there are several sites recommended for NFA, which are Sites 4, 6, 7, 8, and 9; one site, the Navy Fuel Farm (Site 10) that has been remediated; and one site, the "aircraft defueling area" ("Site 11") that was a potential site that never officially was added to the program because the limited contamination found there was removed. Mr. Edmond presented a brief history and summary of conditions at each site (see the attached slide presentation for details), starting with Site 1, the Privet Road Compound site.

> A RAB Member asked the purpose of the two new wells (installed in 2006) at Site 1. Are they drinking water wells or remediation wells? Mr. Edmond explained that these new monitoring wells (actually three wells installed in two boreholes) were placed either side of the main gate as part of an investigation that has concluded that the source of groundwater contamination in that area (including Privet Road Compound area groundwater) is not from the Navy. EPA and PADEP agree with that conclusion. The groundwater contamination is from an off-Base source on the other side of Route 611. EPA and PADEP are opening up old files to reconsider potential historical source areas upgradient of the Air Station.

NAS Site 2, also known as the Antenna Field landfill, is located near the southwest corner of the Air Station and served as a landfill for several years from 1948 through 1960. The area is covered by an antenna array presently and is readily visible from off Base on Horsham Road. A series of investigations here is nearing completion with a NFA decision anticipated.

NAS Site 3, the Ninth Street landfill, is located on the western border of the Air Station and accepted waste from 1960 through 1967. The area is located between the U.S. Army Reserve facility and the off-Base golf course. Groundwater investigations show chlorinated contaminants, but the Ninth Street Landfill does not appear to be the source. Investigations are ongoing for a potential groundwater contamination source to the south of this site.

Site 4 was the North End Landfill used from 1967 to 1969 to accept overflow solid waste in excess of what could be handled elsewhere. Investigation found no contamination linked to the site, so it is classified as a NFA site.

Mr. Edmond mentioned that Site 5, the former fire training area used by the Air Station fire fighting company for training exercises, is the area of greatest concern for the community. Flammable materials were stored, dumped and ignited at the site and have contaminated the groundwater. A "Burn Ring," that was actually a partially buried tank with an intact bottom, but no top, was the place where solvents were poured and ignited. It is thought that the intact Burn Ring tank bottom saved the environment from more serious damage. Site 5 was used for fire fighting exercises from 1942 through 1975. It is thought that these exercises were the primary method of disposing flammable waste generated by the Air Station at that time. Over the past several years the Navy has concentrated a larger portion of the IR program budget on this site, responding to concerns of the RAB. A Feasibility Study (FS) was prepared in 2002 but was revised to include biological and chemical remediation alternatives at the request of RAB member comments.

A RAB Member asked if a field pilot study using biological or chemical remediation technologies was performed. Mr. Edmond explained that the draft FS currently under review and revision among the Navy, PADEP and EPA includes consideration of available technology that is pertinent for treating those compounds. Field pilot studies (if needed) will be performed after a Remedial Alternative is selected from the FS and approved.

Additional sampling of Site 5 soil and groundwater was completed in 2004 and 2005 to support the FS and to ensure that the solvent contamination plume is not moving closer to the Air Station fence line (potentially toward public water supply wells). The latest sampling and analysis confirms that the plume extends northwest from the source area toward the Army Reserve Center (and toward Site 3) on the Air Station, not toward the fence line. Also, there is a groundwater divide in the area, resulting in a flat groundwater surface that results in slow lateral groundwater movement. It is thought by the Navy hydro geologists, that the plume is in "steady state" (that is, not growing in lateral extent and actually diminishing in magnitude (overall concentration)) with the final extent of plume edge migration approximately between the Army Reserve truck maintenance shed and Hangar (on Navy property).

Mr. Edmond mentioned that he and Jack Dunleavy (RAB member and former Navy Facilities Engineering employee) sampled private wells, used for drinking or irrigation, along Horsham Road to test for Site 5 contaminants. None were found.

Site 6 was the former Abandoned Rifle Range that is now covered by the building used as the U.S. Marine Corps Reserve Center, built approximately 6 years ago.

Site 7 is the Rifle Range Number 2 used from 1965 to 1977. Based on investigations, this site is classified as NFA.

Site 8 was a fuel oil tank that overflowed. The tank was subsequently removed along with contaminated soil in 1980 and is now classified as NFA in agreement with PADEP.

Site 9 is located adjacent to the NAS JRB Willow Grove steam plant. There were several underground storage tanks (USTs). All of the USTs were removed in 1998 along with soil contaminated from tank overfill or spills.

Site 10, the Navy Fuel Farm was originally included in the listing for the NPL (Superfund), but was removed because this site was more appropriately governed under RCRA (Resource Conservation and Recovery Act), the federal regulations that govern environmental impact aspects of current industrial/commercial concerns. In Pennsylvania, the RCRA program is managed by the state government (PADEP). There was a history of fuel, oil and diesel spills from USTs at the former fuel farm.

A RAB Member asked how the Navy replenished the fuel when they pumped it into the tanks. Was there a pipeline (from off Base)? Mr. Edmond explained that tanker trucks of fuel, oil or diesel would come on Base and fill the tanks when they were low. There was no pipeline.

All tanks at the Navy Fuel Farm were removed in 1991. The soil was remediated at that time. The Navy installed a groundwater treatment system to remove petroleum under PADEP's underground storage tank program. The final report of that phase of groundwater remediation was issued in 1996. In 1998, a light nonaqueous phase liquid (LNAPL) recovery system was installed to remediate residual petroleum compounds, and continued in operation until 2003. The LNAPL recovery system was discontinued in agreement with PADEP when LNAPL recovery diminished to nothing. The Navy performed a final remedial investigation consisting of soil and groundwater samples in agreement with EPA and PADEP, culminating in a request for NFA status to PADEP in 2003. PADEP concurred, issuing a letter in October, 2004 stating that no further remedial action or investigation was required at this time, noting that groundwater however, did not meet criteria for unrestricted use. If land use were to change, the Navy (or other current owner) may be required to seek closure under Pennsylvania Act 2 regulations. That PADEP stipulation still exists today.

Mr. Edmond explained that the "Site 11" was never a formal NPL site. When the Air National Guard was preparing to construct new buildings near the northeastern corner of the runway aircraft apron, excavations to reconfigure a storm water swale and place building footers uncovered what appeared to be petroleum product. Discussions with former employees indicated that this was a location where aircraft were defueld historically. Contaminated soil was removed and disposed off-site during construction. Confirmation sampling, to document that all contaminants were removed, was performed in 2002. Between 2003 and 2004, the Navy performed additional groundwater and soil samples to satisfy PADEP Act 2 requirements. PADEP concurred with the Navy request for NFA status based on the March 2004 results of groundwater and soil samples submitted by the Navy. Since this "site" never met the criteria for either the IR or PADEP UST program, it was never listed officially as an IR site.

Mr. Edmond next discussed the series of investigations performed by the Navy in cooperation with EPA and PADEP that began with the Preliminary Assessment (PA) of the entire Air Station in 1985. The PA was the event where a team of environmental professionals came to look at the entire Base, reviewing all records, interviewing current and past employees, obtaining all information available to set the foundation for the IR program that evolved until today and defined the sites. NAS JRB Willow Grove was added to the NPL in October 1995. EPA defined the NPL "Site" as all of the land within the fence line owned by the Department of Defense (DoD). Both Navy and Air Force Reserve portions are included in the NPL designation as one "Site." Knowing what we know now, that Site 10 is a PADEP Act 2 UST site, and that Site 1 groundwater contamination is from an off-Base source, the Base probably never would have been added to the NPL.

As of the date of this meeting, the Navy has spent approximately $7 million on the Navy's IR program. Completion is projected for approximately 2011. Sites 3 and 5 are the two sites with significant concerns remaining.

This Restoration Advisory Board (RAB) was initiated as required by Congress and DoD regulations in 1996. Today's meeting was the 28th RAB meeting to discuss environmental issues with the public. All early RAB meetings were held in Building 1 at the Air Station. The first meeting off-Station was held September 14, 2005, responding to security concerns and more cumbersome Base security access requirements after September 11, 2001. RAB Co-Chairpersons are Commander William Shannon Brown for the Navy, and Ms. Liz Gimmel representing the public since the inception of the RAB in 1996.

> A RAB Member asked what would you say is the worst spot on Base, Air Force and Navy, is? Mr. Edmond could not speak for the Air Force, but for the Navy it is the Site 5 groundwater contamination, because it is tough to deal with and because the RAB has consistently listed Site 5 as the primary area of concern. There is a Feasibility Study (FS) prepared and under review by the Navy, PADEP and EPA that includes a remedial alternative to put bugs in the ground with some kind of nutrient to promote self degradation of the VOCs. This is not like a groundwater pump-and-treat system where groundwater is treated through a carbon filter or taken off-Station for treatment. You won't be able to see the remediation taking place. The bugs will be provided with nourishment in place, and they will do their thing consuming the VOC contamination. When the bugs run out of VOC to eat, they die off, leaving the system back to nature.
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> A RAB Member asked if the Site 5 solvent plume would reach any present public water supply wells and mentioned that the ideal situation is to avoid the need to (air) strip the water supply. Could the remediation potentially take place before 2011, that is, can remediation pull the plume back and treat in the next five years? Mr. Edmond explained that the proposed remediation would not be "pulling the plume back." Remediation would decrease the magnitude of the plume by decreasing the average concentration over the whole plume area. The plume is not thought to be "growing" laterally at present. The downgradient lateral limit is approximately in the vicinity between the Army Reserve Truck Maintenance Shed and the Army Reserve Hangar – all well within (beneath) Navy property. Hydrogeologists describe the plume as "steady state," not growing or shrinking with respect to over all extent. By treating the "source area" ---that is not a heavily concentrated source --- there won't be any impetus for the plume to continue moving

laterally and the average concentration of the existing solvent plume in groundwater (plume magnitude) will decrease and eventually dissipate.

A RAB Member suggested that the question is, will remediation be all over by 2011(?) and the answer to that is no, but there will be something in process by 2011. It might have to run 10 or 15 years or how long it would have to run would be unknown. It has to be monitored. Another RAB Member asked then if the process of cleanup would only begin by 2011. Mr. Turner explained that the FS, currently under review by Navy, PADEP and EPA is progressing, but there are questions to be answered in that process. One of the Remedial Alternatives being considered indicates that bioremediation of the groundwater plume near Site the 5 source area (near the historical drum storage area) can be accomplished in a couple of years using current technology, but that the technology will only reduce the concentrations to a certain level, after which treatment would stop, leaving nature to take over from there. Under this scenario, all of the VOC would not disappear until some longer period of time, but what is feasible to do would be completed in a fairly short period of time. A RAB Member asked if that period was within our lifetimes. Mr. Turner replied that it would be within this decade.

A RAB Member asked if the Site 5 groundwater FS also is evaluating ISCO or sulfate? Why not ISCO, which is generally faster than bio? Mr. Turner mentioned that strong chemical oxidant technology is being evaluated equally. There are actually five, maybe seven remedial alternatives including the sub-alternatives, being considered. Strong chemical oxidant is considered in there. The FS process follows the EPA guidelines and a variety of alternatives are required.

A RAB Member asked if you aren't basically dealing with all diminishing returns. As you keep getting the concentration down and down, it gets harder and harder and takes longer and longer to achieve, if ever zero? Mr. Turner agreed. There are limits to each of the technologies. Once you get to a fairly low level, groundwater concentrations may still be in the vicinity of MCL's near the source, there's nothing more that can be done with that technology. (In this case, a Proposed Remedial Action Plan including land use controls and long-term monitoring would ensure that human and ecological receptors remain protected.)

A RAB Member asked if the expectation of the level of cleanup is to industrial standards? Mr. Edmond anticipates that BRAC (Base Realignment and Closure) cleanup requirements, in the environmental section of the BRAC law will require cleanup to the level consistent with current use and asked Bob Lewandowski of the BRAC PMO (Program Management Office) if that is correct. Mr. Lewandowski confirmed that that is basically correct. Mr. Lewandowski provided copies of the environmental section of the BRRM (Base Redevelopment and Realignment Manual). The entire Manual is available on-line (the web site address is included in the attached slides from the RAB presentation). What the BRRM says is that historically, remedy selection based on current or historic use helps speed cleanup and redevelopment. It suggests that a new owner or LRA (Land Reuse Authority) planning how to redevelop BRAC properties may benefit from these concepts. Response actions at levels to support less restricted use of the property (e.g., residential development versus historical industrial or commercial use) are a business decision normally to be made by the new owner of the property, realizing that cleanup costs associated with the less restrictive property use may be borne by the new owner as part of the redevelopment of the property for new uses. This approach is a little different from the original BRAC about ten years ago.

A RAB Member asked when does that cost shift occur? Mr. Lewandowski replied that as Jim Edmond was saying, the concept is that if the property would remain as, let's say an air field or an industrial type reuse, the Navy would clean up to those levels. A RAB Member suggested then that the "key toss" (a developer's decision to make a change in land use) would trigger the cost shift. Mr. Lewandowski agreed. If a developer comes in and says "I know that this is an industrial type property historically, but we really think it would be great to put 300 houses in here," and the developer decides it is worth their bother and expense to perform cleanup down to

that less restrictive level, then that would be a business decision the new property owner would make. A RAB Member asked if they (the new property owner) can require the Township to effect the cleanup? Mr. Lewandowski replied that no, they would do that cleanup on their own using their own dollars, because perhaps the developer can make more profit on it by making the development more attractive and receiving a better return from the property by doing that. A RAB Member asked if the (Site 5) plume would be on Army property? Mr. Edmond explained that for those on the tour earlier, the land the Army is considering retaining may include 90% or more of the land above the Site 5 groundwater plume, depending on how far they go. Mr. Turner mentioned that if the Army retains all of the land up to the current estimated extent of the Site 5 plume, in the vicinity between the Army Reserve Hangar and the Army Reserve Truck maintenance shed, then DoD would retain 100% of the Site 5 plume. A RAB Member asked if the Navy disclosed that to the Army? Mr. Edmond explained that the Navy would not give away the responsibility for the cleanup; it would probably remain with the Navy. Since there were no further questions from the RAB on this portion of the Navy's presentation, Mr. Edmond handed the meeting over to Bob Lewandowski.

Mr. Lewandowski introduced himself as the BRAC Environmental Coordinator in the Navy BRAC Program Management Office. LRA members have probably met the BRAC PMO NE Director David Drozd and his Deputy, Greg Preston, who is also the BRAC PMO NE Base Closure Manager. Referring to Chapter 8 of the BRRM distributed earlier, Mr. Lewandowski mentioned that this guidance document went through a review and comment process and was just finalized in March. This guidance supersedes previous guidance from back in 1997 and there are changes to help spur the redevelopment of the property. The biggest change is probably the issue of changes from historical property reuse that we discussed earlier. At times in the past, some of the (cleanup) things that people were asking for were pretty impossible and delayed the process. It would have been better to work together, plan ahead and look at the best land use options of a particular property while considering cleaning it up to a level consistent with the current (historical) land use. So the DoD is saying these concepts are not revolutionary, they are evolutionary; they have been around for years.

Navy BRAC implementation guidance will also be coming out soon, maybe as early as next month. What usually happens with Department of Defense guidance is that DoD puts out guidance that says what will be done, then each of the Services, Army, Navy and Air Force, come out with their own guidance that says how that Service will implement what DoD has mandated. Hopefully, by the next RAB meeting, we'll have copies of the Navy guidance to hand out.

If you look at the Chapter 8 guidance distributed, you may notice that the environmental process can be broken down to into three major areas. There is remediation which is what Jim Edmond has been talking about tonight, the 11 sites here, past areas where something has been spilled, buried or burned; some sort of uncontrolled release into the environment. Disposition and cleanup of these sites is one area the Navy will focus on. Then another area to focus on is "compliance" issues. There are two types of compliance. There is ongoing compliance with state and Federal regulations the Air Station staff continues to monitor. The Base must remain in compliance with environmental statutes during the closure process. Another type of compliance issue is the series of one-time compliance events as the Base prepares for closure. Something like the sewage treatment plant for instance will have to be cleaned up if it is not going to be reused, fuel tanks would have to be emptied, purged and cleaned; there will be a number of these one-time compliance items. The third major environmental area you will hear about is the NEPA, the National Environmental Policy Act, which deals with reuse of the Base and the impacts of that reuse on the surrounding community and the environment. The NEPA evaluation will be based on the community's LRA reuse plan as the most likely reuse scenario.

So that was a quick overview and introduction of what we will be working on together for a number of years here to work through this process. There will be a lot of opportunities to discuss the details of these issues to get community input as the Base, working with the BRAC Program Management Office works to get this Base cleaned up and turned over to the community for redevelopment. So thanks very much.

Mr.Edmond added that he has been working with Bob Lewandowski to prepare the "Environmental Condition of Property" report. Mr. Lewandowski added that the report is referenced in the guidance handed out earlier. The report considers all of the different environmental laws and statutes that apply to the Navy activity and considers the work that's been done to fulfill the Navy's responsibilities under those environmental laws and statutes. The report summarizes and references the larger documents prepared by the Navy over the years in this process. The Navy didn't want to create a volume too big to handle that wouldn't be practical, but all of those other documents referenced are available. This is sort of like the "Cliff Notes" version of the environmental condition of the property.

Mr. Edmond next provided updates on environmental projects mentioned at the last RAB meeting.

The Soil removal action at Site 5 is still underway. Curt Frye of the BRAC PMO office is working on a contract modification to have an additional two feet of soil removed from the existing excavation area, to be followed by another round of confirmation sampling and analysis to confirm achievement of cleanup levels.

A RAB Member asked if the Navy could give the dimensions of the soil removal area shown on the projected slide, and also how many cubic yards were removed? Mr. Turner estimated the circular portion of the "spoon" to be about 30 feet in diameter and the excavation is about 100 feet from end to end. The total volume removed was about 200 cubic yards. Mr. Frye estimated that the Navy expects to essentially double the volume removed for a total of 400 cubic yards.

Using a projected slide of Site 1 and the surrounding area, Mr. Edmond gave a short background information summary of the Site 1 groundwater investigation in the area. Results of groundwater testing of samples obtained from the new wells installed at the Navy property line have convinced PADEP and EPA that Site 1 is not the source of contamination. The contamination is coming onto Navy property from a potential source off of Navy property across Route 611 from the Base. PADEP and EPA are in the process of reinstituting an investigation to figure out what potential historical source area along Route 611 could be the source of that contamination.

A RAB Member remarked that the Navy seemed pretty sure of that (off-Base source) by the way the plume flowed (as described by the Navy in previous RAB meetings). Mr. Edmond agreed, but added that it had to be proven beyond doubt.

There was nothing new to add about the Site 1 Soil Proposed Remedial Action Plan (PRAP) and Record of Decision (ROD) status.

The last item to discuss is related to three investigation items that are overlapping. Using a projected map, Mr. Edmond pointed out the locations of Site 3 - the Ninth Street Landfill, Horsham Road, the Army Reserve Hangar and Motor Pool truck maintenance shed, and IR Site 5 – the Fire Training Area. These features are all lined up next to one another along Horsham Road on the southwestern portion of the Navy property, with the Army Reserve facility being between Site 3 and Site 5. The Navy is investigating the potential source of the Site 3 groundwater plume that appears to be in the vicinity a little south of the Army Reserve Hangar; slightly upgradient. The Site 5 plume downgradient edge falls approximately in the same vicinity, a little north of the Army Reserve Motor Pool truck maintenance shed. However, the Site 5 plume is deep in this area, and the contaminants making up the Site 3 plume and the Site 5 plume are different so it is not thought that Site 5 can be the source of the Site 3 plume the Navy is looking for. Also, previous investigations of the Ninth street landfill soils/contents have not uncovered the compounds found in the groundwater beneath the site. Findings are not consistent. So Jim Edmond and a Tetra Tech environmental engineer performed a desktop investigation, researching all available records pertaining to the Army Reserve Facility, performed walk-through inspections of the Army Reserve buildings (Hangar, Admin Building and Motor Pool truck maintenance shed), looked at the storm water and sewage lines, and the history of spills or any other reports that could be found. The preliminary conclusion of this effort was that the Site 3 groundwater contamination is not from the Ninth Street Landfill and is not from Site 5 – the Fire Training Area, but it may have emanated from the Army Reserve Hangar area itself. The probable scenario has to do with the Army UH1H (Huey) helicopters based here some

number of years ago. These helicopters were Vietnam era aircraft that are now out of commission. Huey's were notorious leakers that required a lot of maintenance, including degreasing and washing. Some of these fluids may have entered the Hangar floor trough drain that flowed to an oil water separator near the southeast corner of the Hangar. The Army Reserve Hangar area, particularly that oil/water separator area, is being investigated further.

There were no questions at this time regarding the Site 3 groundwater contamination source investigation, so Mr. Edmond asked if there were any remaining general questions or observations.

A RAB Member asked how to find this place (the Horsham Township Library) economically. He and his partner spent a lot of time bucking commuter traffic. Is there a better way to get here? Is there a place we could go (meet) where the traffic is more like it was on Route 611? We could buzz down there and that was it (less traffic). Mr. Edmond mentioned that the Township is working with PennDOT on the Horsham Road widening project that should be done soon. That should be done by the next meeting. A RAB Member opined that if "they" put houses on the site (the Air Station), then you will have to leave the day before (the meeting) to get here and stay overnight; traffic is horrible. But what he wanted to know is, if there will be any environmental impact if the runway is removed? Mr. Edmond replied that there are no environmental issues with the runway itself. Any spills have been contained and cleaned. Only the groundhogs out there will be an environmental issue. The runway itself has been resurfaced a number of times. The Township manager Mike McGee mentioned earlier today that there are people who would love to chop up the runway and use it as recycled material, so disposal of the runway would not be a difficult issue. A RAB Member reflected that he hasn't heard anything about deicing fluids. Is there a concern with that? Mr. Edmond replied that aircraft de-icing is performed in an area designed to capture the fluids back in a tank. In the past, sometimes the de-icing fluids went to the sanitary sewer system, but now the operation is performed on the "wash-rack" facility that automatically collects the fluids into a tank.

A RAB Member congratulated the Navy on a nice job on the history summary and asked if the "history document" could be kept up as a dynamic historical document. Mr. Edmond replied that the process continues. The Navy has four active sites and wants to inactivate them as soon as FS, PRAP and RODs can be finalized. In this process, the RAB will be kept up to date by these meetings. Some time in the future, this presentation can be updated and presented again if new RAB members and other interested parties begin to attend.

The Next RAB meeting is tentatively scheduled for July 19, 2006. The meeting place will be the Horsham Township Library, 435 Babylon Road, Horsham, PA 19044 (phone: 215-443-2609).

A RAB Member asked if the Air Force would present their history at the next RAB meeting? Mr. Edmond replied that the Air Force will present their history and the Navy will supply updates for whatever happens between today and the 19th of July; hopefully, status of the Site 1 soil ROD, what's happening at the Army Reserve Hangar, and the final soil removal at Site 5.

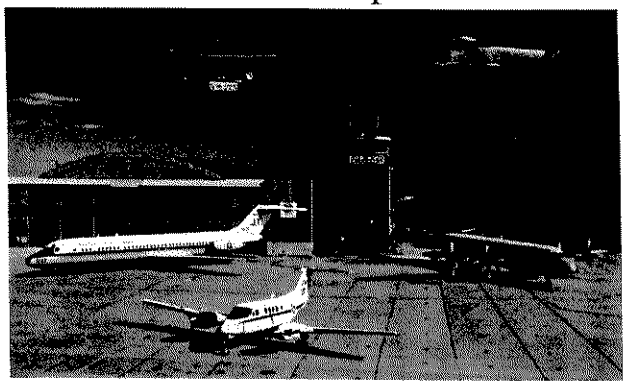
Mr. Edmond thanked everyone for coming, being attentive, hoped everyone enjoys the summer, and reminded all to remember the Air Show is coming.

PRESENTATION SLIDES

NAS JRB WILLOW GROVE
RESTORATION ADVISORY BOARD
MEETING – APRIL 2006

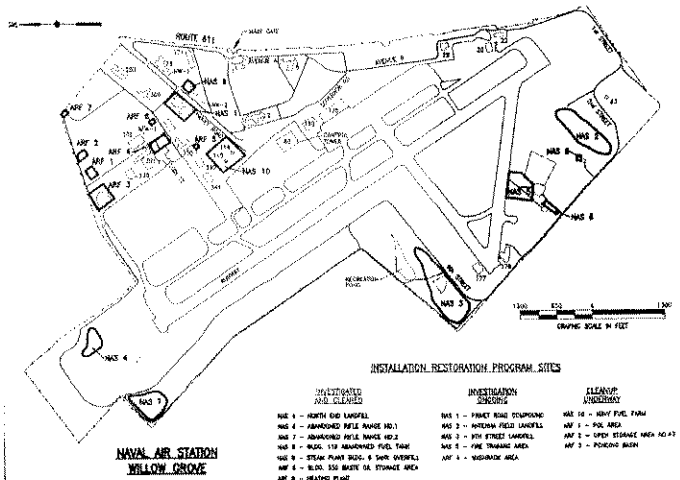
INSTALLATION RESTORATION (IR) PROGRAM HISTORY

NAS JRB Willow Grove Historical Perspective

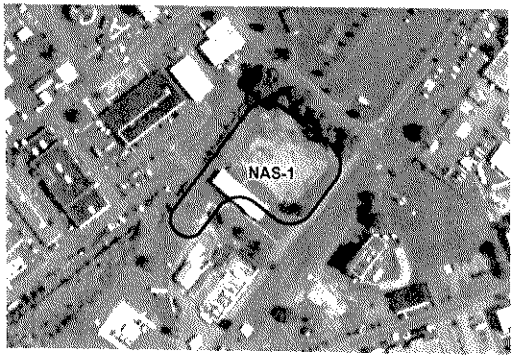


Installation Restoration Sites

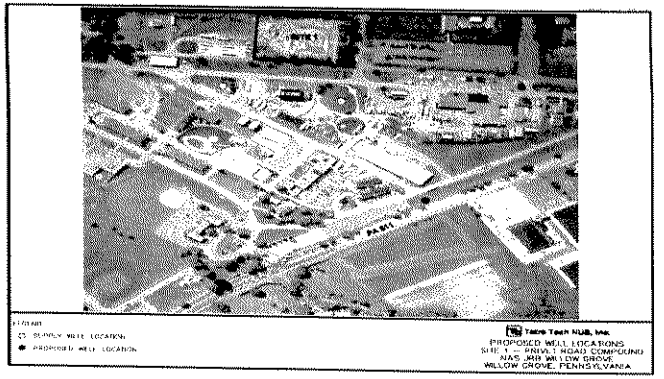
- Navy has four active sites in various stages of the clean up process. Major impact at all sites is ground water contamination.
- Navy has an additional seven sites that are considered to require No Further Action.
- Federal Facility Agreement (FFA) is in place.



Willow Grove IRP – NAS Site #1
Privet Road Compound



Installation Restoration Site #1



Installation Restoration Site #1

- Navy Site #1 Privet Road Compound is an area that was used as a trash transfer facility. It was in service from 1967 to 1975.
- General waste was stored there before being removed off station. The area was also used to burn an appreciable amount of trash. Old electrical transformers were also stored there.

Installation Restoration Site #1

- Contaminants include Volatile Organic Compounds (VOCs), Pesticides and PCBs.
- Ground water and soils were impacted.
- A Site Investigation (SI) was completed in 1990 (EA) and a Remedial Investigation (RI) was completed in 1993 (Phase I) and 1998 (Phase II) both by TtNUS. Approximately 22 monitoring wells were installed to test ground water.

Installation Restoration Site #1

- The Navy has completed extensive analysis of monitoring wells, our two drinking water wells, and is in the process of evaluating two additional wells recently installed near the Easton Rd. fence line.
- Our investigations of Navy Site #1, Privet Road Compound, have concluded that groundwater contamination is coming from an off-Station source.

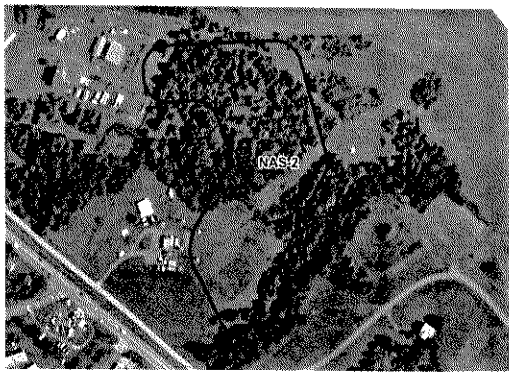
Installation Restoration Site #1

- PCB laden soils, from overturned transformers, were removed in 1999. Navy is presently developing a Record of Decision (ROD) for soils.
- PCB soils were cleaned up to "residential" standards.

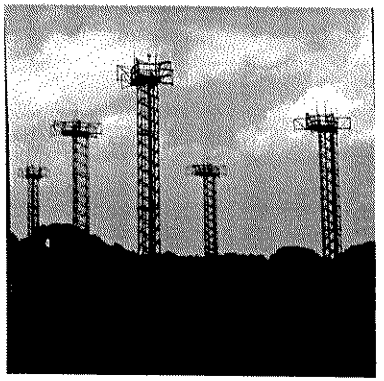
Installation Restoration Site #1

- Site #1 soils No Further Action Record of Decision is being developed.
- If EPA/PADEP agree with our ground water assumptions, this site would be No Further Action for groundwater also.

Willow Grove IRP – NAS Site #2
Antenna Field Landfill



Installation Restoration Site #2



Installation Restoration Site #2

- Site #2, the Antenna Field Landfill was used as a landfill for solid waste from 1948-1960. Trash was burned then buried.
- Site #2, the Antenna Field Landfill contaminant of concern is pesticides.
- Ground water, surface water and soils where impacted.

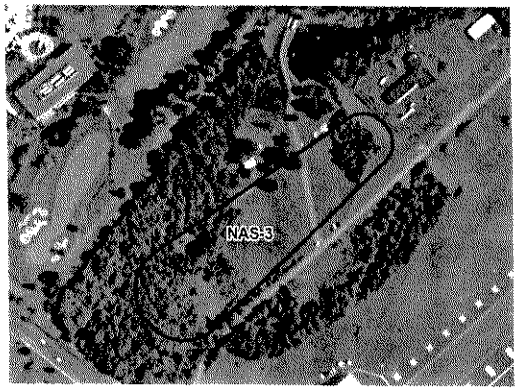
Installation Restoration Site #2

- A Site Investigation (SI) was completed in 1990 by EA Engineering and a Phase I (1993) and Phase II Remedial investigation (RI) was completed in 1998. Monitoring wells were installed to test ground water. Soil samples were taken and analyzed.
- A Technical Memorandum of Risk Assessment Evaluation (updating human/ecological risk) was completed in 2005.

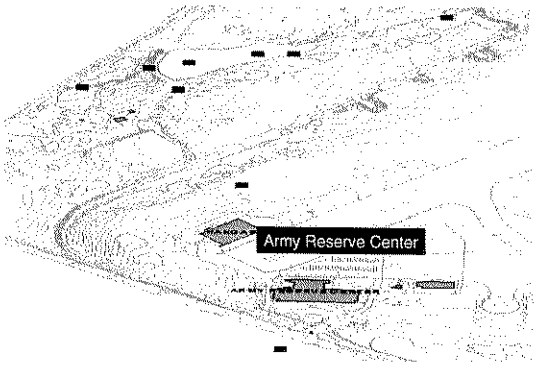
Installation Restoration Site #2

- Site #2, Antenna Field Landfill is in the process of having the Remedial Investigation report finalized.
- The Navy is going to propose No Further Action at this site. With EPA/PADEP concurrence, a Record of Decision will be developed.
- Approximate time-line 1-2 years, if EPA/PADEP agree.

Willow Grove IRP – NAS Site #3
9th Street Landfill



Installation Restoration Site #3



Installation Restoration Site #3

- Site #3, 9th Street Landfill was used as a landfill for solid waste from 1948-1960. Trash was burned then buried.
- Contaminants include Volatile Organic Compounds (VOCs) and Pesticides.
- Ground water, surface water and soils where impacted.

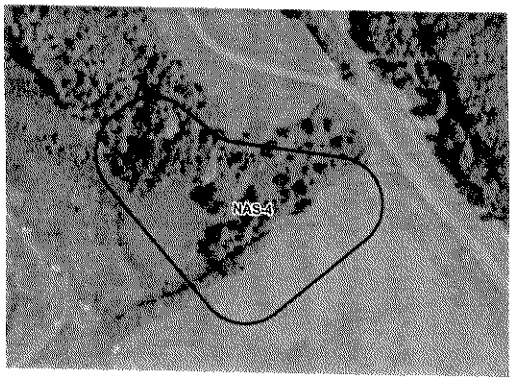
Installation Restoration Site #3

- A Site Investigation (SI) was completed in 1990 by EA Engineering and a Remedial investigation (RI) was completed in 1993 by Brown & Root. Monitoring wells were installed to test ground water. Soil samples were taken and analyzed. A Phase II RI report was completed in 1998.
- These investigations have determined the landfill is not the source of the groundwater contamination.

Installation Restoration Site #3

- Site #3, 9th Street Landfill is undergoing additional work to determine whether the groundwater contamination is from an up gradient source source.
- EPA requested additional monitoring wells to clarify source of groundwater contamination. These additional wells were installed in the fall of 2005.
- No time-line for completion of work at this time.

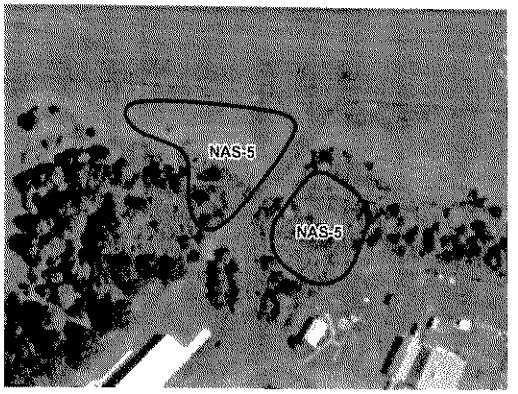
Willow Grove IRP – NAS Site #4
North End Landfill



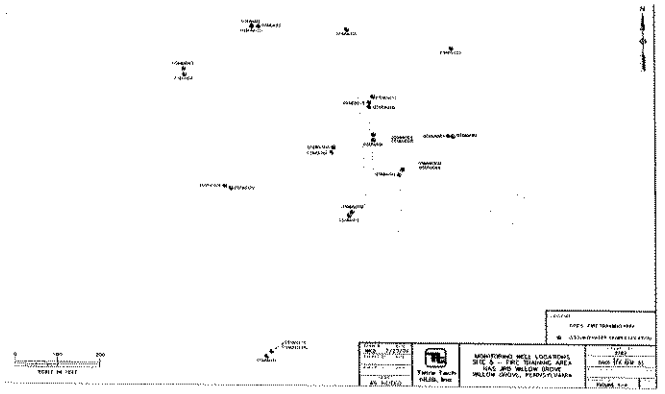
Installation Restoration Site #4

- Site #4, the North End Landfill was used from 1967-1969 as a landfill to accept overflow solid waste.
- The Site Investigation (SI) of 1990 found no contamination linked to this site, so the Navy has classified this as a No Further Action site.
- PADEP has concurred with this decision.

Willow Grove IRP – NAS Site #5
Fire Training Area



Installation Restoration Site #5



Installation Restoration Site #5

- Site #5, the Fire Training Area was used for fire fighting exercises from 1942-1975.
- These exercises were the prime method of disposing of flammable liquid waste generated by the Air Station.
- It is estimated that various solvents, paint products, and other flammables were consumed at the rate of 4,000 gals a year.

Installation Restoration Site #5

- A Site Investigation (SI) was completed in 1990 by EA Engineering and a Remediation investigation (RI) was completed in 1993 by Brown & Root. Monitoring wells were installed to test ground water. Soil samples were taken and analyzed. A Phase II RI was completed in 1998. The "Final" Phase II RI report was completed in 2002 by Tetra Tech.

Installation Restoration Site #5

- Site #5, was selected by the RAB as the area that the community would like to see get immediate action.
- A Feasibility Study (FS) was completed in 2002 but modified in 2004 to include comments by RAB i.e., adding biological and chemical remediation. This has been forwarded to PADEP & EPA for comment.

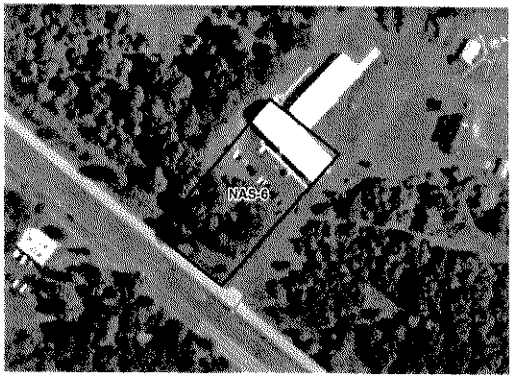
Installation Restoration Site #5

- Additional sampling of soils and ground water was completed in 2004 & 2005. The results were then evaluated and an addendum to the Final RI was issued for both soils and ground water.
- The results from these latest sampling events confirm previous assumptions on the content, movement and direction of ground water plume.

Installation Restoration Site #5

- Soil removal took place in September-October 05 timeframe at Site #5-Fire Training Area. Sampling of soils was taken. Once analytical data is evaluated a Record of Decision for soil will be developed for a No Further Action decision.
- Additional analytical work being completed this summer at Site #5 to determine appropriate remediation for groundwater.
- No time-line for completion at this time.

Willow Grove IRP – NAS Site #6
Abandoned Rifle Range No. 01



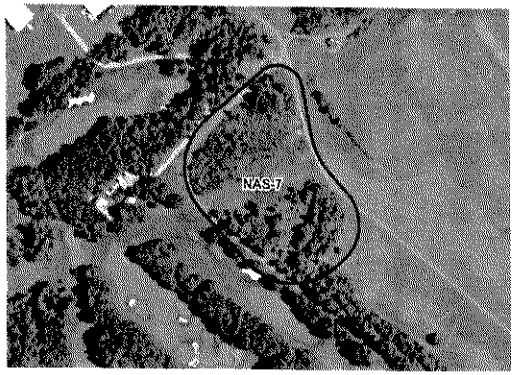
Site #6 Abandoned Rifle Range #1

- Site #6, Abandoned Rifle Range #1 was rifle range used from 1942-1965.
- The Preliminary Assessment (PA) completed in 1985 by the Navy and an Extended Sites Investigation (ESI) was completed by EA Engineering in 1991.

Site #6 Abandoned Rifle Range #1

- Results of the ESI show that there was no human or ecological health risk.
- The Navy has classified this as a No Further Action site.
- PADEP has concurred with this decision.
- A Marine Corps Reserve facility now resides overtop of the site.

Willow Grove IRP – NAS Site #7
Abandoned Rifle Range No. 02



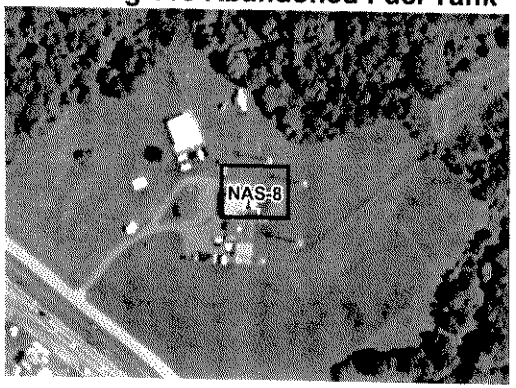
Site #7 Abandoned Rifle Range #2

- Site #7, Abandoned Rifle Range #2 was rifle range used from 1965-1977.
- The Preliminary Assessment (PA) completed in 1985 by the Navy and an Extended Sites Investigation (ESI) was completed by EA Engineering in 1991.

Site #7 Abandoned Rifle Range #2

- Results of the SI/ESI show that there was no human or ecological health risk.
- The Navy has classified this as a No Further Action site.
- PADEP has concurred with this decision

Willow Grove IRP – NAS Site #8
Building 118 Abandoned Fuel Tank



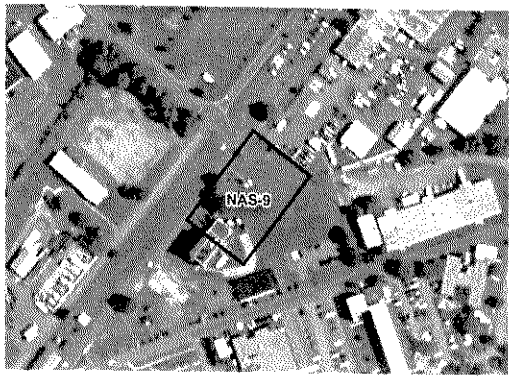
Site #8 Bldg. #118-Abandoned Fuel Tank

- Site #8, an abandoned fuel tank approx. 500 feet from building #118, Ground Electronics Maintenance. The tank held #2 heating fuel from 1959-1980, when it was abandoned in place.
- The tank and adjacent contaminated soils were removed in 1980.

Site #8 Bldg. #118-Abandoned Fuel Tank

- The Preliminary Assessment (PA) completed in 1985 by the Navy, Site Investigation in 1990 and the Extended Sites Investigation (ESI) was completed by EA Engineering in 1991.
- Results of the SI/ESI show that there was no human or ecological health risk.
- The Navy has classified this as a No Further Action site.
- PADEP has concurred with this decision

Willow Grove IRP – NAS Site #9
Building 6 Steam Plant Tank Overfill



Site # 9 Bldg. #6 Tank Overflow

- Site #9, is a result of the over filling of underground storage tanks at Building #6, the Steam Plant.
- Between 3,000 to 5,000 gals of #2 fuel oil was spilled thru a vent pipe. The air station HazMat team responded immediately and minimized spill.

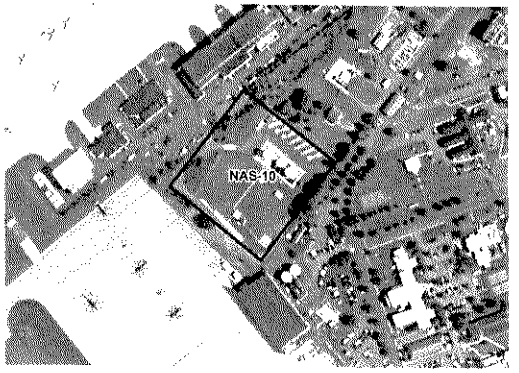
Site # 9 Bldg. #6 Tank Overflow

- The Preliminary Assessment (PA) completed in 1985 by the Navy, Site Investigation in 1990 and the Extended Sites Investigation (ESI) was completed by EA Engineering in 1991.
- All underground storage tanks associated with building #6, were removed in 1998. All contaminated soils were also removed and disposed of.

Site # 9 Bldg. #6 Tank Overflow

- Results of the SI/ESI show that there was no human or ecological health risk.
- The Navy has classified this as a No Further Action site.
- PADEP has concurred with this decision.

Willow Grove IRP – NAS Site #10
Navy Fuel Farm



Installation Restoration Site #10

- Navy Site #10, Navy Fuel Farm formerly was the location of two partially buried 210,000 gal fuel tanks. The fuel was JP-4/JP-5 used for aircraft. There were also two smaller underground storage tanks. One was used for diesel fuel, the other was used for waste oil. There was a history of spills and over fillings at the fuel farm.

Installation Restoration Site #10

- All tanks at Navy Fuel Farm were removed in 1991. Soils were remediated but product was found in ground water.
- In 1995, the Navy installed a pilot system to remove petroleum per PADEP Under Ground Storage Tank (PADEP ACT 2) program. A final report on the pilot study was issued in 1996.

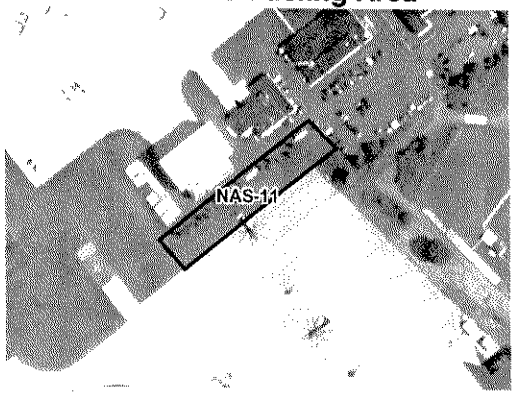
Installation Restoration Site #10

- In 1998, a light non-aqueous phase liquid (LNAPL) recovery system was installed and continued till 2003. It was discontinued due to no additional LNAPL being recovered.
- A final Remedial Investigation (RI) was submitted in December of 2003, to support a No Further Action decision.

Installation Restoration Site #10

- September 2004 the Navy submitted No Further Action Request to PADEP
- PADEP concurred with the Navy that no further remedial action or investigation was required at that time.
- PADEP letter dated October 2004, noted that ground water and soil at the Site did not meet criteria for unrestricted use. If land use changes, the Navy may be required to seek full closure under ACT 2 regulations.

Willow Grove IRP – NAS Site #11
Aircraft De-Fueling Area



Installation Restoration Site #11

- Navy Site #11, Aircraft De-Fueling Area was listed as a "potential" site.
- The site was discovered when the PAANG was constructing a new building near the eastern corner of the Navy's aircraft apron.
- Discussions with former employees indicated this was a location where aircraft were de-fueled.

Installation Restoration Site #11

- Soils were removed and disposed of during construction.
- Confirmation sampling in 1992 was completed to confirm that all contaminants were removed.
- Between 2003-2004 the Navy did additional groundwater and soil samples to satisfy PADEP ACT 2 requirements.

Installation Restoration Site #11

- In March of 2004, the Navy submitted the results from the ground water and soil samples.
- PADEP concurred with Navy's No Further Action response.
- Since it did not meet the criteria for either the IR or PADEP Underground Storage Tank program, it was never listed officially as an IR site.

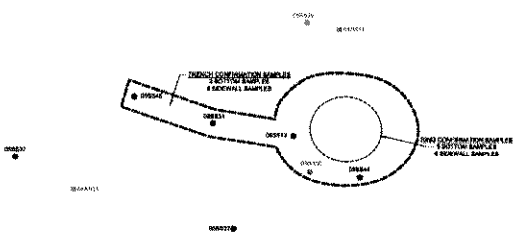
IR PROGRAM FACTS

- Preliminary Assessment completed 1985.
- NASJRB Willow Grove went on the EPA National Priorities List (NPL) October 1995. Air Force Reserve & Navy sites were labeled as being on one installation.
- As to date, approximately 7 Million dollars have been spent by the Navy on our IR Program.
- Complete date 2???.

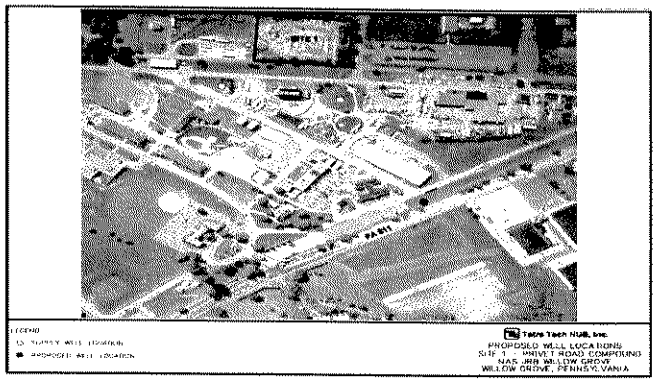
Restoration Advisory Board (RAB)

- Meetings required by Congress & DoN.
- RAB was formed in August 1996
- This will be the 28th RAB meeting, September 14, 2005 was the first off-Station meeting
- The Executive Officer of the Air Station is the military Co-chair, Ms. Liz Gemmill is community Co-chair.
- Jim Edmond has facilitated all meetings.

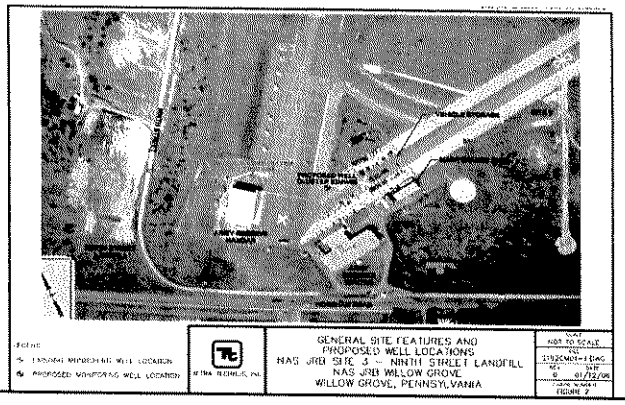
Site #5 Soil Removal



Site #1 Off-Station Groundwater Source Investigation



Site #3 Groundwater and Soil Borings



IR Program & BRAC

- DoD BRAC Guidance
  - DoD 4165.66 – M
    - Base Redevelopment and Realignment Manual, dated March 1, 2006. Effective immediately.
    - Chapter 8, "Environmental Actions".
    - Cancels previous DoD "Base Reuse Implementation Manual", dated December 1, 1997.
- Office of Economic Adjustment (OEA) web-site
  - http://www.acq.osd.mil/oea/home/index.htm
- Navy BRAC Implementation Guidance (NBIG) due shortly.