CARSWELL AFB
TEXAS

ADMINISTRATIVE RECORD
COVER SHEET

AR File Number 768

Carswell/Plant 4
Restoration Advisory Board Meeting
May 13, 2004
6:00–8:00 pm

Agenda

Welcome/Introductions/Minutes	5 minutes
Westworth Redevelopment Authority Update	15 minutes
Action Items	
Air Force Plant 4/George Walters Program Update	15 minutes
Carswell Off-Base/Charles Pringle Radiological Maintenance Munitions Waste Survey Program Update – Weapons Storage Area EOD Residential Safety Clearance Update – Sanitary Sewer System Field Work Update – 5-Year Program Performance Review/Golf Course Monitoring System – Amend Plant 4 ROD Projected Future Land Transfers – Golf Course 12-Acre Parcel Update – Off-Site Weapons Storage Area Update	35 minutes
Carswell On-Base/Mike Dodyk Program Update	10 minutes
AFCEE Community Relations Update	5 minutes
Next Meeting Agenda	5 minutes
Open Discussion/Questions	5 minutes

CARSWELL/PLANT 4
RESTORATION ADVISORY BOARD MEETING

DRAFT
Summary Minutes of May 13, 2004
Regular Quarterly Meeting

A regular meeting of the Carswell/Plant 4 Restoration Advisory Board (RAB) was held May 13, 2004 at the Lockheed Martin Recreation Association Ranch House, 3400 Bryant Irvin Road. The RAB meeting began at 6:00 p.m.

AGENDA

Welcome/Introductions/Minutes

Westworth Redevelopment Authority Update

Action Items

Air Force Plant 4 (George Walters)
Program Update

Carswell Off-Base (Charles Pringle)
Radiological Maintenance Munitions Waste Survey
Program Update
- Weapons Storage Area EOD Conversation of Residential Safety Clearance Update
- Sanitary Sewer System Field Work Update
- 5-year Program Performance Review/Golf Course Monitoring System
- FFS/Plant 4 ROD Amendment

Projected Future Land Transfers
- Golf Course 12-Acre Parcel Update
- Off-Site Weapons Storage Area FOST Update

Carswell On-Base (Mike Dodyk)
Program Update

AFCEE Community Relations Program Update

Next Meeting Agenda

Open Discussion/Questions

WELCOME AND INTRODUCTION OF ATTENDEES

Chris Baack, Community Co-Chairman, called the meeting to order. The minutes from the February 2004 RAB meeting were approved. No action items remain from the February 2004 meeting.

WESTWORTH REDEVELOPMENT AUTHORITY

Mr. Leland Clemons provided an overview of the activities occurring within Westworth Village. He indicated that the Hawks Creek Golf Club has received great reviews and is now in its second heavy season with play over 15% above last year. Mr. Clemons also mentioned that the above ground and below ground infrastructure has been completed at Westworth Park, which is the residential development located across from the Shady Oaks Country Club. He indicated that there are 107 lots and they are in the initial stages of renovations. Six houses are currently under construction and the architectural plans for four additional homes have been submitted to the guideline committee. It is anticipated that permits for these four homes will be obtained within the next 30 days.

Mr. Clemons indicated that at the intersection of Route 183 and Roaring Springs Road, construction is underway and the plumbing is being set for 312 multi-family units. He mentioned that adjustments to the building site plans and drainage layouts were necessary in order to address concerns associated with a pipeline spill that originated off-site. He indicated that this project has taken the cooperation of the Air Force Real Property Agency [AFRPA], Air Force Center for Environmental Excellence [AFCEE], EPA, Texas Commission on Environmental Quality [TCEQ], TxDOT, City of Westworth Village, and many other state and local entities. Mr. Clemons mentioned that the first phase should be completed by the end of the year and the entire project will be completed by the middle of 2005.

Mr. Clemons indicated the same development group that is building the multi-family units acquired an additional 72 acres along Route 183 near Lowe's. This land will be used for mixed-use development to continue the big-box power center concept along Route 183 with some additional retailers that are expected to be under contract soon. In addition, contracts are under negotiation with mid-sized retailers such as office buildings, or possibly the relocation of the City Municipal Complex and fire services closer to the center of the commercial development. Mr. Clemons pointed out that there has not been significant residential or commercial development within this region since 1969, however due to the recent development in Westworth Village and the properties located across Route 183, this corridor may see close to a quarter of a million to quarter of a billion dollars of development over the next five years. Mr. Clemons mentioned that the goal of this development is to serve the broader community over the next 25 to 50 years by adding jobs, a tax basis, and improving the quality of life within the City of Westworth Village, White Settlement, Fort Worth, and River Oaks.

Mr. Tim Sewell, a representative from the TCEQ inquired whether the mixed-use development discussed earlier is the same development planned for the 40 acres and another

30 acres along Route 183. Mr. Clemons confirmed that this land would be used for mixed-use development and explained that this development would be conducted in three phases. Mr. Mike Gross, a community member inquired whether the 312 multi-family units would be apartments or other types of housing. Mr. Clemons indicated that the 312 units are apartments consisting of one, two, and three bedrooms. Mr. Gross also asked if Mr. Clemons is involved with the construction of the prefabricated homes being built on Dawson Drive, which leads to the East Gate entrance of the Naval Air Station Fort Worth Joint Reserve Base (NAS Fort Worth JRB). Mr. Gross also asked if the prefabricated homes are selling for $90,000 and higher. Mr. Clemons indicated that he is not involved with that project but he has seen the design plans and interiors. Mr. Clemons added that the multi-family units tend to be oriented towards higher income clientele with one-bedroom apartments ranging from $750 to $1,100 per month. Mr. Clemons indicated that several focus groups were held and it was determined that there is an absence of quality apartments for young professionals. He added that demographic studies were conducted within a four-mile radius of the selected multi-family site location, and the studies identified that there had not been a single multi-family unit constructed in the last 10 years. Mr. Gross inquired about the townhouses Mr. Clemons is building and if any have been sold. Mr. Clemons indicated that there are six townhouses and all of them have been sold. The last one was sold prior to completion for $425,000 and is just under 3,000 square feet.

AIR FORCE PLANT 4

Program Update

Mr. Walters introduced himself as the Restoration Project Manager for Air Force Plant 4 (AFP 4) and provided a brief update on the projects at AFP 4. During his presentation, he displayed photographs of AFP 4 identifying the areas discussed.

Mr. Walters indicated that the soil vapor extraction system at Building 181 used an electrical resistance heating technology to remove trichloroethene (TCE) from the soils. The treatment system is the largest indoor application of this technology, consisting of one half acre. The treatment system ran for approximately 8 months prior to being turned off and the soil temperatures are currently 90°F, where normal soil temperature is considered 75°F.

The east parking lot system consists of 52 extraction wells and as of November 2001 67 million gallons of water have removed over 1000 pounds of TCE from the groundwater. Mr. Walters provided past and present TCE concentration data included in handouts and indicated that the overall trend of the TCE concentrations is generally decreasing. Mr. Walters anticipates the east parking lot system will be run for the next few years.

Mr. Walters indicated a false alarm occurred in the east parking lot area during early May. He mentioned water had accumulated in the east parking lot overflow containment center and it was thought to be groundwater from the treatment system. After taking the necessary precautions, the treatment system was turned off and it was determined that the water was caused by a waterline break at the eye wash station. Mr. Walters expected the treatment system to be turned on within a week of this occurrence.

Mr. Walters mentioned that he will take over the management of the basewide groundwater monitoring program consisting of over 3,000 acres on NAS Fort Worth JRB and offsite Carswell Air Force Base in the next couple years. He mentioned that the USGS is currently assembling all of the data into a searchable database identified as the Site-wide Three Dimensional Model and it should be available soon.

Mr. Walters briefly discussed the AFP 4 budget over the next few years. He indicated that over 80 million dollars has been invested into the cleanup of AFP 4 since the early 1980's. Mr. Walters indicated that during 2005 he will continue the Operation and Maintenance of the TCE treatment system and continue the long-term monitoring. He also mentioned that additional funding may be provided to monitor the regions of the TCE plume that are increasing.

Mr. Walters notified the RAB participants that the White Settlement Library contains the administrative records of all investigations performed at AFP 4 and that his contact information can be found on the handouts provided.

A representative from the Fort Worth Water Department inquired about the status of the polychlorinated biphenyls (PCBs) studies being conducted at AFP 4. Mr. Walters indicated the there is an ongoing study to determine the source of the PCBs and samples were collected recently from the Lockheed outfall drains. Mr. Walters indicated that low levels of PCBs (180 part per billion [ppb]) were identified in the outfall drain, and these concentrations are well below the EPAs regulatory limit of 2 part per million (ppm). The Fort Worth Water Department speaker asked how the 180 ppb relates to the volume of water in terms of PCB concentration. Mr. Walters indicated that the USGS representative is not present to respond to this question.

Mr. Robert Sullivan, USEPA, mentioned that the EPA has PCB screening levels that are used in risk assessment characterizations. The EPA has established screening levels specific to soils as well as specific screening levels for the ingestion of soils by humans. The EPA screening level for human ingestion of PCB contaminated soil is 30 ppm and there is currently 180 ppb produced from the Lockheed outfall drain. From a risk assessment standpoint, human ingestion of soils does not appear to be a risk to human health. The EPA also conducts ecological risk assessments in addition to the human health screening. Ecological screening levels are usually considerably lower than the human health screening levels since humans do not regularly ingest soil as benthic organisms do. The EPA and Air Force are working together to establish ecological screening levels to assess the impact of PCBs on the ecological community, if any.

Mr. Richard Talley of the City of Fort Worth indicated that in working with the U.S. Army Corps of Engineers (USACE) their concern deals with the ecological restoration and the potential dredging in some areas that are contaminated as well as the fact that we still have a health advisory for PCBs.

Mr. Sullivan indicated that the EPA has to bridge the regulatory program with the fish advisory issued by the TCEQ. The EPA must conduct the ecological risk assessment to see at what level there is an ongoing PCB exposure to the fish and to determine what the appropriate remedy will be (which may be dredging, capping of the sediment, or no further action with natural

sedimentation and monitoring) until at some point the remedial action objective in the sediment is obtained and is based on the EPA risk assessment process.

Mr. Walters indicated that he does not have the data with him but he did not recall there being high levels of PCBs in the sediment of the main body of Lake Worth.

Mr. Sullivan explained that this is a problem the EPA has encountered when working with the USACE. The EPA would like to proceed with dredging in areas where there is contamination. However in their ecological restoration process, they recognize that if the goal is to increase wildlife, then the wildlife brought into the area will have full run of the lake which includes the contaminated areas. However, the USACE is hesitant to proceed with a restoration program in the area west of I-820 due to what they consider as high levels of PCBs on the east side. There also does not appear to be a clear and coordinated definition of what high levels of PCBs are exactly between EPA and USACE.

Mr. Walters indicated that the Air Force would also like to see what the USACE's definition of high levels of PCBs is, so it can be discussed with the regulators and Air Force.

Mr. Sullivan indicated that the EPA conducts each Risk Assessment on a site-specific basis. Some of the information on big PCB sites like the Hudson River site in New York with the General Electric plant is available on the internet. The Record of Decision for the above example went through the EPA risk assessment process. Another site is the Fox River in Green Bay Wisconsin, which had 30 miles of PCB contamination in the sediment that is used for recreation, swimming, and fishing. The Record of Decision clearly states the required clean up levels.

Mr. Walters commented that if the sediment is moved in the main body of the lake, the cove will be washed out in the next big rainstorm. The USGS presented data suggesting that if you dig deeper into the sediment following the time of deposition, the PCBs increase. For example at eight feet, you may have a concentration of 700 ppb rather than the surface 180 ppb. The EPA and Air Force would have to take this into consideration.

A Fort Worth Water Department speaker indicated that the City of Fort Worth, USACE, EPA, and Air Force need to have an open line of communication so common goals can be determined.

Mr. Sullivan agreed and indicated that the PCB issue has just come to the attention of the Air Force and EPA within the past year, and the Air Force has partnered with the USGS to further define the problems. A Superfund study is necessary to determine the effect of the accumulation of PCBs on the ecological food chain.

An unidentified speaker indicated that it is apparent that this PCB problem is not something that occurred a number of years ago and has since gone away.

Mr. Walters indicated that essentially it has gone away since the PCB levels are so low.

Mr. Sullivan indicated that the Air Force has submitted a plan to the EPA and TCEQ which the Air Force is implementing to identify the source of the PCBs.

Mr. Walters explained that the plant outfall is only 6 feet deep and it is connected to all the piping throughout the plant. The lake is 40 feet deep so there is really no exposure there.

Mr. Walters indicated that the USACE collected some fish tissue samples and some were obtained from the Texas Parks and Wildlife Department. For a large amount of bass that were sampled, the PCBs were below the action level. He believes that the croppies were below the detection limit too, yet the TCEQ continues to have a fish advisory for them as well since they assume the average individual can not tell the differentiate between various species of fish.

Mr. Talley indicated that is one of the challenges that the City of Fort Worth is dealing with, and there does not appear to be consistent enforced standards. Therefore, the different agencies need to get together and decide what the risks are.

Mr. Walters concurred and indicated that USACE has not approached the Air Force.

Mr. Sullivan indicated that the USACE is a partner and he could work with Mr. Walters to facilitate a meeting with the USACE.

Mr. Walters indicated that he thought low levels of PCB could be taken to a normal landfill. He then asked if there were any additional questions related to AFP 4.

Mr. Sullivan indicated that the EPA's website contains a wealth of information on the discussed topics (www.epa.gov).

CARSWELL OFF-BASE

Mr. Charles Pringle introduced himself and indicated that he works for the Air Force Center for Environmental Excellence (AFCEE) and also represents the Air Force Real Property Agency (AFRPA). Mr. Pringle previously served as the AFRPA Base Environmental Coordinator (BEC); however Ms. Norma Landez is now the AFRPA BEC.

Mr. Pringle introduced Dr. Jody Wireman from the Air Force Institute for Operational Health (AFIOH) out of Brooks AFB, which is part of the Air Force Surgeon General. Dr. Wireman's group was contacted by the AFRPA for assistance with possible radiological issues at the Weapons Storage Area portion of former Carswell AFB. The Weapons Storage Area, a 247-acre property is located approximately 5 miles west of the main portion of the base. When Carswell AFB was active, the Air Force would use the Weapons Storage Area for training and explosive ordnance disposal as well as storage of munitions and bombs. To date, the Air Force has obtained a Department of Defense Explosive Safety Board (DDESB) agricultural clearance for the Weapons Storage Area, but it has since been decided by AFRPA to go back to the DDESB to obtain a residential clearance, so that the land may be used for the development of residential homes.

Dr. Wireman discussed the Weapons Storage Area's low level radiation survey that was conducted at Carswell AFB relative to similar surveys that were conducted at five other Air Force Bases. Mr. Wireman advised that it was discovered, from recently declassified documents, that maintenance workers in the 1950s and 1960s cleaned the interior portion of bombs using rags to wipe uranium oxide (rust) from the casing within the bombs. The oxidation had to be removed so that the bomb components could slide together and function properly. As a result of this cleaning, small amounts of residual radium would become embedded on cleaning rags and gloves which were disposed in trenches. This same cleaning process was conducted at Carswell's Weapons Storage Area.

Solid Waste Management Unit (SWMU) 60 at the Carswell Weapons Storage Area consisted of three lead pipes containing low level radioactive material. The Air Force performed a records search to determine if some of the contents of these pipes were from the trenches likely used for disposal of the radium contaminated wipes, rags, and gloves. It is possible that the low level radiation maintenance wastes were removed for proper off-site disposal via the lead pipes, but additional records search combined with on site radiation instrument surveys should determine if this was the case.

AFIOH completed a preliminary assessment survey in May 27, 2003, and determined that there currently is no immediate danger from any radioactive material. Dr. Wireman indicated that a radiological survey and geophysical survey were also conducted a few weeks ago to identify any other possible trenches. The areas that were investigated were selected based on the available site history and data obtained from the preliminary assessment survey. He mentioned that the radiological survey and geophysical survey focused on the bomb maintenance and inspection buildings, as well as the bomb storage facilities where bombs use to be stored. The surveys also focused on existing water wells in the Weapon Storage Area. Dr. Wireman presented pictures of the site along with his briefing.

AFIOH used the In-Situ Object Counting System (ISOCS) gamma walkover survey, which generates maps showing variations of gamma radiation levels, which are evaluated to determine if any areas required additional remediation. The ISOCS can determine what type of radioisotope is present. During this survey, some high level soil samples were detected and collected for further evaluation.

One elevated reading was identified in the bunker 8531, which also had an elevated reading in 1995. Mr. Wireman advised that in 2001 the Nuclear Regulatory Commission stated that the land was released for agricultural public use. Dr. Wireman indicated the additional investigations were conducted to assess the projected future residential land use scenario. Elevated levels of gamma radiation were identified in the concrete floor of facility 8531, and samples were collected. The future action with this building will be assessed when all results are available. Dr. Wireman identified an additional area outside the bunker where the ISCOS evaluation was performed and soil samples were collected. Dr. Wireman also indicated that due to historically high radium results identified in the groundwater, background groundwater samples were collected to get a feel for what concentrations are naturally or not naturally occurring.

Dr. Wireman indicated that the geophysical survey was also conducted to identify possible additional trenches. The electromagnetic profiling was performed initially, and for areas that did not delineate well, the ground penetrating radar was used.

Dr. Wireman concluded that based on initial survey results, there does not appear to be additional trenches. As far as the gamma survey and ISOCS, there does not appear to be any areas of concern aside of the bunker which was identified in 1995. A thorough evaluation of the bunker will be performed once pending soil and groundwater results are available.

Mr. Baack inquired about the scale on the slide containing the bunker with identified contamination. Dr. Wireman indicated that the scale of the contaminated area inside the igloo is approximately 10 feet by 10 feet. Mr. Baack asked if the readings have decreased within the past ten years. Dr. Wireman indicated that it is unlikely they would decrease much, because Radium does not degrade rapidly due to its half life duration. However every sample collected is remediating the site to some extent.

An unidentified speaker asked if the buildings will be removed and are they likely to contain additional contamination.

Ms. Landez of the AFRPA indicated that the buildings will not be removed. Mr. Pringle added that they will remove the contaminated region within the one bunker.

Mr. Pringle provided an update on the second project occurring at the Weapons Storage Area which is to obtain a DDESB residential safety clearance. To obtain the residential safety clearance, the Air Force tested the soil down to 15 feet as opposed to 12 inches in order to obtain the agricultural safety clearance. To date, two contractors have conducted sampling at the site and nothing has been found. Weston Solutions will be conducting the residential safety clearance survey on the Explosive Ordnance Disposal area. Based on Weston's findings as well as Dr. Wireman's results and evaluation, the Real Property Agency will produce a Finding of Suitability for Transfer (FOST) and submit it to the EPA and TCEQ for their concurrence. It is anticipated that the Weapons Storage Area will be available in the August-September time frame to be offered to the public for sale.

Next, Mr. Pringle indicated that there are 12 sites along the Sanitary Sewer System (SWMU 66) on the Naval Air Station that require remediation. It is anticipated that work will commence in June and will be completed by October. After the field work is conducted, a report will be submitted to regulators recommending site closure.

Mr. Pringle explained that there are 68 Air Force Defense Environmental Restoration Account (DERA) sites that exist on the NAS, and 60 of them are closed. The ARFPA was responsible for cleaning up 19 BRAC sites, and SWMU 66 is the last one to be closed. After all Air Force sites are closed on the NAS and the offsite Carswell property, the property can then be transferred either to the Westworth Redevelopment Authority or the Navy, depending on their location.

All Air Force sites on-base are undergoing a 5-year review by an Air Force contractor, HydroGeoLogic, Inc. (HGL). This work was awarded February 11, 2004. Currently, the primary focus of the 5-year review is BRAC sites only. HGL was chosen for this work because they have been working on base for the past 6 or 7 years and have significant institutional site knowledge. If any citizens have concerns regarding actions taken at any BRAC sites, they are welcome to provide comments during the 5-year review process. The 5-year review will also look at the TCE concentrations to evaluate the effectiveness of remediation systems such as the PRB. HGL will also continue to monitor the performance of groundwater treatment by the PRB on a semi-annual basis.

The Focused Feasibility Study is a joint effort between Mr. Ebert (On-Base), Mr. Walters (Air Force Plant 4), and Mr. Pringle (AFRPA). Mr. Pringle explained that Air Force Plant 4 is a National Priorities List site, which means that investigation and clean up work follows the Superfund program and the site has a Record of Decision. The Air Force is working with the TCEQ and EPA to amend the Record of Decision to allow for ease of transfer of the BRAC property to the Westworth Redevelopment Authority. Mr. Pringle is hopeful that the Air Force will be able to deed the land to the Westworth Redevelopment Authority next year.

There is a 12-acre site that is going to be subleased for the building of multi-family apartments. The land has been investigated and no TCE has been found. However, some fuel contamination was identified on the site. There are two pipelines running in this area. Pride Gas and Chevron are the owners of the pipelines. Pride Gas previously brought jet fuel to the base and Chevron brought gasoline to the base. Both of these pipelines have not been in use since 1993. The Pride line might be the one that contaminated the 12 acre parcel. In 1997 there was a fuel spill in this area caused by the Pride pipeline. Even though the land is clear for building right now, there has to be clarification on whether this pipeline could create contamination in the future. The Air Force will officiate the clean up if they can find the source. In the meantime, the Westworth Redevelopment Authority is subleasing this land and construction commenced in March 2004.

Mr. Pringle indicated that during the April-May 2002 timeframe, a permeable reactive barrier (PRB) was installed at the former Carswell AFB to remediate the TCE in the groundwater. The PRB was placed along the boundary between NAS Fort Worth JRB and on a portion of the offsite Carswell AFB near the golf course which is designated for transfer under BRAC in the near future. The goal of the PRB is to remediate the TCE in the groundwater that is moving toward the golf course, to a value below the MCL in order for the BRAC property to be transferred to the Westworth Redevelopment Authority in the near future. Mr. Pringle mentioned that upgradient of the PRB, the TCE concentrations will remain elevated but he is hopeful that natural attenuation and long-term monitoring will remedy that situation. He indicated that Dehalococcoides, the only known microbe to degrade TCE to ethane, has been identified by the EPA to be downgradient of the PRB and this microbe is facilitating the remediation of the TCE in the golf course property.

Mr. Sewell of the TCEQ pointed out that there had been talk of extending the PRB to the north and it was his understanding that this was put on hold due to budgetary reasons. Mr. Pringle mentioned that extending the PRB has been put on hold since the AFRPA feels there

may be other methods to achieve the same result. Next, Mr. Pringle provided an animation showing how well the TCE groundwater remediation in the golf course property is occurring as a result of the PRB and the Dehalococcoides.

CARSWELL ON-BASE

Mr. Mike Dodyk, the Air Force Resident Engineer at Carswell AFB, began by giving the participants background on the environmental restoration program at Carswell AFB. Carswell AFB officially closed on September 30th, 1993, and the majority of the base was realigned as the Naval Air Station Joint Reserve Base. A small portion of the base has been leased or transferred to the Westworth Redevelopment Authority, and another small portion of the base has not been deeded to the Westworth Redevelopment Authority yet. The Air Force is responsible for clean up of contamination occurring before October 1st, 1993, during the time Carswell AFB was an active base.

In compliance with the Resource Conservation and Recovery Act (RCRA) the Air Force was required to conduct a RCRA Facility Assessment (RFA) which was done in 1989. The RFA identified 87 sites on base that required investigation and closure. These sites included landfills, fire training areas, and underground tanks. These sites are identified as either solid waste management units (SWMUs) or Areas of Concern (AOCs). There are 68 SWMUs and 19 AOCs, totaling 87 sites basewide.

Mr. Dodyk gave an update on the site closures. Of the 87 sites, 82 of them have achieved closure and of the five remaining sites, it is anticipated to have four closed out by the end of 2004. The remaining site (AOC 1) is the pump and treat system at the gas station which is ongoing and will continue possibly for another two to three years.

Mr. Dodyk gave an update of recent field activities that have taken place. The injection of vegetable oil into the northern lobe TCE plume to study the effects of bioremediation was sampled in April and the results are pending. Three additional monitoring wells were installed downgradient of the PRB in order to better define the TCE plume migration.

Mr. Dodyk updated meeting participants on the quarterly sampling at AOC 1 that was conducted last month (April 2004). Once the contaminated groundwater is removed from the ground, it is run through the treatment system to strip the gasoline products out of the water. The clean water then goes to the city sewer.

Mr. Dodyk indicated that the only upcoming field event is the quarterly groundwater monitoring at the gas station site (AOC 1). Additional documents to be submitted include the Basewide Historical Operations Report and Draft RFI for SWMUs 54 and 55.

NEXT MEETING

The next RAB meeting is scheduled for September 23, 2004. This meeting will be held at a location closer to AFP 4 to facilitate a tour of Lockheed. The exact meeting location will be determined at a later date.

OPEN DISCUSSION/QUESTIONS

Mr. Mike Hawkins of AFCEE asked to speak at the end of the meeting regarding the phasing out of AFCEE's participation in the RAB meetings. He indicated that interviews were held with members of the surrounding community, and they were comfortable with the environmental cleanup at Carswell/AFP 4. Mr. Hawkins mentioned that there is a fact sheet available which includes the Community Relations Plan interview results. Mr. Hawkins anticipates the September 2004 RAB meeting will be AFCEEs last technical briefing.

IN ATTENDANCE

Carswell DERA (On-Base)
Mike Dodyk, AFCEE, Resident Engineer
Mike Hawkins, Public Affairs, AFCEE

Carswell AFRPA (Off-Base)
Norma Landez, Air Force Real Property Agency
Mark Stough, Air Force Real Property Agency
Leland Clemons, Westworth Redevelopment Authority
Charles Pringle, HQAFCEE/BCW

Air Force Plant 4
George Walters, AFP 4 Project Manager, ASC, Wright Patterson Air Force Base
Estella Holmes, Public Affairs, Wright Patterson Air Force Base

Texas Commission on Environmental Quality
Ray Risner
Tim Sewell
Luda Voskov

U.S. Environmental Protection Agency
Robert Sullivan
Noel Bennett

Lockheed Martin
Sarah Young
Norma Robbins

Community
J'Nell Pate, Community Member
John Maddux, Community Member
Chris Baack, Community Member
Mike Gross, Community Member
Leland Clemons, Westworth Redevelopment Authority
Paul Bounds, City of Fort Worth
Richard S. Talley, City of Fort Worth

Jim Scanlan, City of Fort Worth Water Department
Chris Breitling, City of Fort Worth Environmental Management Department
Barbara Nickerson, City of Fort Worth
Jody Wireman, Air Force Institute for Operational Health
D.W. Owen, River Oaks
Greg Hendrickson, River Oaks

Air Force Contractors
Miquette Rochford, HydroGeoLogic, Inc.
Lynn Morgan, HydroGeoLogic, Inc.
Jennifer Spies, HydroGeoLogic, Inc.
Andrea Linder, Booze Allen Hamilton
Rick Wice, Shaw Group
Gregg McGraw, Shaw Group
Russ Cason, Weston Solutions

Comments/corrections regarding these meeting minutes should be sent to:

Ms. Miquette Rochford
HydroGeoLogic, Inc.
Phone: (970) 243-3893
Fax: (866) 545-8377
e-mail: mer@hgl.com

Headquarters U.S. Air Force

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Carswell Off-Base BRAC UPDATE BCT/Restoration Advisory Board Action Items

U.S. AIR FORCE

Ms. Norma Landez, BEC
Charles C. Pringle, PM

13 MAY 04

U.S. AIR FORCE

Carswell Off-Base/Agenda

- Radiological Maintenance Munitions Waste Survey (15 Minutes)
- FY 04 Program Updates (10 Minutes)
  - WSA EOD Residential Safety Clearance
  - Sanitary Sewer System Field Work
  - 5 Year Program Performance Review/Golf Course Monitoring System
  - Amend AF Plant 4 ROD
- Projected Future Land Transfers (10 Minutes)
  - Golf Course 12 Acre Parcel Update
  - Off-Site Weapons Storage Area Update

NOTE: AFRPA'S Administrative Record Web Site address is:
http://www.adminrec.com/afbcanew.htm

U.S. AIR FORCE

Carswell FY 04 Projects

- DDPF20036005 RFI, EOD Residential Clr., WSA
- DDPF20026105 RA, San. Sewer System
- DDPF20047002 LTM, TCE Groundwater
- DDPF20047110 Five-Year Performance Review
- DDPF20037001 ROD Amend/OPS Golf Course

Air Force Real Property Agency
Air Force Institute for Operational Health

Integrity - Service - Excellence

Weapons Maintenance Waste Investigation: Carswell AFB TX

13 May 04

Presented by Jody Wireman, PhD, CIH
Toxicologist

U.S. AIR FORCE

U.S. AIR FORCE

Overview

- Background
- Preliminary Assessment/Site Inspection (PA/SI)
- Summarize where we are and what's next

U.S. AIR FORCE

Background

- Carswell Offbase Weapons Storage Area (WSA)
  - Located about 5 miles west of the main base
  - Maintenance of certain weapon systems in late 1950s/early 1960s generated waste containing radioactive contamination
  - Uranium oxidation (rust) was removed during cleaning operations
  - Small amounts of residual uranium deposited on cleaning materials (wipes) and personal protective equipment (gloves, smocks)
- Radioactive waste disposal site (i.e., three disposal pipes) within WSA likely used for disposal of maintenance waste
- Investigation of other areas in WSA proposed to ensure no other disposal sites existed
- Further investigation and site-specific historical records review ongoing

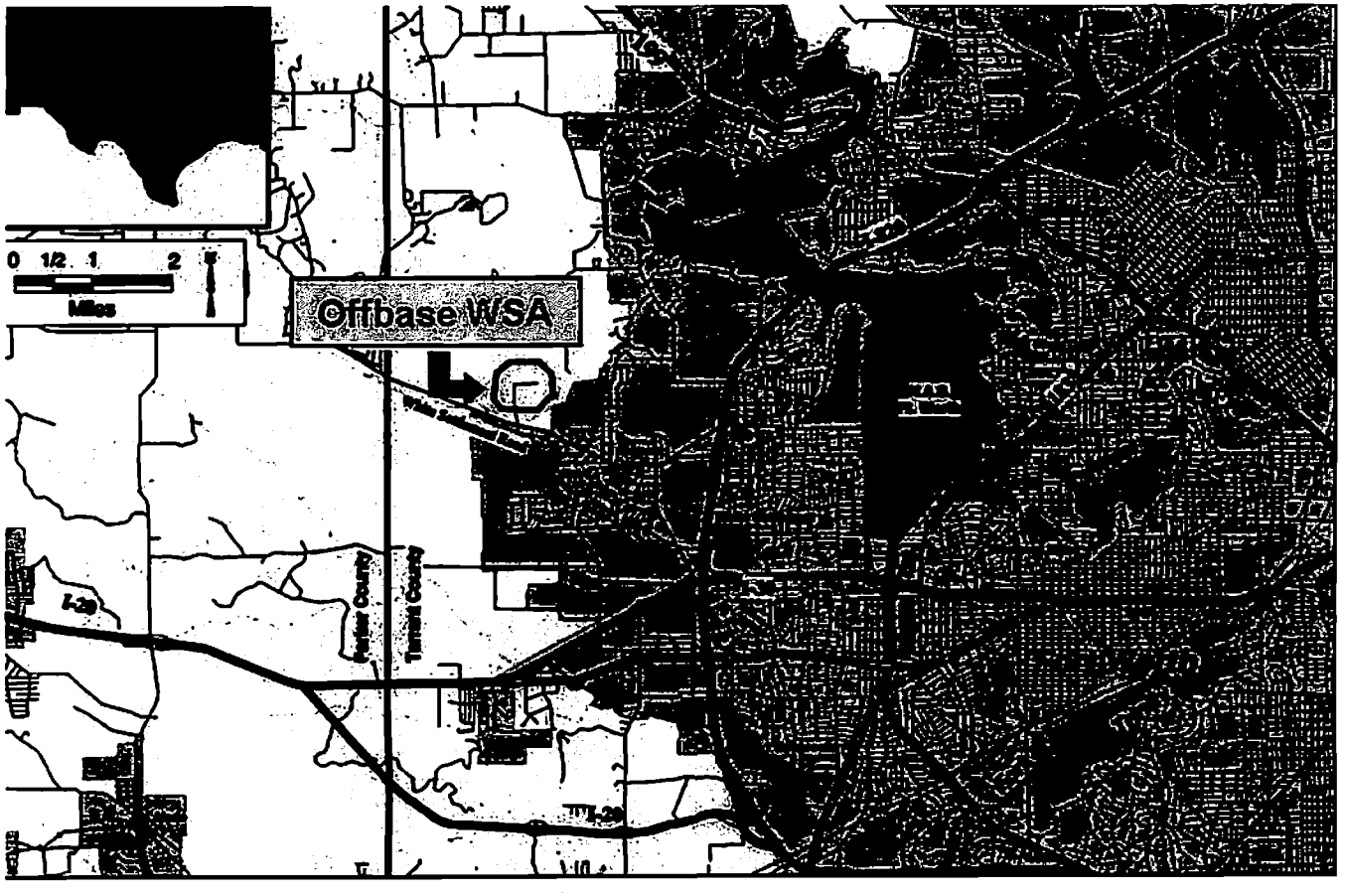
U.S. AIR FORCE

Background (Cont.)

- Preliminary survey was accomplished May 27, 2003
  - Purpose: Identify if imminent hazard existed
  - Results:
    - No burial site or other distinguishable radiation source identified
    - No immediate risk to human health or the environment
- Recommendation: perform a CERCLA PA/SI to properly document and assess the risk from weapons maintenance activities
- Radiological and geophysical field surveys performed March 15-26 and May 3-5, 2004

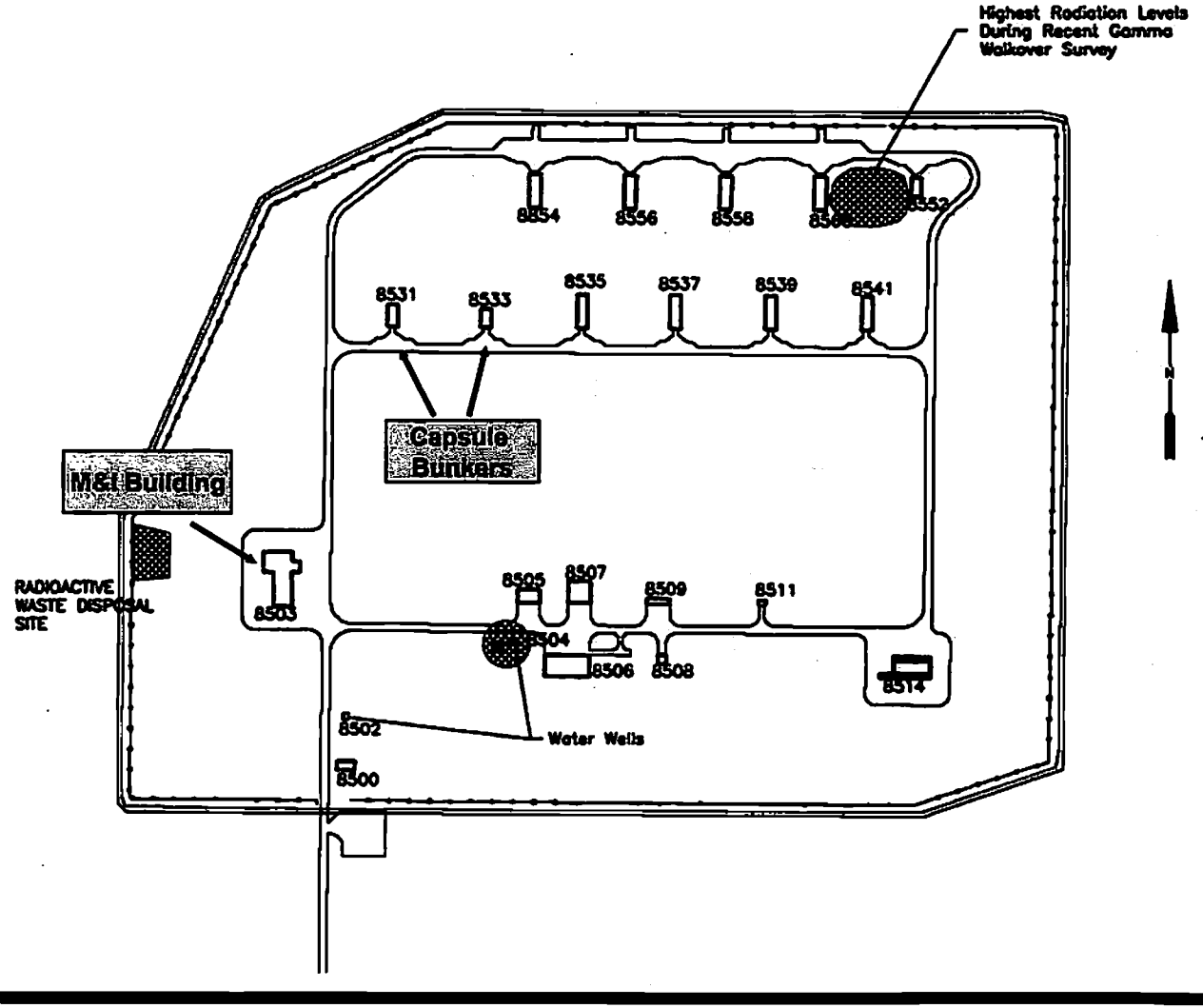
U.S. AIR FORCE

Carswell AFB Offbase WSA Vicinity Map



U.S. AIR FORCE

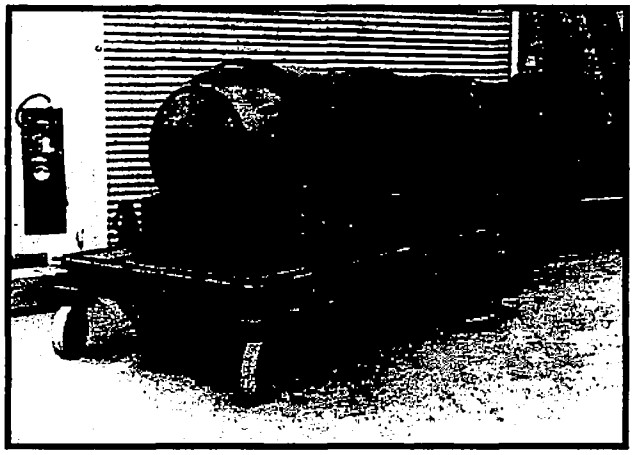
Carswell AFB Offbase WSA (Bldgs 8503, 8531, 8533 & 8552)



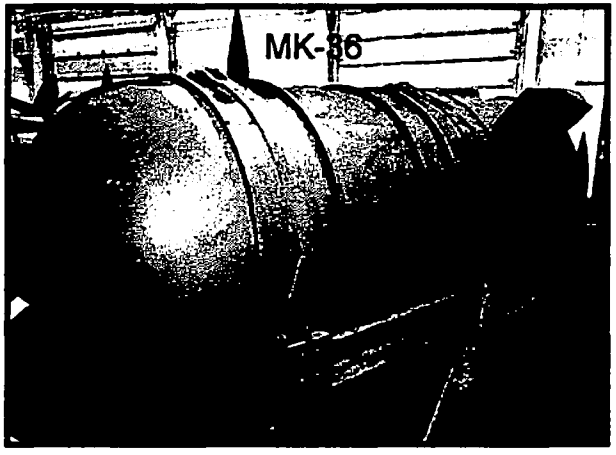
U.S. AIR FORCE

Typical Weapons

Mk-6

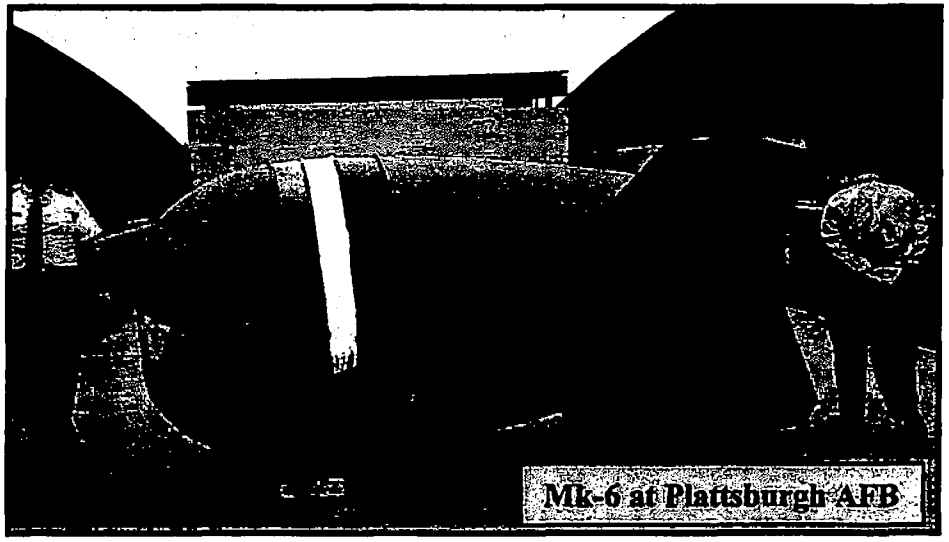


Mk-15 (Mk 39 similar)



Mk-36

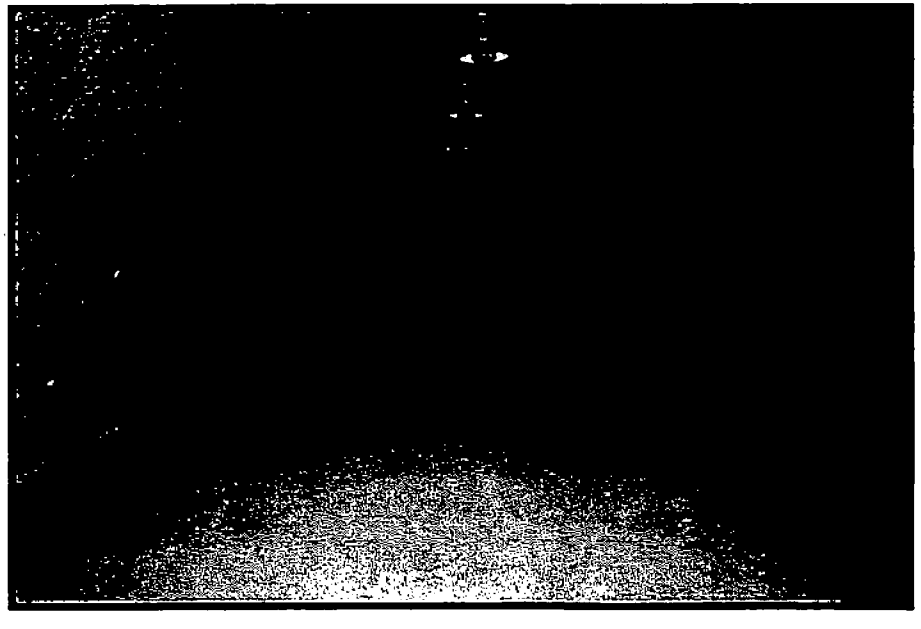
Mk-5 w/IFI



U.S. AIR FORCE

Weapon Storage Bunkers

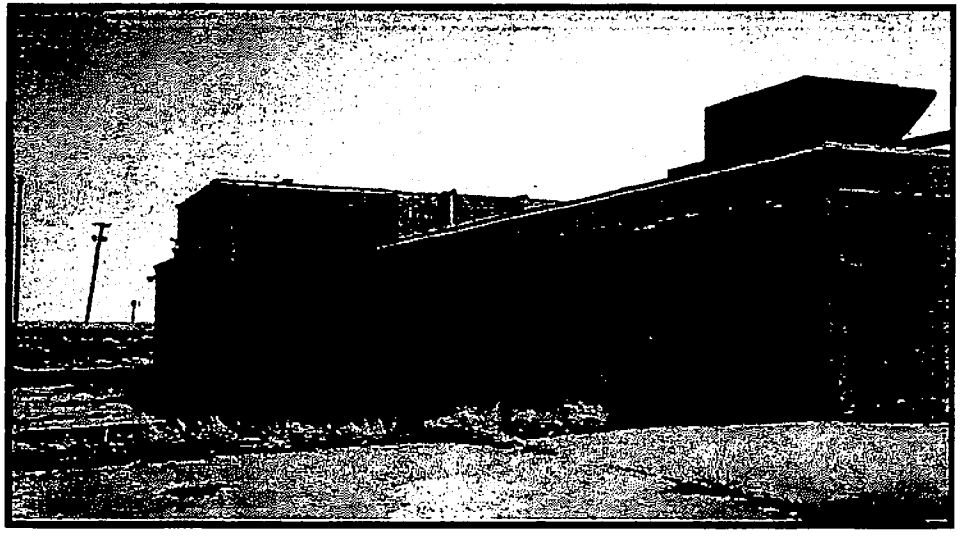
[Carswell AFB, TX, Bldg 8552]

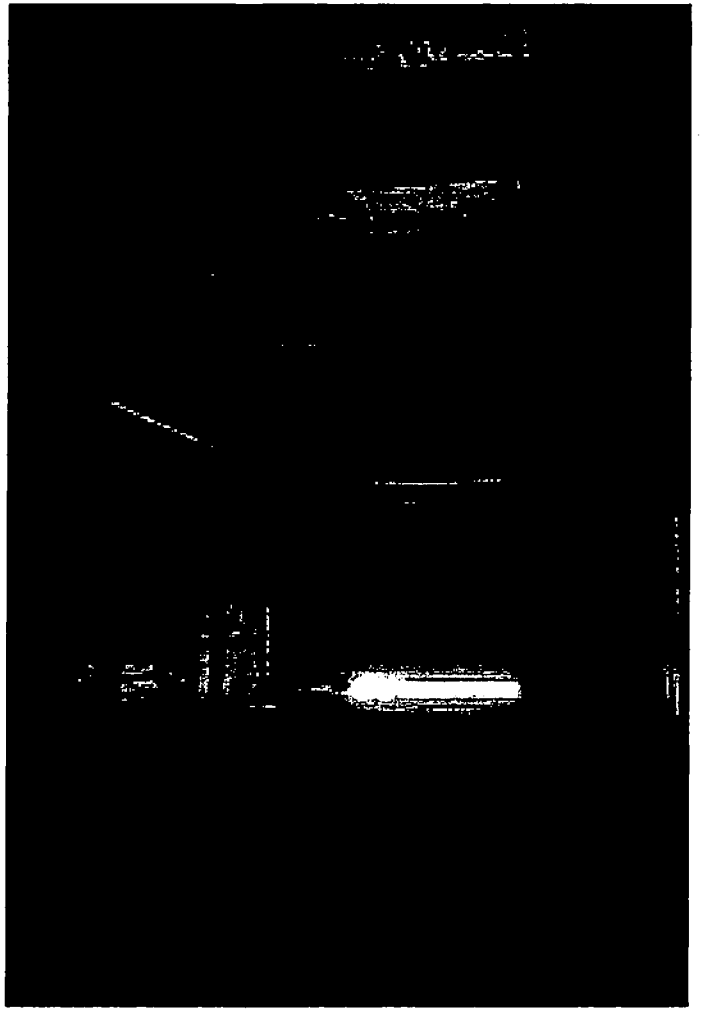


[March AFB, CA]

U.S. AIR FORCE

Bldg 8503 - M&I Building

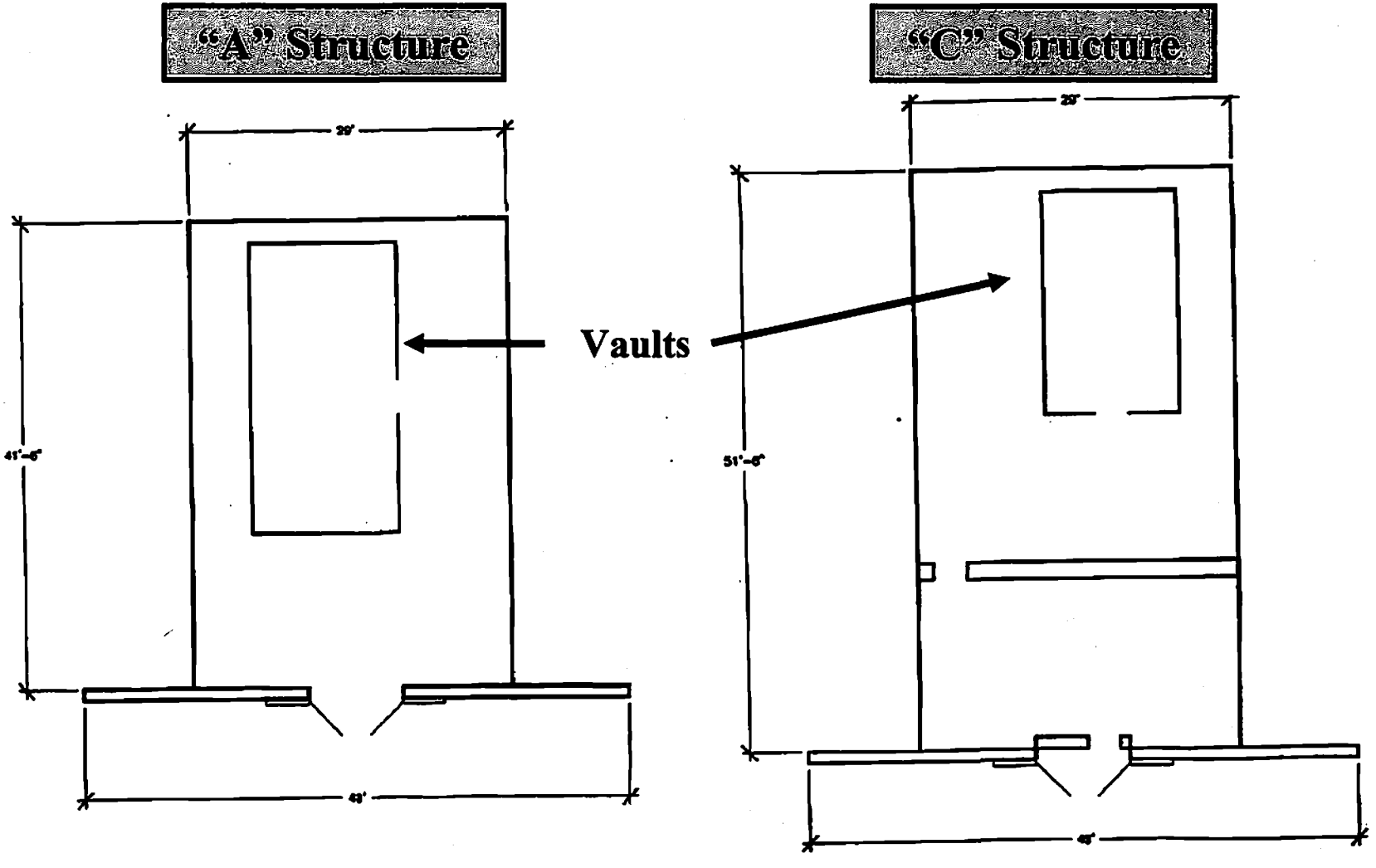




Integrity - Service - Excellence

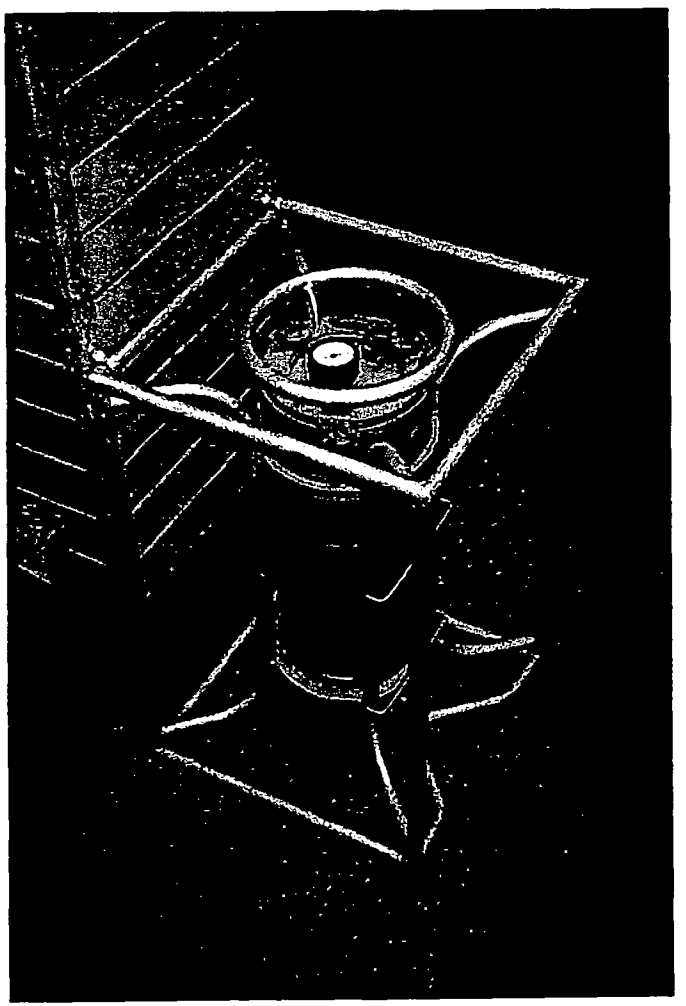
U.S. AIR FORCE

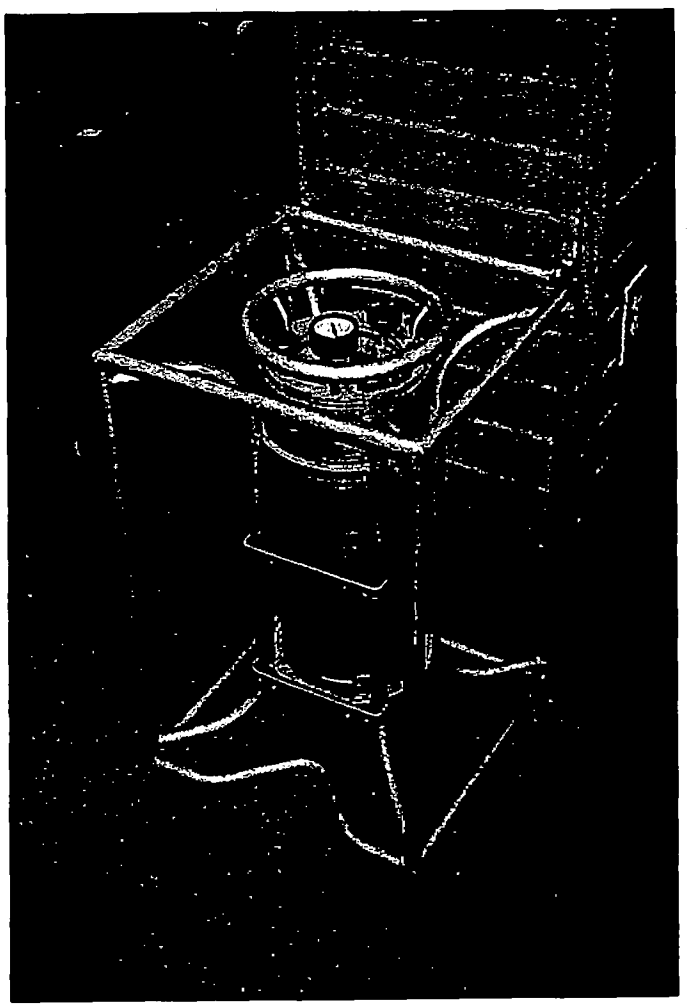
Capsule Bunker Layouts



U.S. AIR FORCE

Capsule Bird Cage





(at National Atomic Museum, Albuquerque, NM)

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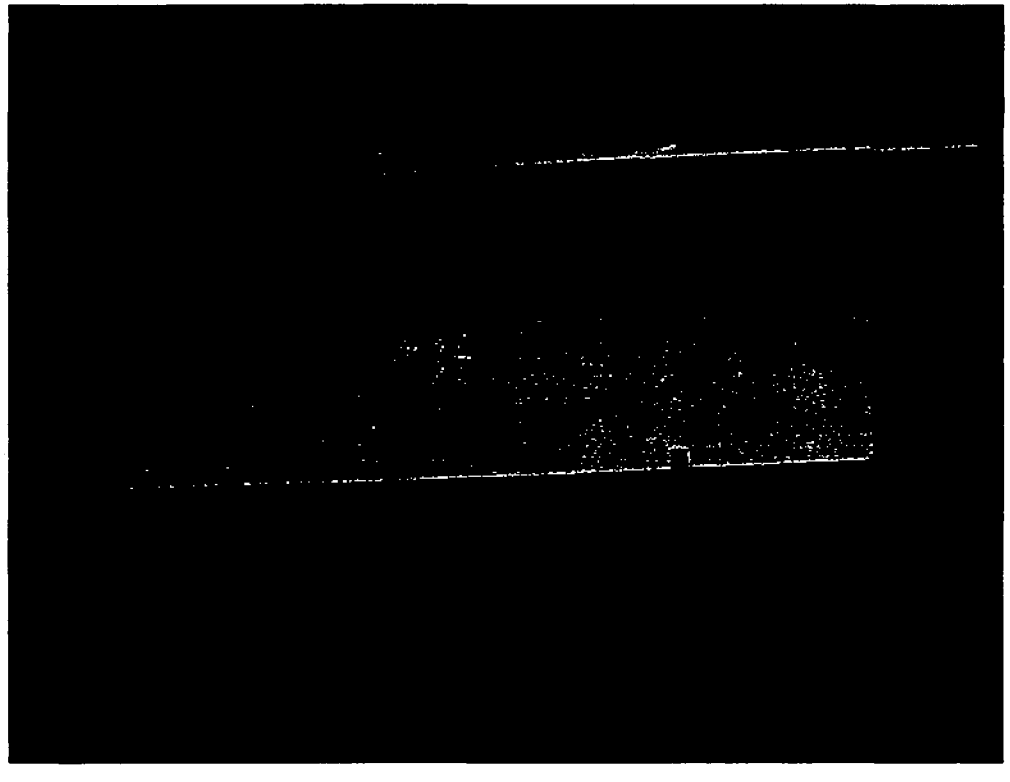
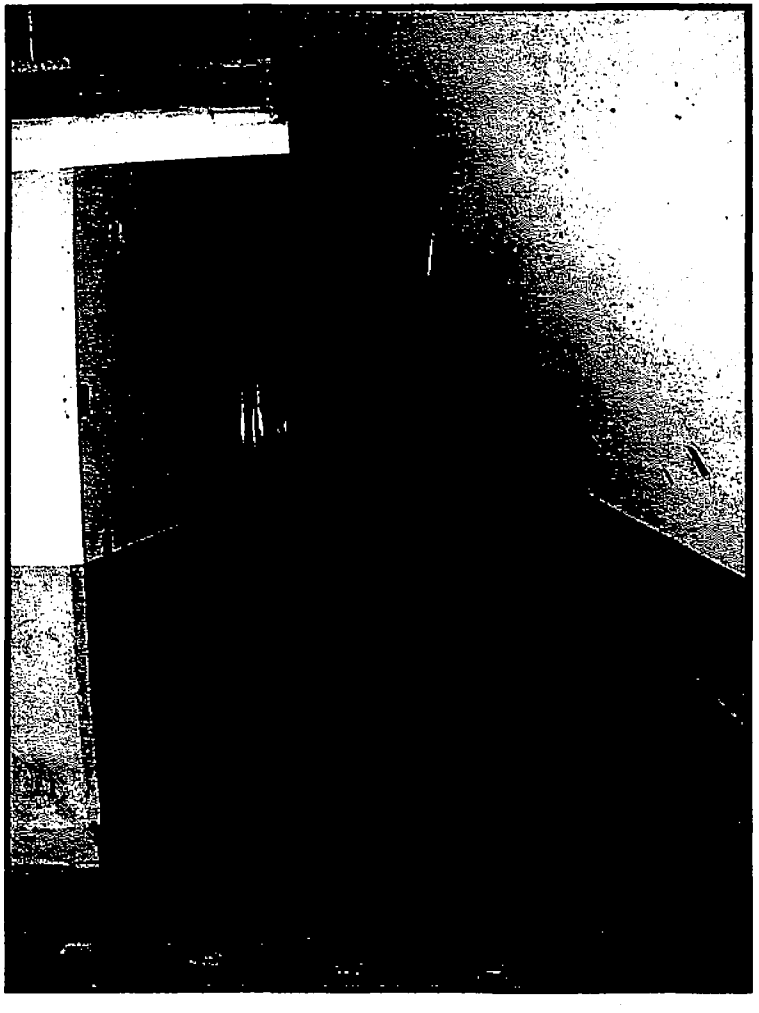
Bldg 8533 - "A" Structure Capsule Vault





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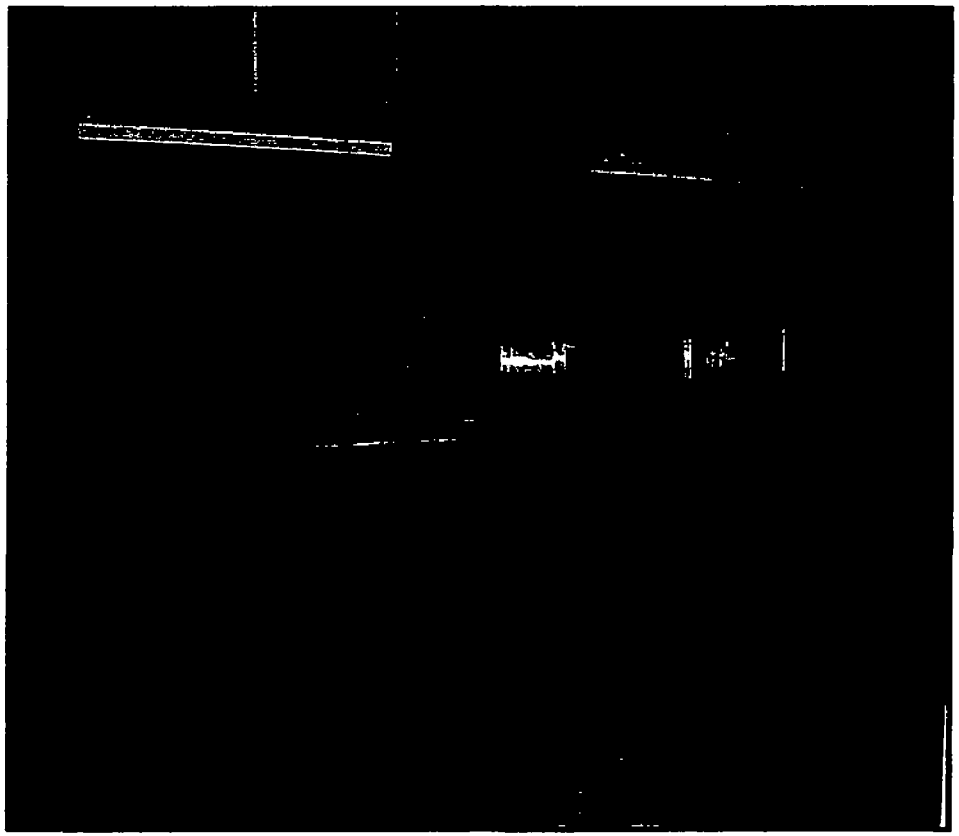
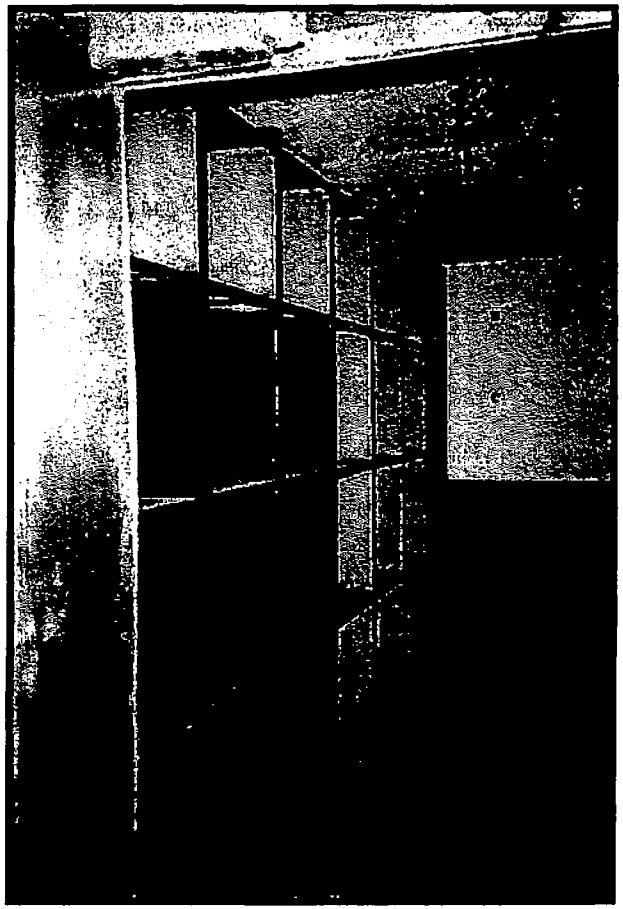
Bldg 8531 - "C" Structure Capsule Vault





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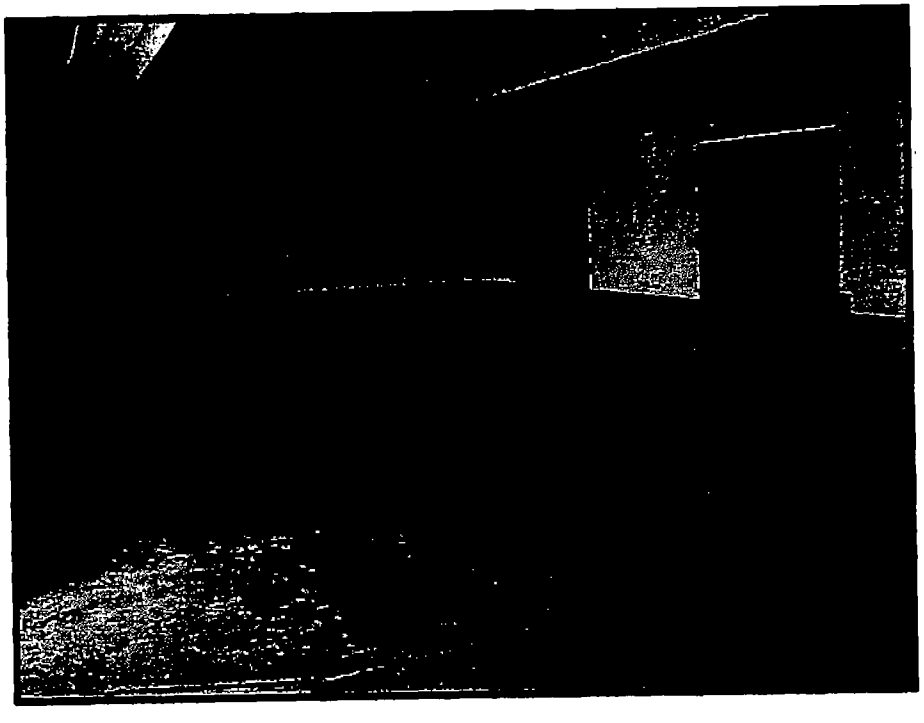
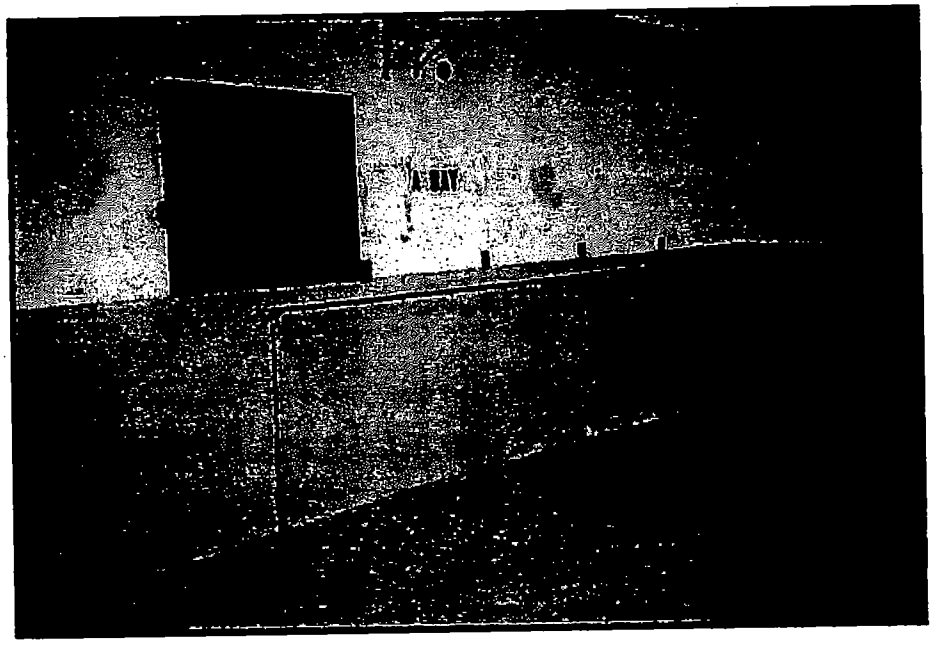
Bldg 8531 - "C" Structure Maintenance Bay





U.S. AIR FORCE

Preliminary Assessment/Site Inspection Radiological Survey: Purpose

- Identify outdoor and indoor surface areas with elevated levels of residual radioactivity
- Results will be used to determine if additional investigations are needed.

U.S. AIR FORCE

Where were radiological surveys done?

In locations with the highest potential for residual radioactivity:

- **Potential disposal or burial locations**
  - **Near old M&I building (8503)**
  - **Near former capsule bunkers (8531 and 8533)**
  - **In area of elevated radiological activity based on preliminary survey, May 2003 (Bunker 8552)**
  - **In area around production well with slightly elevated radiological levels**

U.S. AIR FORCE

Radiological Survey: Carswell Offbase WSA

- Gamma Walkover Survey
  - Identify areas of potentially elevated activity that require additional characterization.
  - Survey used a FIDLER (Field Instrument for Detection of Low Energy Radiation)
- ISOCS *(In Situ* Object Counting System)
  - An instrument that takes measurements to identify specific radionuclides, provide an estimate of activity levels
  - To quantify activity at locations of elevated activity by FIDLER
- Surface Soil Measurements
  - Samples were collected at biased locations, measured with ISOCS, and submitted to offsite laboratory for confirmation of field results
- Groundwater and surface water sampling
  - GW samples were collected from existing well locations and surface water samples were collected within the WSA and at reference locations

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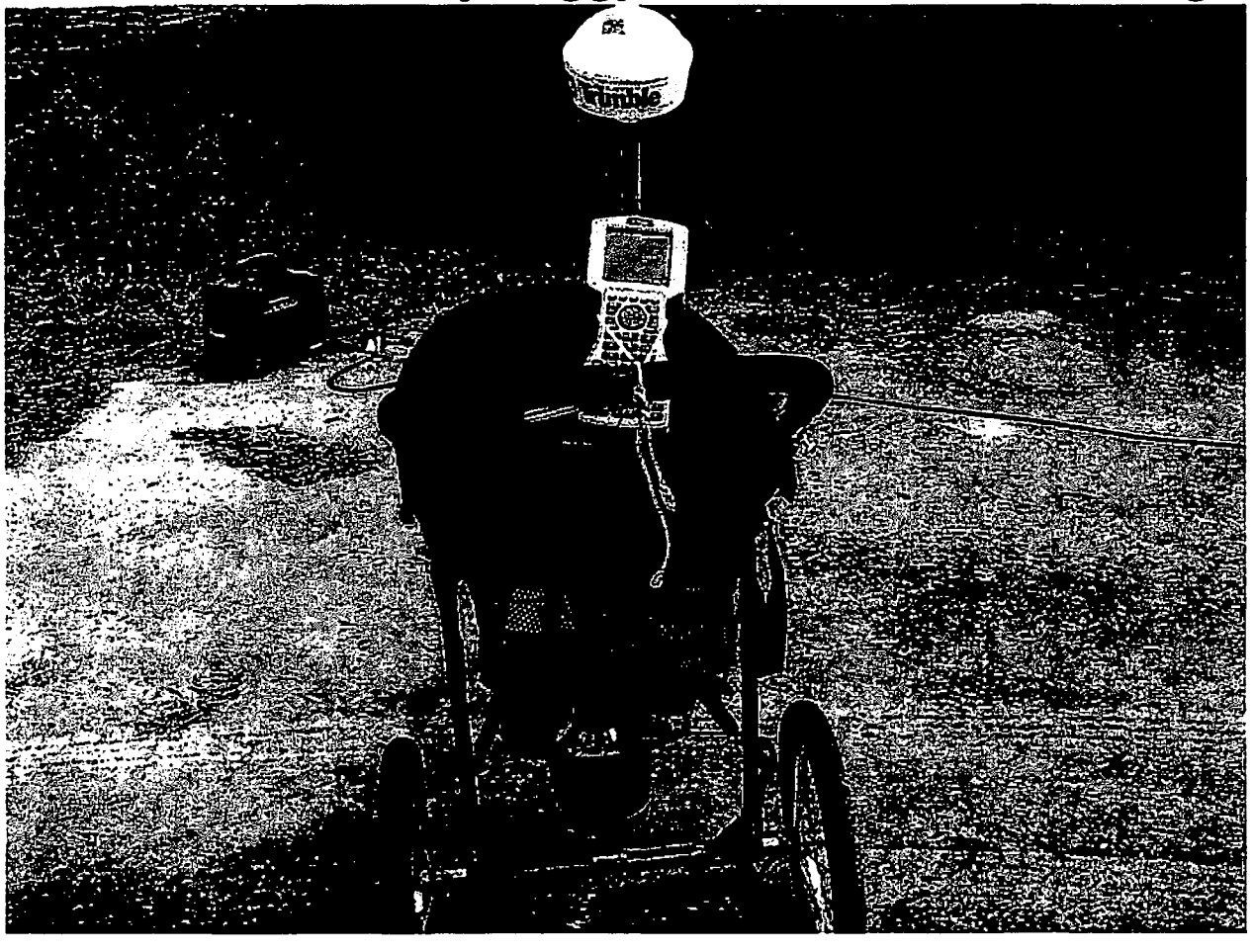
Gamma Walkover Survey

FIDLER mounted on "baby buggy" with Global Positioning System



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ISOCS Measurements

(*In Situ* Object Counting System)

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Interior Measurements

(Gas Proportional Floor Monitor)

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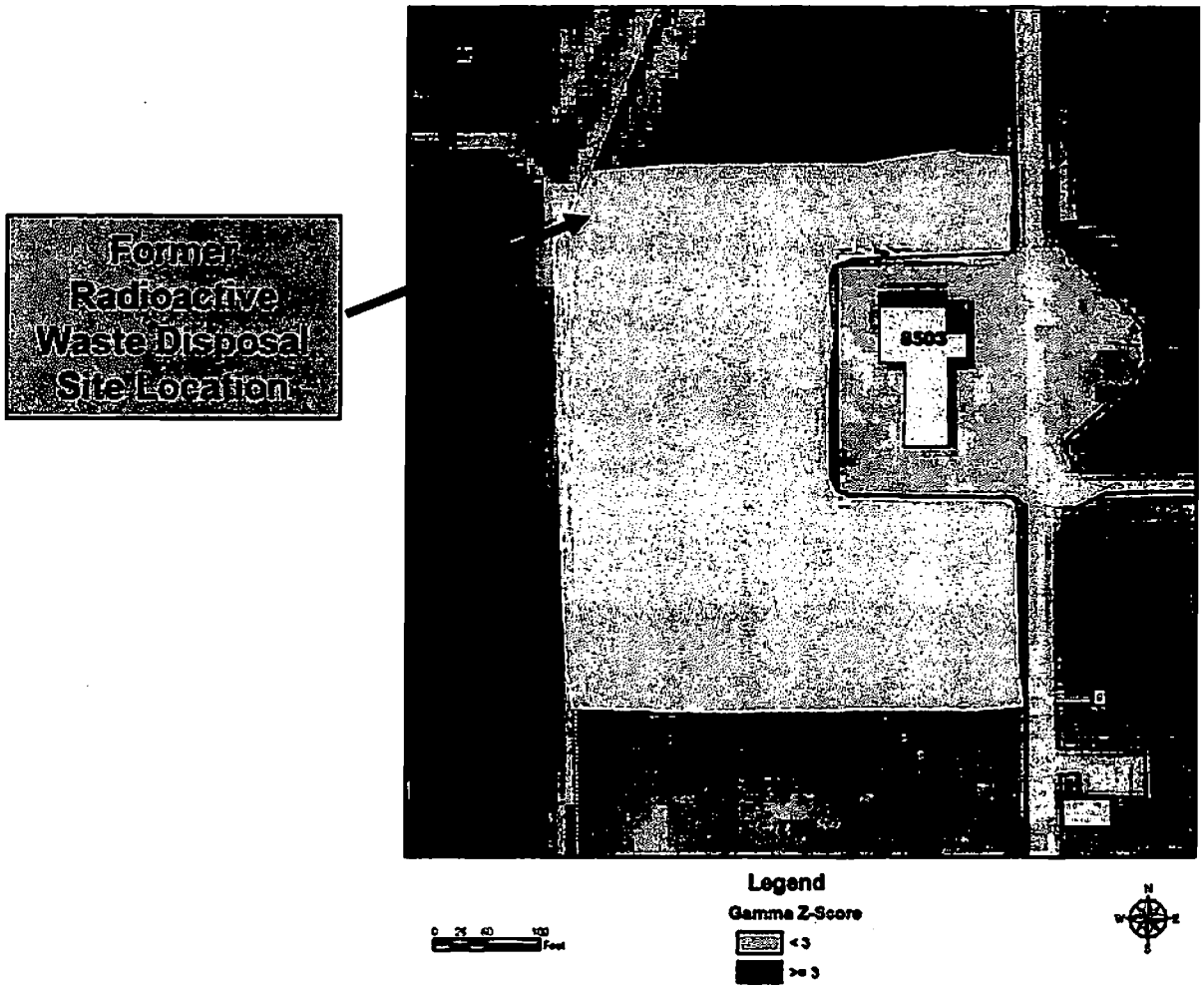
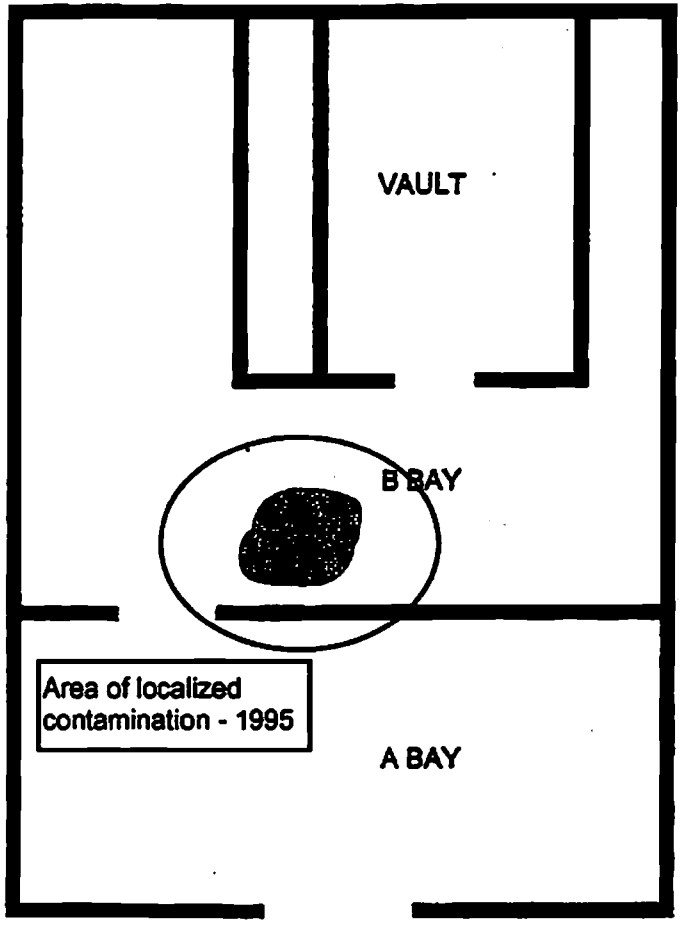
Results of Gamma Walkover Survey for Building 8503



U.S. AIR FORCE

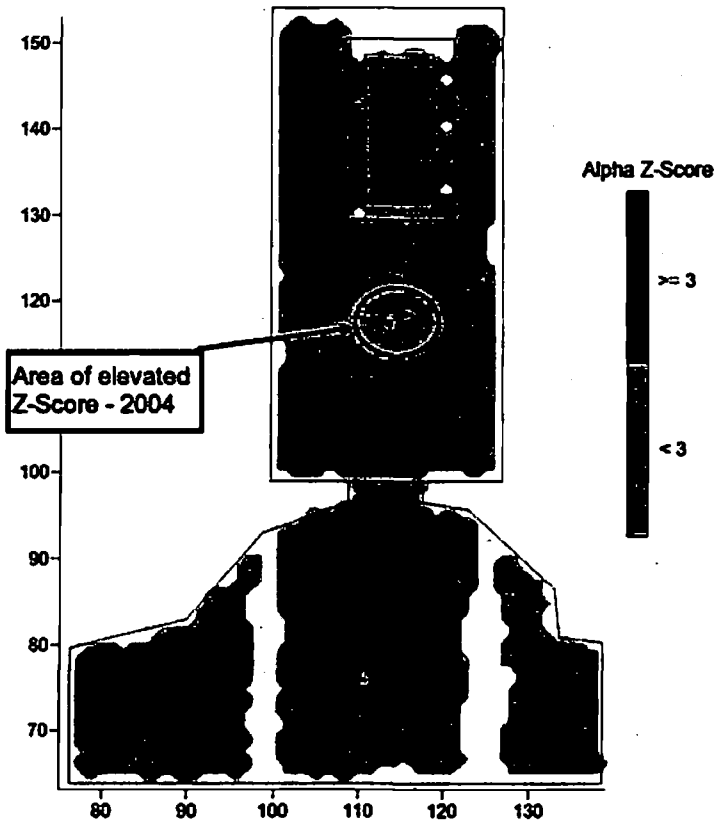
Results of 1995 Radiological Survey for Bunker 8531



- Air Force survey of WSA facilities in 1995 identified three localized areas of radioactive contamination in Bunker 8531
- Follow-up Air Force evaluation concluded contamination below release criteria in NRC Regulatory Guide 1.86 (i.e., releasable for public use)
- Findings considered in WSA Final Closure Report (2001)

U.S. AIR FORCE

Results of 2004 Radiological Survey for Bunker 8531



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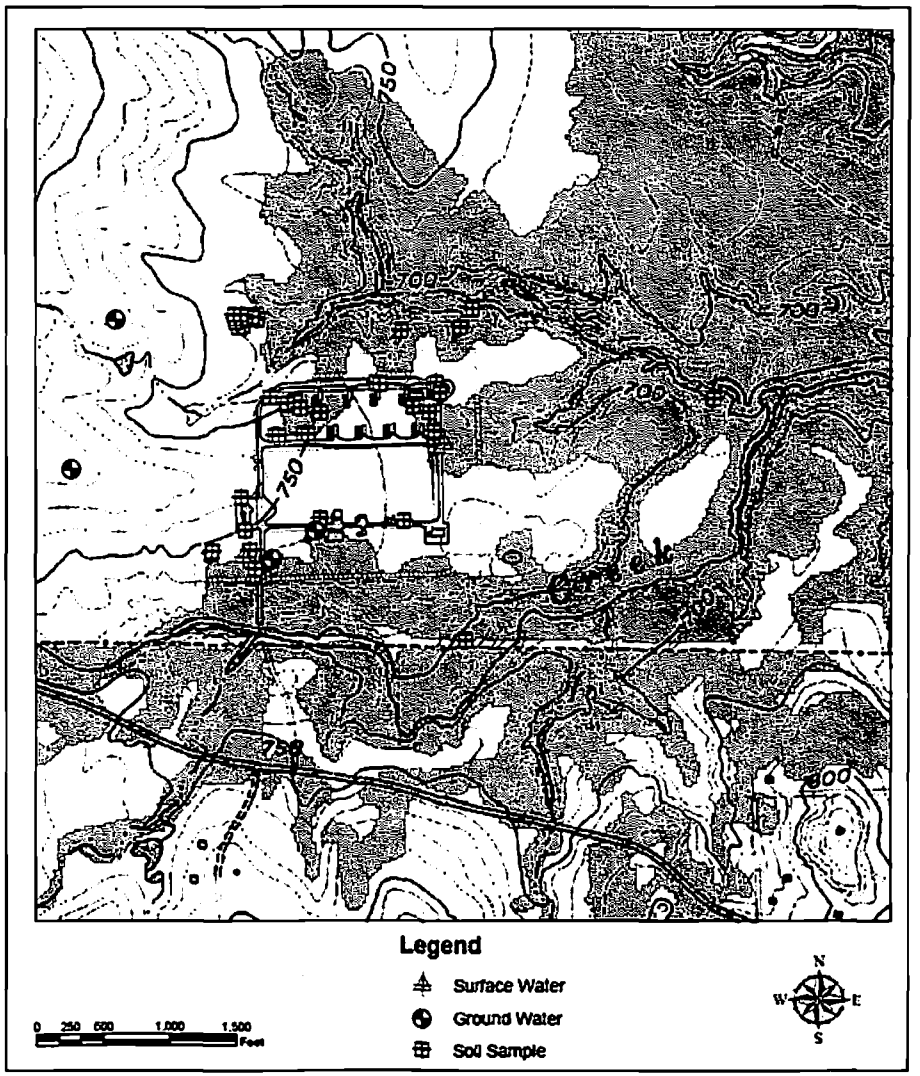
Water and Soil Sample Locations



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Geophysical Survey: Purpose

- Identify subsurface anomalies (potential burial or disposal locations for maintenance wastes)
- Prioritize identified anomalies

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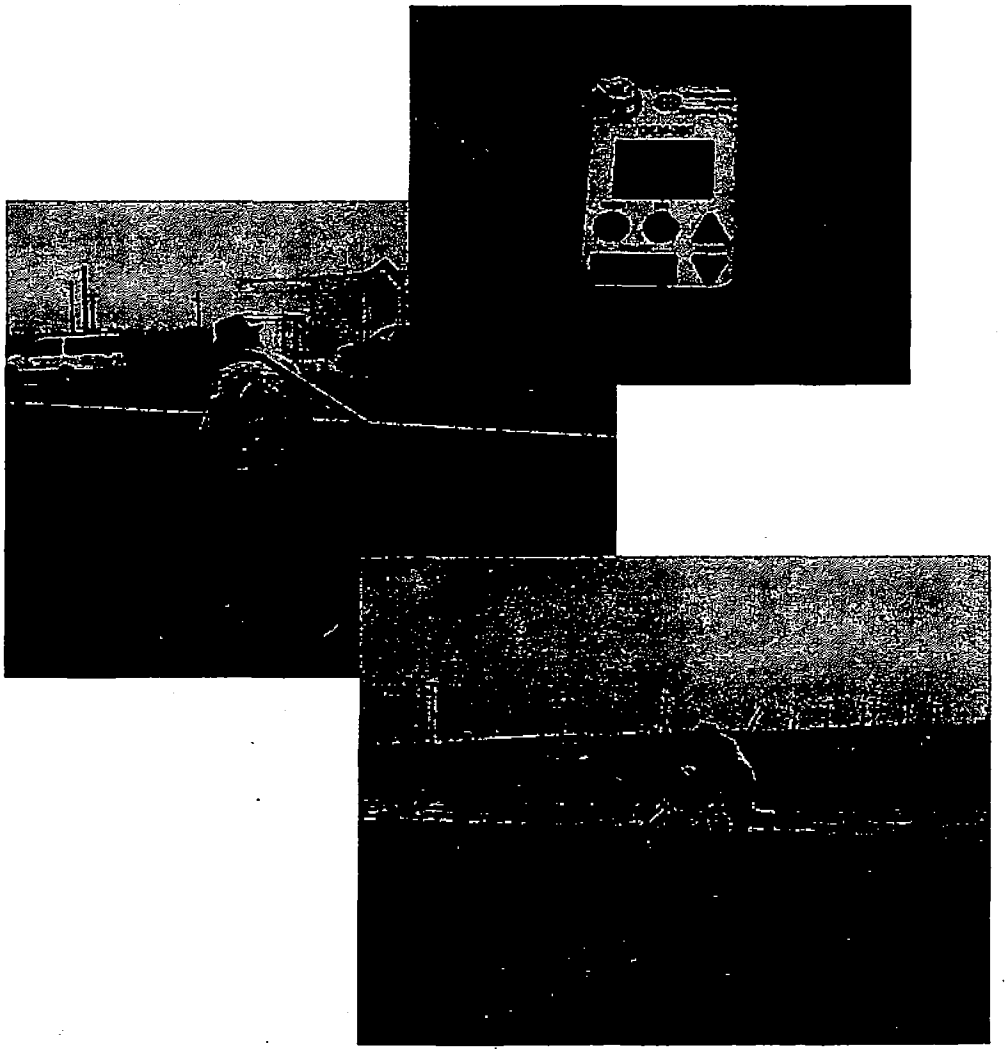
Where were geophysical surveys done?

- Areas where the burial of waste materials generated by weapons maintenance would most likely have occurred:
  - Near old M&I building (8503)
  - Near former capsule bunkers (8531 & 8533)
  - Near area of elevated radiological activity (Bunker 8552)

U.S. AIR FORCE

Geophysical Survey – Carswell Offbase WSA

- **Multi-frequency Electromagnetic Profiling: GEM 300**
- **Ground Penetrating Radar: GSSI SIR 3000**



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Electromagnetic Profiling

- GEM 300 Multi-frequency EM Profiler collects EM data at several frequencies simultaneously, at a rate of up to 10 readings per second
- Traverses 1.5 meters apart
- Produces very detailed contours of shallow subsurface (up to 15 feet deep)

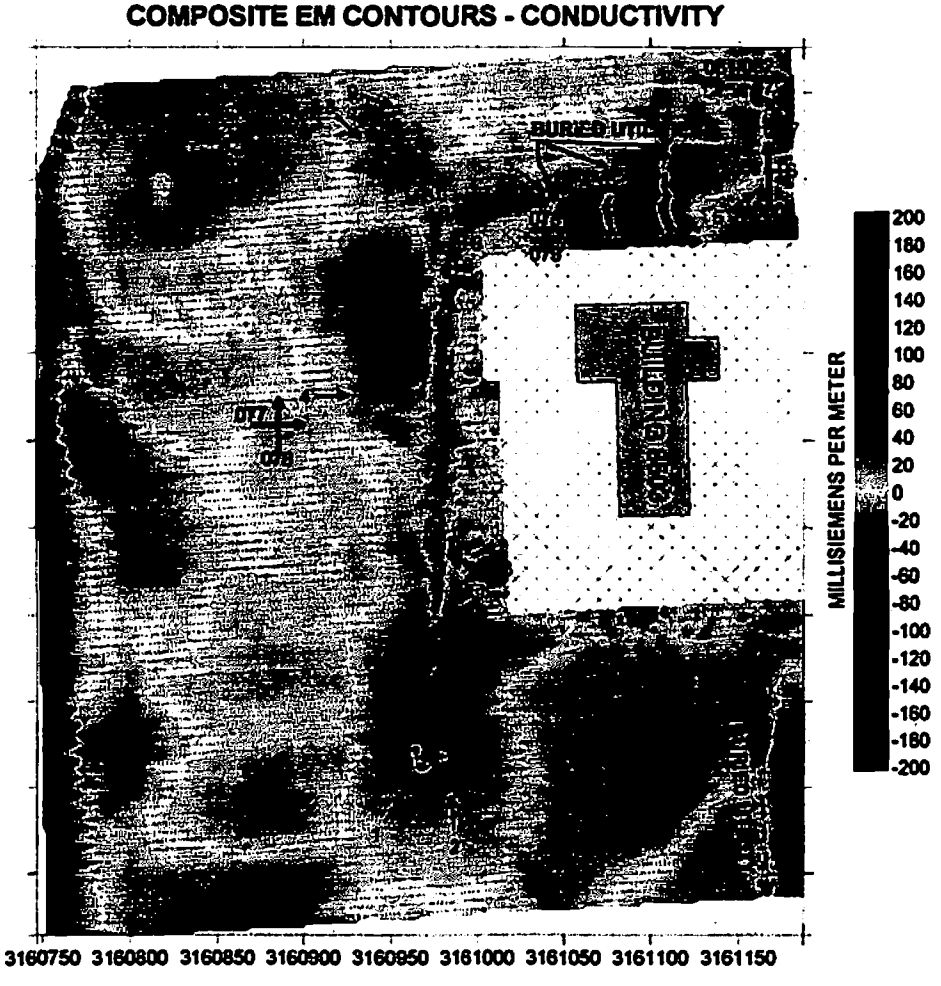
U.S. AIR FORCE

Ground Penetrating Radar

- Used to map utilities, edges of disposal areas
- Used to further define electromagnetic anomalies that could represent buried disposal areas

U.S. AIR FORCE

Electromagnetic Contours – Adjacent to Building 8503



U.S. AIR FORCE

Summary

- Initial interpretation of geophysical results do not indicate that another disposal site is present
- Direct reading instrument results suggest no radiation contamination in soils around bunkers and weapons maintenance areas
- One area in Bunker 8531 is above background (previously identified in 1995)
- Surface soil, surface water, and ground water samples are currently being analyzed
- Results from sample analyses will be provided to regulators in June 2004
- Draft PA/SI will be provided to regulators in July 2004

Air Force Center for Environmental Excellence

Promoting Readiness through Environmental Stewardship

NAS Fort Worth JRB Installation Restoration Program Update

Michael R. Dodyk, P.E.
AFCEE
May 13, 2004

Installation Restoration History

- **The Air Force is responsible for cleanup of environmental contamination that occurred prior to October 1, 1993 (while Carswell AFB was active.)**
- **A total of 87 sites were identified that required investigation and closure.**
  - **68 Solid Waste Management Units (SWMU)**
  - **19 Areas of Concern (AOC)**

Site Closure Update

- To date, the Air Force has received closure on 82 of the 87 sites (5 sites remaining).
- Of the 5 remaining sites, 4 will be closed by 12/30/04 (SWMUs 28, 54, 55, 66)

Field Activities

- **Confirmation sampling for vegetable oil injection demonstration occurred during March. Results are pending.**
- **Quarterly groundwater sampling at the former base gas/service station (AOC 1) occurred in late April 2004 and results are pending.**
- **Three additional monitoring wells are being installed this week for PRB performance monitoring.**

Upcoming Work

Upcoming Field Work – Summer 2004:

- AOC 1 quarterly groundwater monitoring in July 2004

Documents to be prepared:

- Draft Historical Report will be submitted to AFCEE for review in May 2004.
- Draft RFI of SWMUs 54 and 55 will be submitted to AFCEE for review in June 2004.
- Final RFI of SWMU 28 will be submitted to regulators in June.

Radiological Survey: Purpose

- Identify surface soils in outdoor areas with elevated levels of residual radioactivity
- Results will be used to determine if additional investigations are needed.

Where were radiological surveys done?

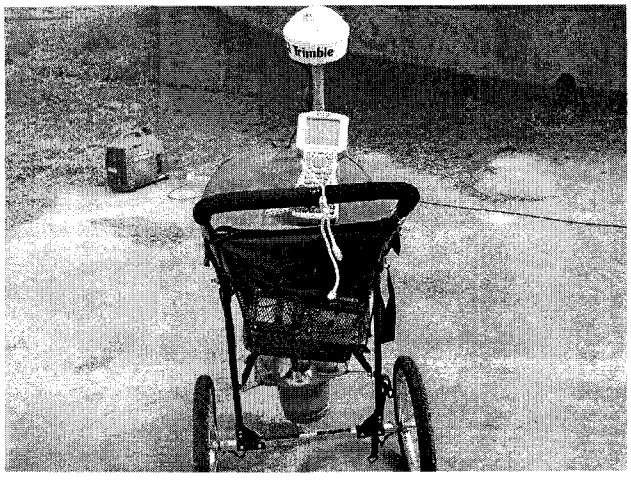
- In locations with the highest potential for residual radioactivity:
  - Potential disposal or burial locations
    - Near old M&I building (8503)
    - Near former capsule bunkers (8531 and 8533)
    - In area of elevated radiological activity (Bunker 8552)
    - In area around production well with slightly elevated radiological levels

Radiological Survey – Carswell AFB

- Gamma Walkover Survey
  - Identify areas of potentially elevated activity that require additional characterization.
  - Survey used a FIDLER (Field Instrument for Detection of Low Energy Radiation)
- ISOCS *(In Situ* Object Counting System)
  - An instrument that takes measurements to identify specific radionuclides, provide an estimate of activity levels
  - To quantify activity at locations of elevated activity by FIDLER
- Surface Soil Measurements
  - Samples were collected at biased locations, measured with ISOCS, and submitted to offsite laboratory for confirmation of field results
- Groundwater and surface water sampling
  - (2 groundwater – 5 surface water – results pending)

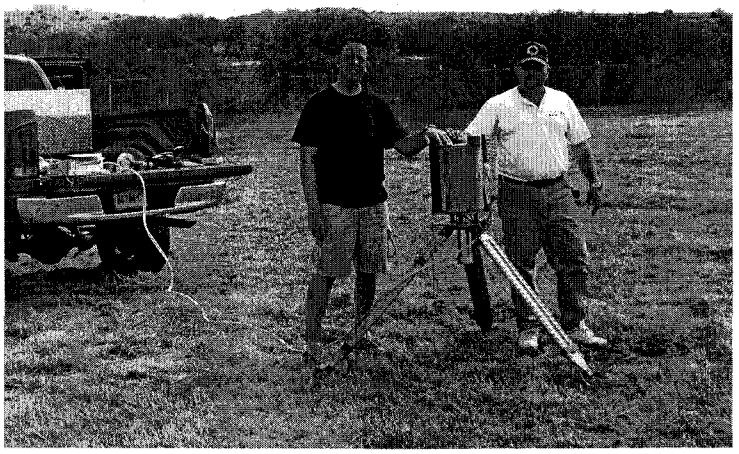
Gamma Walkover Survey

FIDLER mounted on "baby buggy" with Global Positioning System



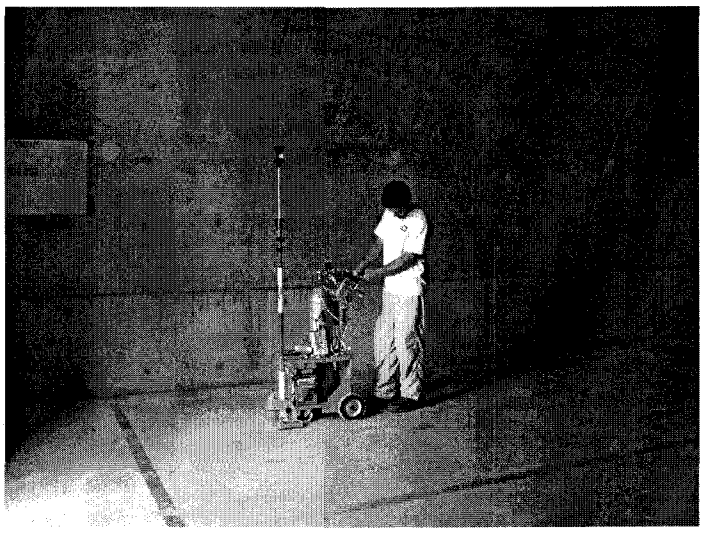
ISOCS Measurements

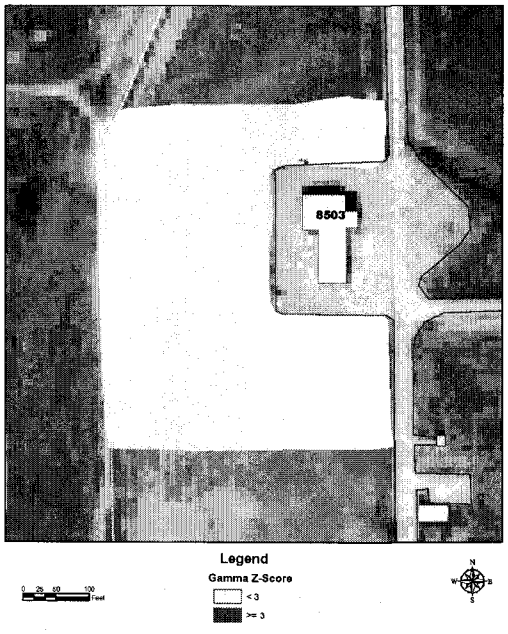
(*In Situ* Object Counting System)



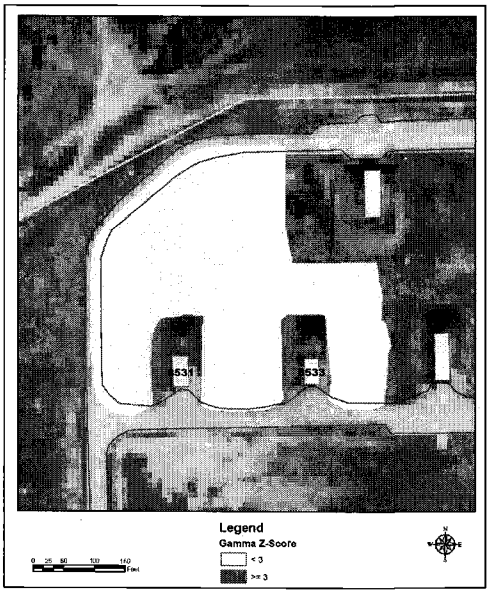
Interior Measurements

(Gas Proportional Floor Monitor)

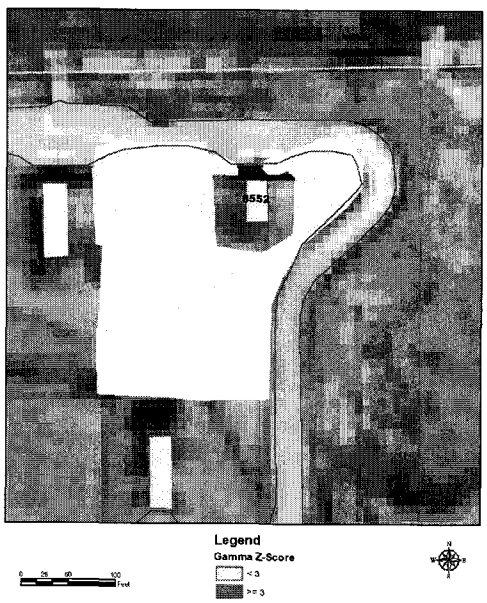




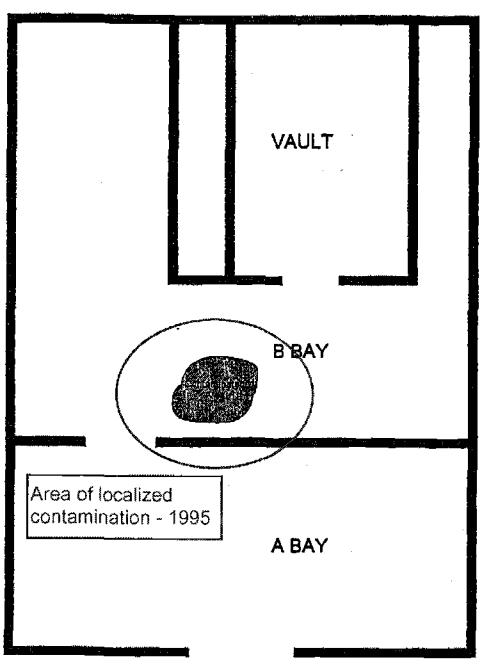
Results of Gamma Walkover Survey – Building 8503



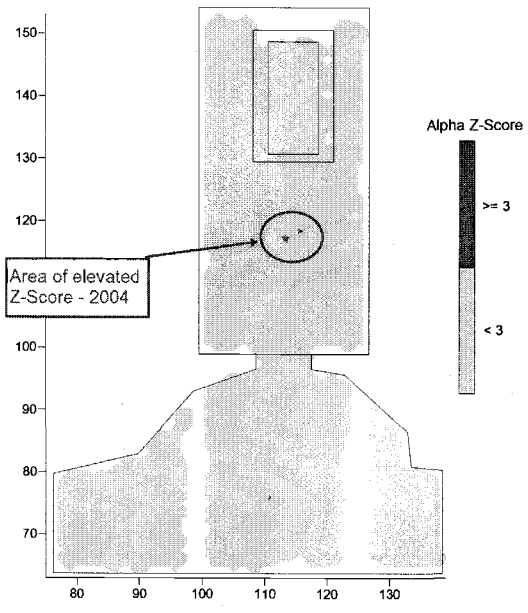
Results of Gamma Walkover Survey – Bunkers 8531 & 8533



Results of Gamma Walkover Survey – Bunker 8552



Results of 1995 Radiological Survey – Bunker 8531



Results of 2004 Radiological Survey – Bunker 8531

Geophysical Survey: Purpose

- Identify subsurface anomalies (potential burial or disposal locations for maintenance wastes)
- Prioritize identified anomalies

Where were geophysical surveys done?

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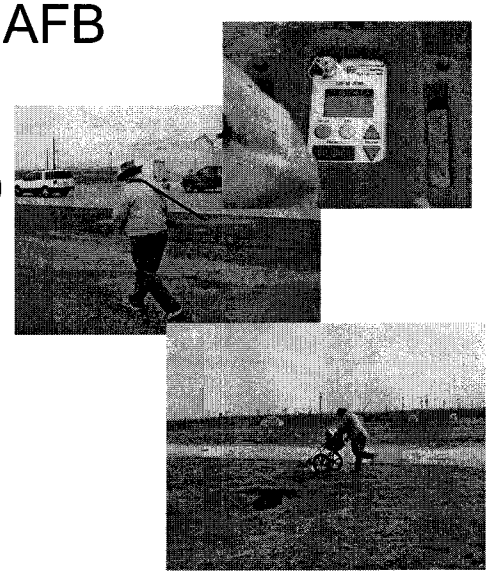
  - Near former capsule bunkers (8531 & 8533)
  - Near area of elevated radiological activity (Bunker 8552)

Geophysical Survey – Carswell AFB

- Multi-frequency Electromagnetic Profiling – GEM 300
- Ground Penetrating Radar – GSSI SIR 3000



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Ground Penetrating Radar

- Used to map utilities, edges of disposal areas
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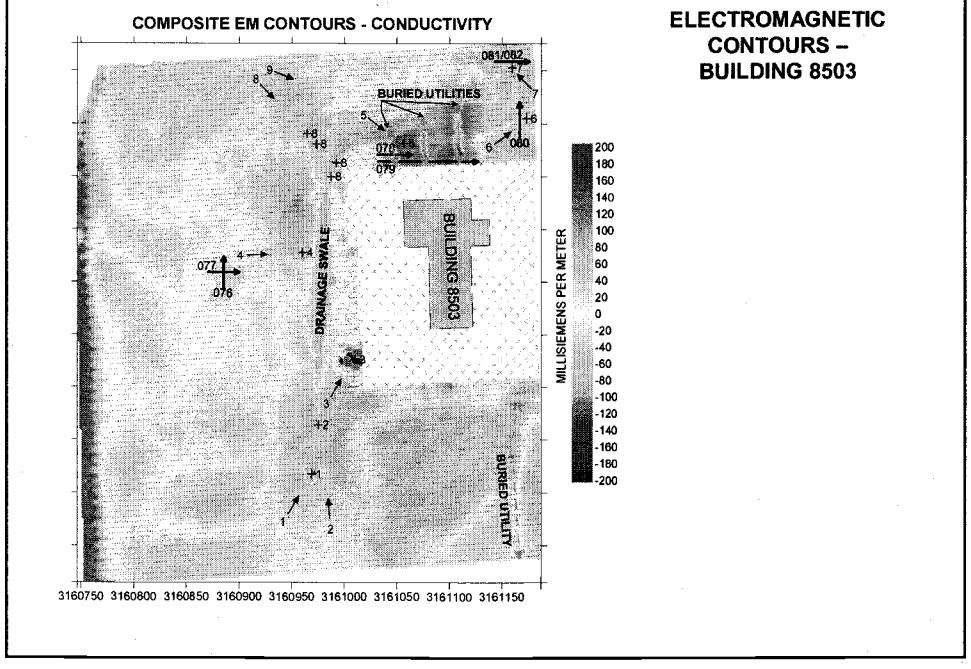
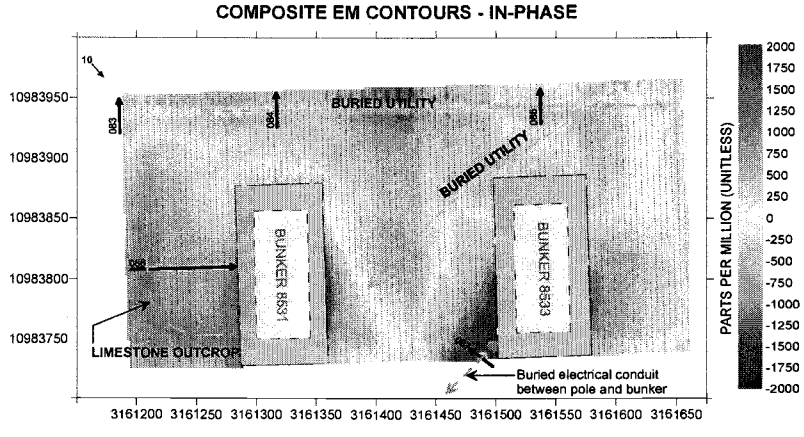


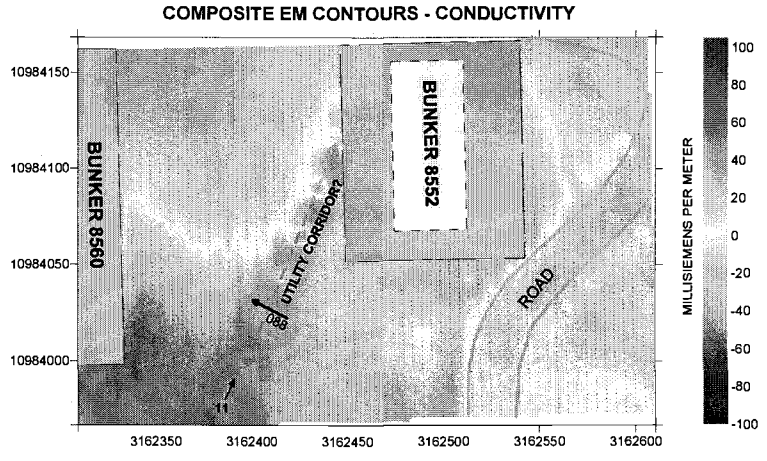
ELECTROMAGNETIC CONTOURS – BUILDING 8503

ELECTROMAGNETIC CONTOURS
CAPSULE BUNKERS 8531 & 8533



ELECTROMAGNETIC CONTOURS

BUNKER 8552



RESULTS

- Geophysics
  - Several EM anomalies investigated with ground penetrating radar (culverts and buried utilities)
  - One minor anomaly 175 feet west of Building 8503 investigated with ground penetrating radar – no buried materials identified
  - No anomalies interpreted to be a former disposal area
- Radiological
  - One area with elevated Z-Scores was identified (Building 8531)
  - Still waiting for swipe, soil, and water sample results

FINAL PAGE

ADMINISTRATIVE RECORD

FINAL PAGE