

FORT RILEY CERCLA
ADMINISTRATIVE RECORD
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FIVE-YEAR REVIEW REPORT



Installation Restoration Program

Fort Riley, Kansas

August 2002



EXECUTIVE SUMMARY

The Five-Year Review Report is required by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) section 121 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) when hazardous substances, pollutants, or contaminants remain at a site. A Five-Year Review Report is due no less than five years after a specific trigger date that depends on what has occurred at the site to ensure the protection of human health and the environment. The Environmental Protection Agency (EPA) has interpreted Title 40 Code of Federal Regulations section 300.430(f)(4)(ii) to require that the lead agency review any action that left hazardous substances, pollutants, or contaminants above levels that allow for unlimited use and unrestricted exposure no less than every five years.

The review was conducted by the Fort Riley Directorate of Environment and Safety, the Kansas City District-Corps of Engineers, and Wenck (a contractor under contract to the Corps) personnel from September 2001 to January 2002. The inspections were performed at the Southwest Funston Landfill, Operable Unit 001 and the Pesticide Storage Facility, Operable Unit 002.

The trigger date for this report has been determined to be the signature for the Record of Decision for the Southwest Funston Landfill. That date is August 6, 1997, thus requiring the first Five-Year Review Report to be completed no later than August 6, 2002.

The report covers the Southwest Funston Landfill and the Pesticide Storage Facility with a detailed background description and Removal/Remedial Actions instituted, as these are the two sites that have reached Records of Decision. The Dry Cleaning Facilities Area, Operable Unit 003, the Former Fire Training Area-Marshall Army Airfield, Operable Unit 004, the 354 Area Solvent Detections Site, Operable Unit 005, the Open Burning/Open Detonation Ground, the Camp Funston Ground Water Detections, the Old Incinerator Site Southeast Funston, the Forsyth Landfill(s), and the POL/UST Sites backgrounds are discussed only briefly as they are still in the Remedial Investigation/Feasibility Study phase of work or being worked under the Resource Conservation and Recovery Act. The CERCLA Response Complete sites are listed as to the category found in their respective decision documents.

The Technical Assessment portion of the report determines if the remedies selected in the Records of Decision are still functioning as intended in those documents. This was done for the Southwest Funston Landfill and the Pesticide Storage Facility. There was no indication in the analyses that pointed to a failure of the selected remedy for either of the two sites considered.

Based on the data and analyses contained in the report and the review of all associated documentation, it was determined that the current and future protectiveness of the remedies contained in the Records of Decision continue to safeguard human health and the environment.

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ACRONYMS AND ABBREVIATIONS

AEC	Army Environmental Center
ARAR	Applicable or Relevant and Appropriate Requirement
BLRA	Baseline Risk Assessment
BTEX	Benzene, Toluene, Ethylbenzene, and Xylene
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
COC	Chemical of Concern
CFR	Code of Federal Regulations
DCFA	Dry Cleaning Facility Area, Operable Unit 003
DES	Directorate of Environment and Safety
DG/GS	Direct Support /General Support
DPW	Directorate of Public Works
DSERTS	Defense Site Environmental Restoration Tracking System
EE/CA	Engineering Evaluation/Cost Analysis
EPA	Environmental Protection Agency
FFA	Federal Facilities Agreement
FFTA-MAAF	Former Fire Training Area-Marshall Army Airfield, Operable Unit 004
FORSCOM	Forces Command
FS	Feasibility Study
ICP	Institutional Controls Plan
IRP	Installation Restoration Program
IRIS	Integrated Risk Information System
KCD-CoE	Kansas City District-Corps of Engineers
KDHE	Kansas Department of Health and Environment
KSU	Kansas State University
LTGWMP	Long-Term Ground-Water Monitoring Plan
LTM	Long-Term Monitoring
LUMP	Land Use Management Plan
MCL	Maximum Contaminant Level
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
OU	Operable Unit
PAH	Polycyclic Aromatic Hydrocarbon

PA/SI	Preliminary Assessment/Site Investigation
POL	Petroleum, Oil, Lubricant
PP	Proposed Plan
PSF	Pesticide Storage Facility, Operable Unit 002
PX	Post Exchange
RAB	Restoration Advisory Board
RCRA	Resource Conservation and Recovery Act
RfD	Reference Dose
RI	Remedial Investigation
ROD	Record of Decision
RPMP	Real Property Master Plan
RRA	Residual Risk Assessment
SDWA	Safe Drinking Water Act
SEFL	Southeast Funston Landfill
SFL	Southwest Funston Landfill, Operable 001
SVE	Soil Vapor Extraction
SVOC	Semi-Volatile Organic Compound
TMP	Transportation Motor Pool
TPH	Total Petroleum Hydrocarbon
USGS	U.S. Geological Survey
UST	Underground Storage Tank
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound
XRF	X-Ray Fluorescence
354	354 Solvent Detections Area, Operable Unit 005
gpm	gallons per minute

Five-Year Review Report

I. Introduction

The Purpose of the Review

The purpose of five-year reviews is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in Five-Year Review reports. In addition, Five-Year Review reports identify issues found during the review, if any, and recommendations to address them.

Authority for Conducting the Five-Year Review

Fort Riley is preparing this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) section 121 and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). If a remedial action results in any hazardous substances, pollutants, or contaminants remaining at the site, no less than each five years after the initial remedial action a review shall be done to assure the continued protection of human health and the environment. Further, the Environmental Protection Agency (EPA) interpreted the Title 40 Code of Federal Regulations (CFR) section 300.430(f)(4)(ii) to require that the lead agency review any such actions that left hazardous substances, pollutants, or contaminants above levels that allow for unlimited use and unrestricted exposure no less than every five years.

Review Participants

The Fort Riley Directorate of Environment and Safety (DES) conducted a five-year review of the removal actions implemented at the Southwest Funston Landfill (SFL), Operable Unit (OU) 001, and the former Pesticide Storage Facility (PSF), OU 002, at Fort Riley, Kansas. This review was conducted from September 2001 through January 2002. This report documents the results of the review. The principal author of this report is Dr. Richard Shields, Installation Restoration Program Project Manager within the Fort Riley DES. Dr. Richard Van Saun, Project Manager at the Kansas City District-Corps of Engineers (KCD-CoE), provided assistance in the preparation of this review. Debra Snodgrass, Risk Assessor at the Kansas City District-Corps of Engineers (KCD-CoE), performed a review for any changes in toxicity values to determine if there were increased risk potentials. The site inspections at the SFL were performed by Dr. Richard Van Saun, Wenck Associates, Inc. (under contract to the Corps of Engineers), and Fort Riley personnel. The inspections at the PSF were performed by Fort Riley personnel. Drafts were reviewed by Debora Richert, Craig Phillips, Harry Hardy, Dr. Richard Van Saun and Debra Snodgrass of the KCD-CoE, Craig Bernstein of the EPA, Rob Weber of the KDHE, George Gricius of the U.S. Army Forces Command (FORSCOM), and Joe King of the Army Environmental Center (AEC). The EPA and the KDHE representatives were given an invitation to do site inspections.

Operable Units

This is the first five-year review for the Fort Riley Federal Facility site. The review addresses OUs SFL and PSF for which Records of Decision (RODs) have been completed and where hazardous substances, pollutants, or contaminants were left on site above levels that allowed for unlimited use and unrestricted exposure. The triggering action for this specific review is the date of the ROD signature for SFL. It is no less than the five years mandated by statute but based on what has occurred at the site.

Three other OUs have been designated at Fort Riley and are currently in the Remedial Investigation/Feasibility Study (RI/FS) phases. These OUs are:

OU 003	Dry Cleaning Facilities Area (DCFA)
OU 004	Former Fire Training Area-Marshall Army Airfield (FFTA-MAAF)
OU 005	354 Area Solvent Detections Site (354)

Currently, additional RI/FS activities are being performed at DCFA, the FS is underway for the FFTA-MAAF, and RI activities are being conducted at 354.

II. Site Chronology

Table 1: Chronology of Site Events	Southwest Funston Landfill	Pesticide Storage Facility
NPL listing, effective	October 1, 1990	October 1, 1990
Federal Facility Agreement, effective	June 28, 1991	June 28, 1991
Landfill Operations Began	1950s	NA
Landfill Operations Ceased	1981	NA
Landfill Closed, Approved by KDHE	1983	NA
RI Report Completed/RI Addenda	April 1994	December 1993/ August 1997
FS Report Completed	April 1994	May 1995
Initial Discovery of Problem or Contamination	April 27, 1984	July 1, 1974
Removal Actions		
Action Memorandum	December 1993	December 1993
Riverbank Stabilization	Spring 1994	NA
Cover Repair/Removals	Fall 1994 - Spring 1995	June 1994
Cover "Improvements"	1997/2002	NA
Removal Action Report	June 1997	June 1997
Proposed Plan	November 1994	August 1997
ROD Signature	August 6, 1997	September 1, 1997
Enforcement Documents (Unilateral Admin Order)	NA	Fined -1993
Remedial Design	March 1996	NA

III. Background

Fort Riley was established as a temporary camp in 1852 known as Camp Center. In 1853, it was re-named Fort Riley in honor of Major General Bennett Riley and became a permanent Cavalry post. The post served as the Cavalry and Light Artillery schools from the 1880s to the 1940s. It trained and deployed soldiers in every major conflict in our nation's history since the post's founding. The installation is situated along the Kansas and Republican Rivers in Riley, Clay, and Geary Counties in north-central Kansas, near the cities of Manhattan, Ogden, Junction City, Riley, and Grandview Plaza, Kansas. The installation comprises approximately 101,000 acres.

Fort Riley is located in the Flint Hills region of Kansas that lies within the Osage Plains section of the Central Lowlands physiographic province. The general topography around Fort Riley consists of uplands incised by steep drainage features. Terrain on the installation varies from narrow alluvial bottomlands in the uplands, to wide meander floodplains and associated terraces along the Republican and Kansas Rivers, to steep slopes, and to slightly dipping uplands. This topographic expression is developed on Permian-aged limestones and shales that dip very gently to the west-northwest. The limestones form resistant ridges and the shales are easily eroded to form the stream valleys.

The Fort Riley reservation has historically functioned both as a small municipality and light industrial complex. Solid waste disposal (landfilling), wastewater treatment and discharge, facilities maintenance and construction, pesticide usage, dry cleaning operations, and electrical equipment installation, storage, and repair, are among the environmentally significant municipal activities at Fort Riley. Fort Riley's function as a military training, equipment supply, and maintenance center has required management and disposal of wastes associated with these activities. The Interim Final Report-Hazardous Waste Management Consultation No. 37-26-0190-89 Evaluation of Solid Waste Management Units Fort Riley, Kansas 9-13 May 1988 delineated potential contaminated sites and was done by the U.S. Army Environmental Hygiene Agency. An Installation Wide Site Assessment for Fort Riley, Kansas was completed February 16, 1993 and it contained further analysis and definition of potential contaminated sites.

Pursuant to section 105 of CERCLA, Fort Riley was proposed for inclusion on the National Priority List (NPL) on July 14, 1989 and the listing became effective October 1, 1990. Three sites were combined by the EPA and reported as one site for Hazard Ranking System scoring purposes. Those three sites were the Pesticide Storage Facility, the Southwest Funston Landfill, and the Main Post Landfill. To ensure that environmental impacts associated with activities at the installation were thoroughly investigated and appropriate remedial action taken, Fort Riley, the EPA, and the Kansas Department of Health and Environment (KDHE) entered into a Federal Facility Agreement (FFA), dated February 28, 1991. The FFA specifically required that the Southwest Funston Landfill and Pesticide Storage Facility sites be addressed through the Remedial Investigation/Feasibility Study (RI/FS) process.

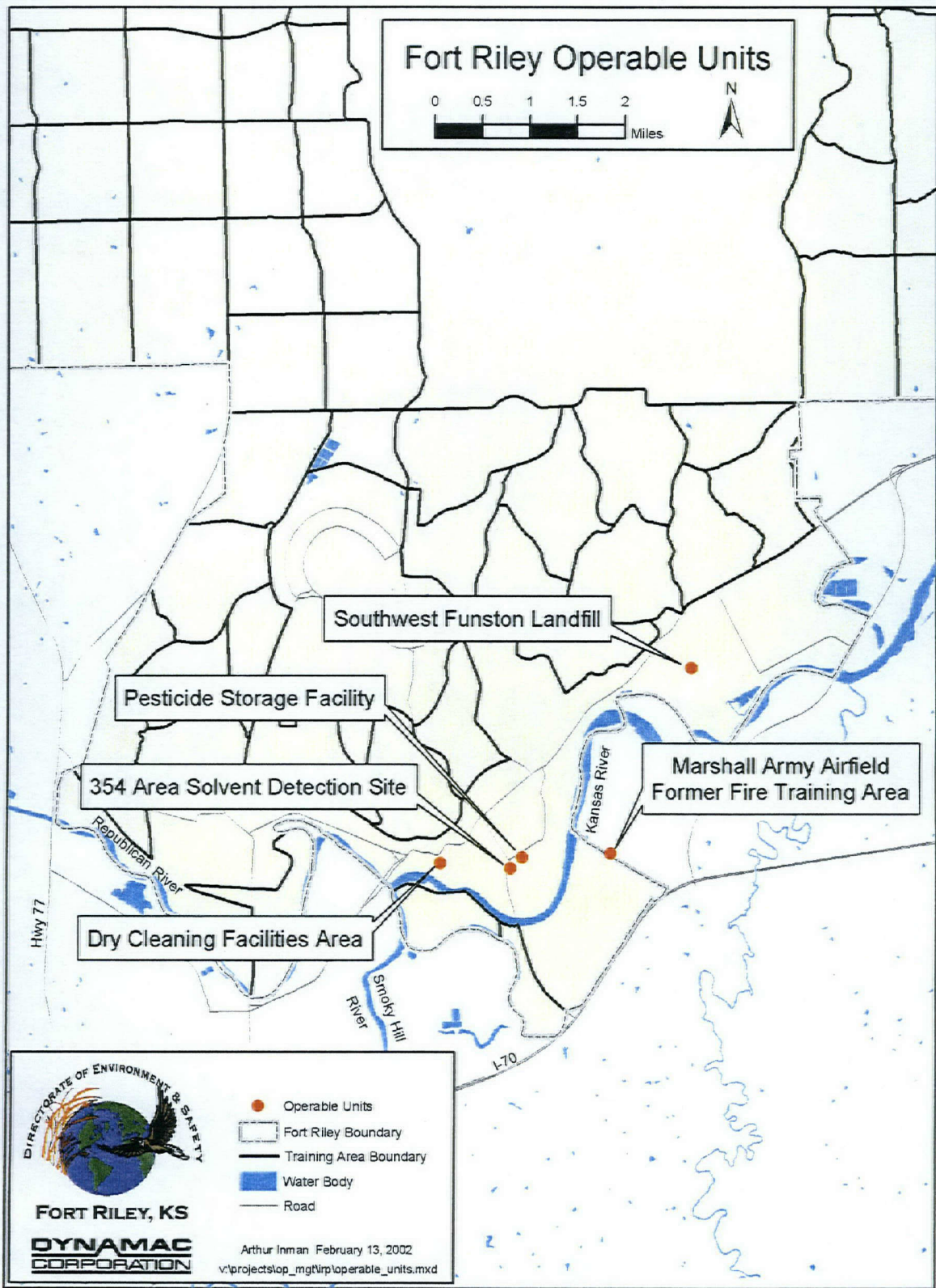


Figure 1 Location of Operable Units

A full evaluation of Applicable or Relevant and Appropriate Requirements (ARARs) was conducted in a technical memorandum for the Former Fire Training Area-Marshall Army Airfield on January 17, 2002. The ARARs contained in this document were the same as the ones that applied to both the Southwest Funston Landfill and the Pesticide Storage Facility. There were no substantive changes determined to exist. Therefore, based on the analysis of the ARARs contained in the Records of Decision and the detailed analysis of ARARs covering the same types of overall conditions and chemicals at FFTA-MAAF, the ARARs are considered still adequate and no further review is necessary.

A. Southwest Funston Landfill (SFL), Operable Unit 001

The Southwest Funston Landfill (SFL) covers approximately 120 acres in the southern portion of Fort Riley, adjacent to the southwest corner of the Camp Funston cantonment area. See Figures 1, 2, and 3. The limits of the SFL extend from the north bank of the Kansas River north to near Well House Road, and east from the pre-1951 flood Kansas River channel to just west of Threemile Creek. The SFL site lies entirely within the 100 and 500-year floodplains of the Kansas River. The nearest surface-water impoundment to the SFL is Whitside Lake, an oxbow lake located about 0.5 miles northwest of the SFL site. This oxbow lake was part of the Kansas River channel prior to the 1951 flood that changed the course of the Kansas River. During flooding in 1993, floodwater passed through the lake following the course of the former channel. Sediment was deposited by the floodwater and that substantially reduced the size of the lake.

Currently, the entire site is within a zone designated as "Open Space" and annotated as "Restricted" in the Fort Riley Real Property Master Plan (RPMP) dated September 24, 2001. The projected land use will not change.

The SFL is located in the alluvial bottomlands adjacent to the Kansas River, with little topographic relief compared to the surrounding land surface. The landfill area was graded and a continuous soil cover was constructed as part of the KDHE approved closure activities in 1983. The area was seeded with native grasses. The SFL was bounded by agricultural land to the west (which has not been used since the 1993 flood) and the Camp Funston cantonment area to the east. The SFL site slopes very gently toward the east-southeast. Steep slopes exist along the banks of the Kansas River to the south and along Threemile Creek to the east.

The SFL operated from the mid-1950s to 1981, receiving wastes that included typical municipal waste and industrial wastes from various activities at the installation. Some of these industrial wastes were reported to have contained hazardous substances and were thus identified as potential sources of contamination. The types of wastes generated by vehicle and aircraft maintenance shops, print shops, furniture repair shops, painting facilities, oil analysis laboratory, autoclaved biological waste, pesticide/herbicide storage and preparation, laundry and dry cleaning facilities, and wastewater treatment plants that were deposited in the landfill are the potential source of contamination at the SFL. The wastes may have included metal-laden oils, solvents, inks, paints and heavy metals, and dried wastewater treatment plant sludge. The landfill was closed in 1983.

The RI to characterize the contamination at the SFL site and a Baseline Risk Assessment (BLRA) evaluated the potential risk to human health and the environment. The RI Report is dated October

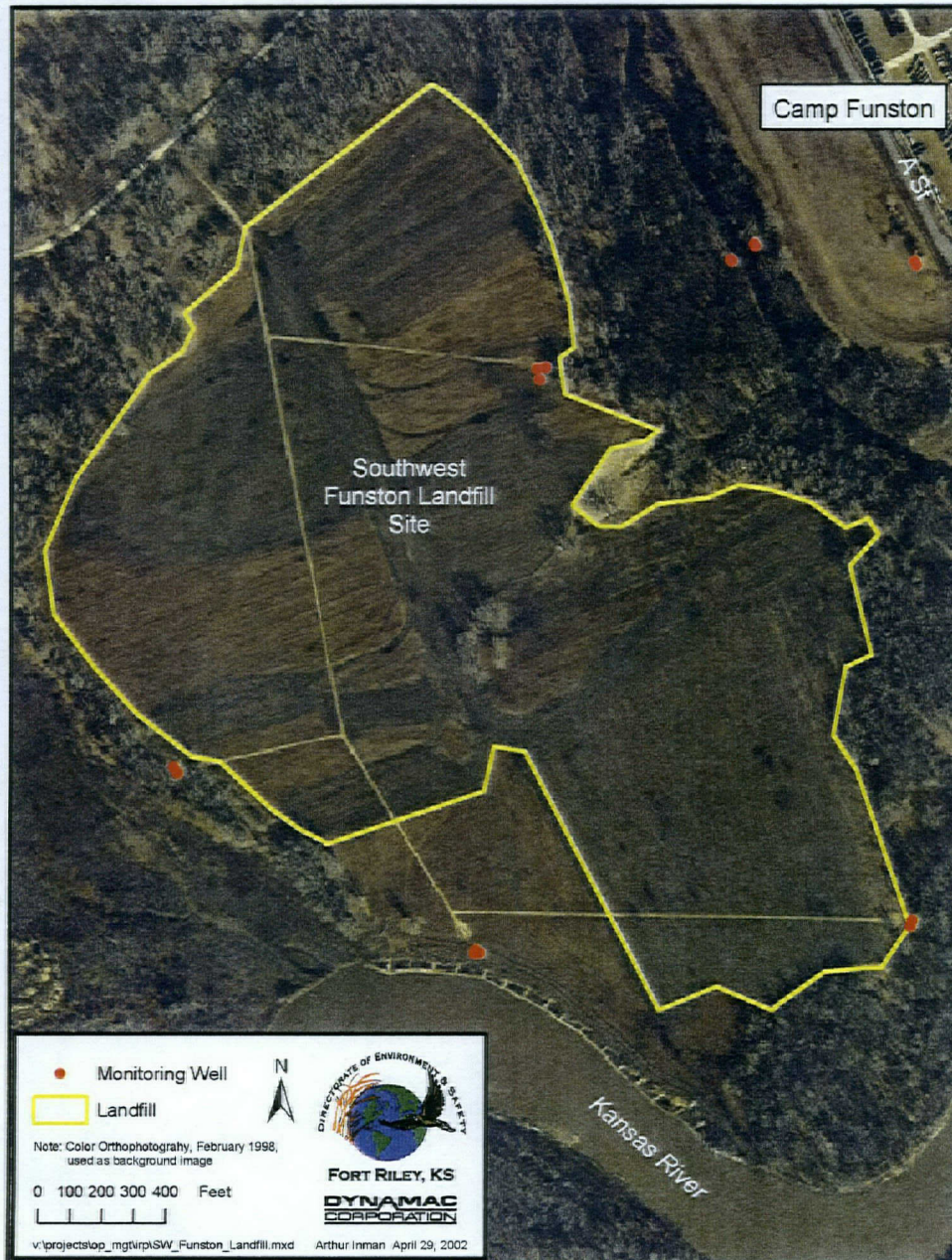


Figure 2 Detail of Southwest Funston Landfill



Figure 3 Digital Image of Southwest Funston Landfill

1993, with revisions dated April 1994. The revised RI was accepted by EPA Region VII without additional comment and approved with comment by the KDHE on April 20, 1994.

The BLRA found that, for a future hypothetical resident using an on-site well, the contaminants in the ground water posed a significant risk through the ingestion and, to a lesser degree, inhalation pathways. Chemicals of concern (COCs) were identified in the ROD as the metals; antimony, arsenic, beryllium, and organic chemicals; benzene, 1,2-dichloroethane, cis-1,3-dichloropropene, 1,1,2,2 tetrachloroethane, 1,1,2-trichloroethane, and vinyl chloride.

Concurrent with the performance of the RI/FS, an Engineering Evaluation/Cost Analysis (EE/CA) was performed to assess the appropriateness of taking a non-time-critical Removal Action at the SFL site. The intention of the removal activities proposed was to reduce the risk of exposing landfill contents by riverbank erosion and subsidence in the landfill. The actions would stabilize the Kansas River bank immediately adjacent to the landfill and repair the existing landfill cover. The results of that study are contained in an EE/CA report dated July 1993. A public comment period on the EE/CA report was provided from August 17 to September 16, 1993, although no public comments were received. A Removal Action Memorandum and Responsiveness Summary was submitted to the EPA and the KDHE in December 1993, and signed by Fort Riley and the KDHE on December 20, 1993. The riverbank stabilization project was initiated in January 1994 and completed in the spring of 1994. A cover repair project began in the fall of 1994 and construction activities were completed in 1995.

The FS Report was completed in April 1994. The EPA and the KDHE approved the study on May 16, 1994 and May 3, 1994 respectively. Fort Riley transmitted responses to comments received from the EPA and the KDHE on August 4, 1994. The removal actions discussed in the EE/CA report were elements of alternatives considered during the FS.

The Proposed Plan (PP) was issued as a supplement to the RI and FS Reports to inform the public of Fort Riley, the EPA, Region VII, and the KDHE's preferred remedy based on information included in the Administrative Record and to solicit public comments pertaining to the removal alternatives evaluated, including the preferred alternative. The PP described the removal alternatives considered for the SFL and identified the preferred remedial alternative with the rationale for this preference. Submitted on August 26, 1994, the Draft Final PP was accepted in November 1994.

A public comment period for this removal action was held from November 9, 1994 through December 9, 1994 to provide an opportunity for comment and to disseminate information regarding the PP. A public meeting was held at Fort Riley on November 15. At this meeting, representatives from the U.S. Army, the KDHE and the EPA were available to inform the public of the preferred alternative and record public comments. One newspaper reporter attended the public meeting and no comments were received prior to the end of the public comment period.

Concurrent with the completion of the ROD, Fort Riley proceeded with the implementation of additional landfill cover repairs under the Removal Action. This second construction project, accomplished between May 1996 and March 1997, was referred to as Cover Improvements, to differentiate it from the first effort. However, the scope of the second project was to accomplish

additional repairs to ensure sufficient thickness of cover across the landfill. The Removal Action activities are documented in a Removal Action Report dated June 23, 1997. A ground-water sampling event was conducted in September 2001 and a surface-water sampling event was conducted in July 2001 across the Kansas River. The surface-water sampling event across the Kansas River resulted in all non-detects. The Working Draft Cover Repair Plan was submitted on December 6, 2001. The SFL area was inspected in 2001 and the pertinent information can be found in the 2001 Annual Inspection Report, Southwest Funston Landfill, Operable Unit 001, Fort Riley, Kansas as prepared by the U.S. Army Corps of Engineers, Kansas City District for the Directorate of Environment and Safety and dated March 5, 2002.

The June 1999 ground-water sampling event for SFL/Camp Funston (CF) encompassed twenty-five wells. There were detections of vinyl chloride above MCLs in SFL92-403 (7ug/L), SFL92-601 (6.5ug/L), SFL94-03B (5.6ug/L); and SFL94-04B (5.4ug/L). SFL97-903 is 4.9ug/L. Benzene was encountered in two wells and cis-1,2-dichloroethylene was in four wells. The amounts were below MCLs. The April 2000 ground-water sampling event encompassed nineteen wells. There were detections of vinyl chloride above MCLs in SFL92-401 (8.2ug/L), SFL92-403 (8.8ug/L), and SFL92-601 (6.8ug/L) with well SFL94-02A having a detection of 1.5ug/L. Chlorobenzene was found in two wells. Benzene was found in one well. There was cis-1,2-dichloroethylene found in two wells. These chemicals were below the MCLs. The September 2000 ground-water sampling event encompassed nineteen wells and has detections of vinyl chloride in excess of the MCLs in SFL92-401 (7ug/L), SFL92-403 (7.9ug/L), and SFL92-601 (9.5ug/L). SFL92-603 had vinyl chloride at 1.8ug/L, SFL92-301 had 1,4-dichlorobenzene and chlorobenzene, SFL92-401 had 1,4-dichlorobenzene, chlorobenzene, and cis-1,2-dichloroethylene, SFL92-403 had cis-1,2-dichloroethylene, and SFL92-601 had 1,1-dichloroethane, 1,3-dichlorobenzene, benzene, cis-1,2-dichloroethylene, ethylbenzene, and m,p-xylenes that were all below MCLs. The April 2001 ground-water sampling event encompassed nineteen wells and had vinyl chloride detections above MCLs in SFL92-401 (10ug/L), SFL92-403 (11ug/L), and SFL92-601 (12ug/L). There were three estimated values that were below MCLs. The other data were either rejected or estimated. This lab was dropped in August 2001 as unable to meet quality assurance/quality control requirements, leaving some uncertainty about the data. The September 2001 ground-water sampling event encompassed nineteen wells and had detections of vinyl chloride in excess of the MCLs in SFL92-401 (5.7ug/L), SFL92-403 (5.6ug/L), and SFL92-601 (5.1ug/L). The rest of the COCs were non-detects.

B. Pesticide Storage Facility (PSF), Operable Unit 002

The Pesticide Storage Facility (PSF) site is situated on a terrace on the north side of the Kansas River valley, approximately 2,000 feet north and west of the Kansas River. See Figures 1, 4, and 5. The PSF site covers approximately 2/3 of an acre around building 348 and is located in the Main Post area. The site includes a portion of the Directorate of Public Works (DPW) storage yard, which is surrounded by a fence and has secured access. The site extends south of Dickman Avenue to the south-central edge of the Main Post cantonment area and southeast across the railroad tracks. Topographic elevations at the site are approximately twenty-five feet higher than the Kansas River. The ground surface east of the building 348 fence slopes downward toward the east-southeast at a grade of approximately 10 percent. There is an abrupt slope change just east of the PSF fence line.



Figure 4 Detail of Pesticide Storage Facility



Figure 5 Digital Image of Pesticide Storage Facility

Currently, the entire site is within a zone designated as "Industrial" and annotated as "Restricted" in the Fort Riley RPMP. The projected land use will not change.

Surface run-off across the site generally flows east-southeast as sheet flow, following the topography of the site. A lined drainage ditch runs from Dickman Avenue to the railroad tracks southeast of the site. Surface run-off in this channel proceeds southward under the railroad tracks and then flows into an unnamed tributary leading to the Kansas River.

Building 348 was constructed in 1941 as a general-purpose warehouse. Fort Riley records do not indicate when pesticides were first stored in building 348, however, interviews with Fort Riley personnel revealed that building 348 had been used for pesticide storage since at least 1973. Prior to the late 1970s, the maintenance/storage yard east of and adjacent to building 348 was used to wash down vehicles and spray equipment used for pesticide applications. Since at least 1976, the majority of pesticide application at Fort Riley has been performed by outside contractors who were not allowed to use the PSF site. During 1988, several polychlorinated biphenyl (PCB)-containing electrical transformers were stored in containers outside the southeast corner of building 348. Other items previously stored at the PSF site include paint, pesticides/herbicides, pressure-treated lumber, and various general improvement materials and equipment.

Site contamination at the PSF site was first revealed by Army pesticide-use monitoring studies conducted prior to 1990. Fort Riley initiated planning of the RI/FS in 1990 during the development of the FFA. Field activities began in the early spring of 1992. The results of the RI and a BLRA were presented in the RI Report dated July 1993, revised December 1993.

The chemicals of potential concern identified in the initial RI included pesticides, polycyclic aromatic hydrocarbons (PAHs), and metals. The pesticides most frequently detected in soils were chlordane, dichloro-diphenyl-trichloroethane (DDT) and DDT metabolites, and dieldren. Arsenic, chromium, and lead concentrations exceeded background levels in some samples while barium levels were consistent with background conditions. In the ground water, metals were detected at levels consistent with background levels, no pesticides were detected, and a single detection of toluene was registered.

Concurrent with the performance of the RI and BLRA activities, a non-time-critical Removal Action addressing contaminated soils was determined to be in order. An EE/CA was performed to determine if a Removal Action was appropriate to protect human health and the environment; to identify, evaluate, and recommend options for a Removal Action which could be incorporated into a permanent solution to remediate the site; and to develop a remedy that met the occupational safety and health requirements of site workers and allowed continued use of the site.

The public comment period for the EE/CA was held August 17, through September 16, 1993. A public meeting was held at Fort Riley on September 7, 1993. No comments were received during the public comment period. Subsequent to the finalization of the EE/CA, the Removal Action Memorandum was signed. The Action Memorandum Decision was to excavate and dispose of contaminated soil at the Peoria Disposal Company in Peoria, Illinois. The EPA and

the KDHE concurred with the Removal Action.

The Removal Action was undertaken on the basis of unacceptable risks presented in the BLRA based primarily on dermal exposures to contaminated soil at the site. The initial goals were generated from exposure scenarios for future site workers developed in the BLRA. These goals were very conservative (based on a carcinogenic risk level of 10^{-6} and the assumption that 100 percent of the chemical in contact with the skin would be absorbed). Additional exploratory sampling of the site revealed a greater than anticipated area of contamination based on the initial goals, a factor which would significantly increase the cost for remediation. With the exception of heptachlor, which was not a "risk driver", the goals for pesticides in soil were recalculated using more realistic dermal absorption factors in the Draft Final RI Addenda dated January 1997. The new dermal absorption factors represented the upper bound proportion of the pesticides that would be retained in the skin. These factors were approved by the EPA, Region VII.

The Removal Action Goals for arsenic were revised based on results of a background study in the RI Report Addendum: Comparison of Ground-Water Inorganic Concentrations in and Background Monitoring Wells, Pesticide Storage Facility, Fort Riley, Kansas dated June 14, 1996. This study determined that the data used in the statistical tests were sufficient to tell if all the wells were or were not at background concentrations. The analysis demonstrated that the arsenic distribution in the wells was equivalent to background concentrations. The conclusion was that removal actions to address ground water at the site were not necessary.

During performance of the Removal Action, the actual excavation limits were guided by sampling the sidewalls and bottom of the excavations to determine if the action levels had been met. A total surface area of less than 1/2 acre was excavated to a depth of between 1 and 8 feet below the land surface. A total of approximately 2,700 tons of excavated soils was taken to the Peoria Disposal Company of Peoria, Illinois that was approved to receive these materials for disposal. The excavations were backfilled to approximately their original elevations.

Vegetation was re-established to restore the site for use as an equipment and material storage area. The Removal Action was completed in June 1994.

The Final RI Addenda, accepted August 1997, documented the Removal Action, presented a residual risk assessment (RRA) of the site with a statistical comparison of chemicals of potential concern in ground water to background concentrations, and identified applicable or relevant and appropriate requirements (ARARs) for the site. The RRA was based on concentrations remaining in the soil after the Removal Action. The building structure (building 348) was not included the scope of the CERCLA action. The RRA concluded that, following the Removal Action, no unacceptable risks were posed by the site under the current and anticipated future industrial use at the site.

The PP, dated July 1997, described the preferred remedy for the PSF site to be No Further Action and provided the rationale for this preference. A public comment period for the PP was held from August 24 through September 22, 1997, to provide an opportunity for comment and to disseminate information. An availability session was held at Fort Riley where representatives from the U.S. Army, the KDHE, and the EPA were available to inform the public of the

preferred alternative and to record public comments, although no members of the public attended.

Since the risk assessment was based on current and future industrial use of the site (i.e. not unrestricted use), the PSF site is subject to statutory five-year reviews. While the RRA considered future demolition of building 348 including the floor and foundations and possible new construction at the site, sampling was not performed under the floor and foundations. The RPMP environmental overlays contain the data about the contamination remaining. The DES reviewed the demolition plans and will ensure that the concrete floor slab is not removed. The current plans are to use the slab area for storage of material such as fencing to keep it off the gravel surfaced areas. The RPMP has a statement that prohibits the removal of the slab and foundation as a control measure.

Ground water was not considered a medium of concern as stated in the ROD on page 2-4. Two PSF wells have been monitored as part of the 354 Baseline Risk Assessment. These wells are PSF92-01 and PSF92-05. These wells are analyzed for 38 volatile organics, 65 semi-volatile organics, and 8 metals (RCRA metals). In the ground-water sampling events for March 2001, September 2001, and January 2002, there were no detections for any of the compounds in these wells. An administrative fine was levied in 1993 as a result of missing a primary FFA date.

C. Dry Cleaning Facilities Area (DCFA), Operable Unit 003

The Dry Cleaning Facilities Area is located in the southwest corner of the Main Post cantonment, about 800 feet north of the Kansas River. See Figure 1. A Preliminary Assessment/Site Investigation (PA/SI) was completed in September 1992 and a RI/FS initiated. Chlorinated solvents contamination was found in the soils and ground water resulting from dry cleaning operations at the site during its operational history. The site is currently in the RI/FS phase and a ROD is anticipated to be completed in 2007. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record located in building 407.

D. Former Fire Training Area-Marshall Army Airfield (FFTA-MAAF), Operable Unit 004

The site consists of a former fire training and drum storage area located at Marshall Army Airfield near the installation boundary. See Figure 1. The former fire-training pit was unlined and filled with crushed stone. The fire-training area was operated from the mid 1960s to 1984. A drum of tetrachloroethene (PCE) was accidentally released into the pit in 1982. Efforts were made to recover the spilled material but only a portion was recovered. The site is currently in the RI/FS phase and a ROD is anticipated to be completed in 2007. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record located in building 407.

E. 354 Area Solvent Detections (354), Operable Unit 005

Solvent storage and dispensing had occurred near Building 354 in the DPW yard. See Figure 1. PCE and its degradation products have been detected above MCLs in ground-water monitoring wells. Carbon tetrachloride (CCL₄) has been detected in laboratory confirmation samples.

Monitoring wells, piezometers, and data collection platforms have been installed to support the RI investigations. Ground-water sampling is ongoing to develop a BLRA and aid in producing the RI Report. The site is currently in the RI/FS phase and a ROD is anticipated to be completed in 2007. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record located in building 407.

F. Open Burning/Open Detonation Ground, Range 16 (OB/OD)

Range 16 was used to destroy defective rounds. Historical practices included the use of solvents in an open burn area. This practice of solvent use was discontinued in the early 1980s. In 1993, low levels of solvents were detected in the ground water. Due to its remote location, there are no nearby receptors. The site is currently in the RI phase and a scheduled date for a decision document is not currently projected. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record located in building 407.

G. Camp Funston Ground Water Detections

A comprehensive ground-water study was initiated for the SEFL, the DRMO Area 2, the Former DS/GS site, and the Funston area (1000 Area) POL/UST sites. Ground-water screening and monitoring well sampling data analyses have indicated the presence of organic compounds and metals. No specific source has been identified. A decision-type document will be produced after completion of the evaluation of the data. Long term monitoring is continuing. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record located in building 407.

H. Old Incinerator Site Southeast Funston

This site is located adjacent to the southeast portion of the installation east of Kansas Highway K-18. The land was excedded to the Kansas Department of Wildlife and Parks (KDWP) in 1989. The incinerator was abandoned in the mid 1950s or earlier. Incinerator ash with high levels of lead content has been detected over a wide area within a site consisting of approximately ten acres. Unexploded ordnance (UXO) has been encountered during previous investigations. A Decision Document had been prepared for the SEFL Site as a No Further Action and was submitted in February 2002. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record located in building 407.

I. Forsyth Landfill(s)

The area is located south and west of Camp Forsyth and contains five separate areas that have been identified as areas that have received historical dumping. One of these areas is visible in aerial photographs taken in 1939. The Draft Final RAR was submitted to the regulators in December 2001 and approved in January 2002. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record located in building 407.

J. POL/UST Sites

The POL/UST sites are comprised of a total of eight separate sites. These sites have both CERCLA and RCRA components. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record or with the project coordinators located in building 407.

1. The POL Tank Farm is a consolidated storage facility located on 1st Division Road, Custer Hill.
2. The Custer Hill Post Exchange (PX) USTs at building 5320 site
3. The Abandoned Gasoline Line
4. The 6200 Area Fuel Oil Line located on Custer
5. The TMP Gas Station (building 388) located in the southern portion of the Main Post area
6. The Former Building 1044 Dispensing Area located in the northwest portion of Camp Funston
7. The Former Building 1245 Dispensing Station located near the eastern boundary of Camp Funston
8. The Former Building 1637 Dispensing Area located in the eastern portion of Camp Funston

K. CERCLA Response Complete Sites

In 1998 and early 1999 three Decision Memoranda were completed to place sites into three categories. The three categories were those not warranting investigation, those being addressed under other regulatory programs (No Action under CERCLA), and those warranting No Action or No Further Action following investigations or removal actions. Documents pertinent to the actions taken thus far can be found in the Fort Riley CERCLA Administrative Record or with the project coordinators located in building 407.

The sites under the category of not warranting investigations are:

1. Construction/Demolition Debris Landfill - Custer Hill
2. PCB Storage Areas
3. Central Vehicle Wash Facility
4. Former Fire Training Area - Camp Funston
5. Impact Zone
6. Multi-Purpose Range Complex (MPRC)
7. Non-Impact Area Small Arms Ranges: Pistol Range - Marshall Army Airfield (MAAF)
8. Non-Impact Area Small Arms Ranges: Soils Moved from Small Arms Ranges
9. Former Oil Testing Laboratory
10. Tactical Equipment and Maintenance Shops, Former Gas Stations/Garages, and Former Fuel Facilities
11. Former DS/GS - bldg 1693 and Adjacent Areas
12. Mercury Use Sites
13. Commissary Landfill - Main Post
14. Radioactive Storage Facilities
15. Disposal of Trash and Demolition - Milford Recreation Center

The sites under the category of Removal Action or being addressed under other regulatory programs are:

1. Main Post Landfill
2. Defense Reutilization and Marketing Office Areas 1, 2 and 3
3. Non-Impact Area Small Arms ranges: Sensitive-Receptor Lead Sites (Colyer Manor Housing Area, Ware and Custer Elementary Schools, Former Mullins Park)
4. Old Whitside Incinerator Area
5. Camp Forsyth Landfills Areas 1, 2, 3, 4, and 5 (except Area 2 riverbank)
6. Former Furniture Repair Shops (former buildings 1301 and 1605)
7. Former Furniture Repair and Small Arms Shop (building 319)
8. Print and Publications Shops
9. Former Livestock Dipping Facility
10. Custer Hill Golf Course Pesticide Storage Facility
11. Former Electrical Substations
12. Building 727 Former Service Pit
13. Former Camp Whitside Landfill
14. Former Milford Lake Recreation Area
15. Custer Hill Sanitary Landfill under the Resource Conservation and Recovery Act Subtitle D
16. Whitside Construction/Demolition Landfill under the Resource Conservation and Recovery Act Subtitle D
17. Hospital Incinerator under the Resource Conservation and Recovery Act Subtitle C and the Clean Air Act
18. Custer Hill (Industrial) Wastewater Retention Ponds under the Clean Water Act
19. Wastewater Treatment Plants (Former Camp Funston, Camp Forsyth, Main Post, and Custer Hill under the Clean Water Act
20. Sludge Drying Beds (Former Camp Funston, Camp Forsyth, Main Post, and Custer Hill under the Clean Water Act)
21. Range Complex Waste Water Lagoons under the Clean Water Act
22. Consolidated Maintenance Facility (building 8100) under the Resource Conservation and Recovery Act Subtitle I
23. Waste Underground Storage Tanks Petroleum Sites / Underground Storage Tanks under the Resource Conservation and Recovery Act Subtitle I

Those under the category of No Action or No Further Action are:

1. PCB Storage Container Express (CONEX) near building 348
2. Abandoned Volatile Organic Compounds (VOCs) Tanks North of Irwin Army Community Hospital
3. Waste Oil AST - 3rd Battery
4. Waste Oil AST - 4th Battery
5. Impact Area Perimeter Small Arms Ranges
6. Former Asphalt Plant (Near building 354)
7. WWI Incinerator, NW Camp Funston
8. Pesticide (2,4-D) USTs at Camp Funston

9. UST and Fire Training Area Facility (892) (Response Complete under ER,A)
10. Remove USTs
11. Main Post PX Gas Station/218
12. Former Gas Service Station Building 354
13. Former Building 1090 Dispensing Station
14. Former Building 1190 Dispensing Station
15. Former Building 1539 Dispensing Station
16. Former Building 1890 Dispensing Station
17. Former Building 2341 Dispensing Station
18. Former Building 2345 Dispensing Station
19. Building 8340 Fuel Oil UST
20. Building 8360 Fuel Oil UST

IV. Remedial Actions

A. Southwest Funston Landfill (SFL), Operable Unit 001

The principal threat described in the RI and ROD at the SFL, pertains to a hypothetical future use of site-impacted ground water.

The remedial action objectives established for the SFL are:

1. Minimize human and ecological direct contact with landfill contents.
2. Reduce the potential for leachate generation by reducing storm-water (rainfall) ponding and infiltration as practical.
3. Stabilize the Kansas River bank slope adjacent to the SFL to prevent movement of the channel into the landfill and to prevent exposure and erosion of the landfill contents.
4. Prevent ingestion, inhalation, and dermal contact with groundwater having organic contaminant concentrations exceeding the remediation goals.

The remedy includes engineering controls such as long-term ground-water monitoring, riverbank stabilization (installed in spring 1994 as part of the Removal Action), repairs and improvements to the existing native soil cover (performed 1994–1997 as part of the Removal Action), and a contingency for future remediation of ground water. Land use was included as an institutional control.

A cover repair project is set to begin in the spring of 2002.

The long-term ground-water monitoring program focuses on the perimeter of the landfill and includes ground-water sampling and analysis for VOCs, antimony, and lead. The objectives of the monitoring program are to monitor for increases in contaminant concentrations in the vicinity of the SFL that might warrant additional actions at the SFL and to determine if constituents from the SFL are migrating under Threemile Creek. For the institutional controls involving land use and access controls, the Fort Riley land use and planning documents include restrictions on the type of development at the SFL (i.e., restrict construction of structures that involve excavation for the foundation and restrict the permanent occupancy of any structure), restrictions on future utility

easements (i.e., limit future utility easements to outside the edge of the landfill), and a prohibition on ground-water use in the vicinity of the landfill. These controls are described in additional detail in the Long Term Ground-Water Monitoring Plan (LTGWMP) and the Institutional Controls Plan (ICP)

The Kansas River bank stabilization project was completed in the spring of 1994. The project provided for placement of a quarry-run stone revetment parallel to 1200 lineal feet of riverbank. Stone baffles were constructed perpendicular to the revetment and bank at 75-foot intervals to slow the river currents and promote deposition of silt between the revetment and the riverbank. The revetment is designed so that this silt deposition process will restore the exposed riverbank and the revetment will minimize the potential for future erosion.

Native soil provides cover over the landfill contents and supports vegetation. The vegetation controls erosion caused by storm-water run-off and promotes evapo-transpiration to use soil water that would otherwise infiltrate through the cover and potentially contact the landfill contents. The ROD identified annual inspections as appropriate for monitoring the cover conditions and suggested mowing, periodic burning, seeding, and fertilizing as possible maintenance needs for the vegetative cover. Filling and re-vegetation were identified to address long-term settlement or erosion.

Bank stabilization and cover improvements are expected to reduce mobility of constituents within the landfill, although these actions do not reduce the mobility, toxicity, or volume of contamination through treatment. The alternative restricts ground-water use and site operations, by implementing an active response (i.e., cover improvements), which is anticipated to improve ground-water quality, and by including a contingency for future action, if warranted.

If long-term ground-water monitoring indicates a need for further action, a contingency is to be implemented for protecting current and future ground-water receptors from exposures to contaminants at unacceptable levels. The contingency would be implemented based on long-term ground-water monitoring data that is evaluated annually. A contingency action would be developed, based on a risk evaluation, in a focused feasibility study that would evaluate methods to address unacceptable risks including such alternatives as providing wellhead treatment or alternate water supply, as well as active ground-water remediation.

Three plans were prepared for the implementation of the SFL remedy. These plans are:

1. Institutional Controls Plan, November 1997
2. Long Term Ground-Water Monitoring Plan, January 1997
3. Operations and Maintenance Plan, September 30, 1996

B. Pesticide Storage Facility (PSF), Operable Unit 002

The non-time-critical Removal Action performed at the PSF reduced the risks associated with site-related contamination to acceptable levels for current and reasonably anticipated future land use and exposures. The RRA was a post-Removal Action risk assessment that indicated the risks due to potential exposures at the PSF were acceptable. The results of the RRA indicated that the Removal Action was effective in reducing the site-related risks at the PSF site.

The selected remedy for the PSF was No Further Action. A Removal Action in which contaminated soils were excavated, transported, and disposed off-site was completed in 1994. Based upon the current and projected land use at the site and the populations that may be exposed to site contamination, it was determined that the site did not pose a significant threat to public health, welfare, and the environment.

Basis of "No Further Action" Alternative:

1. Current and anticipated reasonable future land use is industrial. Future residential or other land uses resulting in higher exposure levels is not anticipated.
2. No contamination of groundwater and no current or anticipated future use of groundwater beneath the site.
3. It was identified in the RPMP that placed a restriction on the removal of the slab and the foundations as well as prohibiting future construction.

The previous release of contamination at the site is annotated in the Real Property Master Plan (RPMP) environmental overlays from which users of the RPMP will be directed to the documents that detail the results of associated investigations and the removal actions taken.

If a significant change in land use at the PSF is proposed by Fort Riley, or if any portion of the site property is transferred or leased to a non-government entity, Fort Riley will notify EPA, Region VII and the KDHE in writing of the proposed change in land use or transfer or lease of the property or a portion of the property. If the change in land use is determined to be a major change in land use, a reevaluation of the remedy decision will be required. Depending upon the nature of the transfer or lease of the site property, the EPA and/or the KDHE may require Fort Riley to reconsider the No Further Action decision selected in this Record of Decision. That may require the implementation of additional response actions, including institutional controls, prior to the transfer or lease of site property. A major land-use change is a change in land-use classification that is inconsistent with the exposure assumptions presented in the risk assessment that may reasonably be expected to result in unacceptable risk.

A Land Use Management Plan (LUMP), dated July 1999, was prepared and provided to the Fort Riley Directorate of Public Works (DPW) to assist the DPW and the DES, as well as other installation staff, in the management of the site pending the completion of an updated RPMP dated September 24, 2001.

The PSF site continues to be used by DPW for the outside storage of materials. As of January 2002, the building 348 structure has been partially dismantled. If funds for demolition are available, it is expected that the structure will be completely demolished in 2002, although the foundations and the floor slab are to remain per direction from the DES. The slab can and will most likely be used to store materials such as fencing to keep them off the graveled areas.

C. Other OUs

All of the other OUs are still in the RI/FS phase and are not expected to go to ROD until 2007 or beyond.

V. Five-Year Review Process

The initiation of the first five-year review process was announced to the Restoration Advisory Board (RAB) at the July 17, 2001 meeting. The July presentation covered the requirements, scope, and elements of a five-year review. It was also addressed at the Public Meeting of the RAB on September 18, 2001 in Junction City, Kansas. The RAB members and all interested parties were informed that the community has a right to participate in the Five-Year Review Report process. The Five-Year Review Summary Form can be found in Appendix B.

The review team consisted of Fort Riley Installation Restoration Program (IRP) personnel, Dr. Richard Van Saun, Project Manager and Debra Snodgrass, Risk Assessor, both of the KCD-CoE, and Wenck Associates, Inc., a contractor under contract to the KCD-CoE. The IRP personnel conducted site visits to establish conditions at all of the sites. The KCD-CoE Project Manager and the contractor visited the SFL site. Since the report was written and the inspections were conducted by installation and Corps personnel, there were no site interviews. The Corps inspection of the SFL site can be found in the 2001 Annual Inspection Report, Southwest Funston Landfill, Operable Unit 001, Fort Riley Kansas dated March 5, 2002. The site inspection checklist for PSF can be found in Appendix C.

The RODs and all pertinent documents and data were reviewed to determine the status of the sites and provide a basis for the analysis of the protectiveness of the remedies. The regulations were reviewed to ascertain if there had been significant changes that would require a modification of the remedies in place. No appreciable changes were encountered.

A full, detailed review of Applicable or Relevant and Appropriate Requirements (ARARs) was recently completed on a similar project and it was determined from that review and the review of the specific ARARs pertinent to the SFL and the PSF that they were the same and had not changed substantively. Therefore, no further review was necessary.

The materials reviewed for the preparation of the Five-Year Review Report comprise the majority of the documents in the Fort Riley Administrative Record. A print out of the entire Administrative Record can be found in Appendix A. The entire Administrative Record is available for review at the Directorate of Environment and Safety, 407 Pershing Court, Fort Riley during the normal duty hours of 7:30 A.M. to 4:00 P.M. Monday through Friday. All public review documents are available at the DES, the Dorothy Bramlage Public Library in Junction City, the Clay Center Carnegie Library in Clay Center, and the Manhattan Public Library in Manhattan.

The schedule for the Five-Year Review is as follows:

1. Notification to the RAB at its meeting on July 17, 2001 that a Five-Year Review is to be conducted
2. Discussion at the RAB and Public Meeting in Junction City, Kansas, on September 18, 2001 of the development of the Five-Year Review Report
3. Further discussion at the RAB meeting of the continuing development of the Five-Year Review Report January 22 and March 19, 2002
4. Submission of the Draft Five-Year Review Report to the EPA, the KDHE, Forces Command (FORSCOM), KCD-CoE, and Army Environmental Center (AEC) on February 27, 2002
5. Submission of the Draft Final Five-Year Review Report May 31, 2002
6. The public comment period will run from June 1 to July 1, 2002.
7. Deadline due date to the EPA and the KDHE is on August 6, 2002

VI. Technical Assessment

A. Southwest Funston Landfill (SFL), Operable Unit 001

Question A: Is the remedy functioning as intended by the decision document?

The remedy is functioning as intended by the decision document. The long-term monitoring indicates that ground-water contamination for all VOCs except one have shown no long-term increases and, in fact, is decreasing. Based on the analyses of the data presented in IIIA of this report, the sampling events in 1999, 2000, and 2001 have indicated a continuing presence of vinyl chloride above the MCL. The other analyses have contaminants below the MCLs. The 1999 sampling had vinyl chloride above the MCL ranging from 5.4 to 7ug/L. This was for four out of twenty-five wells. The two samplings in 2000 have vinyl chloride above the MCL ranging from 6.8 to 9.5ug/L in three of nineteen wells. The April 2001 sampling had vinyl chloride above the MCL ranging from 10 to 12ug/L but the September 2001 sampling has vinyl chloride above the MCL ranging from 5.1 to 5.7ug/L for three out of nineteen wells. The 'spike' in values for the April 2001 event is most likely attributable to a laboratory that was unable to meet quality assurance and control requirements. The vinyl chloride values present in the wells when the ROD was implemented were 14 to 18ug/L. The values have declined, on average, 66% since the ROD remedies were instituted. As a result of these analyses, there is no impact to the finding of protectiveness for the remedy. The riverbank stabilization portion was inspected and found to be functioning as designed. There is no noticeable bank erosion and it is protecting the landfill from exposure. An evapo-transpirative cover was placed over the landfill materials. There has been settlement of the cover within the trenches into which material was disposed. This subsidence was a result of consolidation of the landfilled debris. A Cover Improvements project was implemented between May 1996 and March 1997. Additional repairs to address further consolidation settlement in the disposal trenches are scheduled for the spring of 2002. The most recent ground-water samples show an average decrease of 66% in vinyl chloride concentrations over the long term. There is no indication of a potential remedy problem, thus, no further assessment is needed. The RAOs for the SFL are found on page 2-6 of the ROD. They

state that they are to minimize human ecological direct contact with the landfill contents, reduce the potential for leachate generation by reducing storm-water ponding and infiltration, stabilize the Kansas River bank slope adjacent to the SFL to prevent exposure and erosion of the landfill contents, and to prevent ingestion, inhalation, and dermal contact with the ground water having organic contaminant concentrations exceeding remediation goals. It is currently doing so.

The costs of the long term ground-water monitoring and O&M actions are:

	LTM	O&M
FY97	\$261,097	\$3,905
FY98	\$226,970.52	\$35,286.44
FY99	\$43,240.95	N/A
FY00	\$186,682.85	\$32,720.91
FY01	\$409,512.29	N/A
FY02 (Estimated)	\$275,000	\$305,000

There is no recognizable opportunity for cost optimizations other than a bundling contract for all long-term ground-water monitoring that has been lumped together for an economy-of-scale benefit.

There are no indications of potential remedy problems. The engineering and institutional controls implemented include ground-water monitoring in the Long-Term Ground-Water Monitoring Plan, land-use controls found in the RPMP and the ICP, and access control.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy still valid?

Since the time of the BLRA, the EPA has revised some chemical toxicity values, indicating greater toxicity for several COCs and less toxicity for other. The only chemical of concern at the time of the ROD that is currently above the MCL is vinyl chloride. The Integrated Risk Information System (IRIS), for vinyl chloride, now lists toxicity values for assessing noncarcinogenic health effects, whereas, no toxicity values were available at the time of the BLRA. A reference dose (RfD) of 3E-02 mg/kg/day is now used for assessing both oral and inhalation exposures. The carcinogenic effects oral slope factor was 1.9E+00 (mg/kg/day)⁻¹ but is currently 3.1E-02 (mg/kg/day)⁻¹ and the inhalation slope factor was 3.0E-01 (mg/kg/day)⁻¹ but is currently 3.1E-02 (mg/kg/day)⁻¹. The current slope factors available in IRIS represent a decrease in chemical toxicity. While toxicity values may have changed since the time of the BLRA, risk has not increased because exposure pathways remain incomplete. Although a hypothetical residential scenario was characterized during the BLRA, institutional controls prevent changes in land use and preclude the likelihood of exposure pathways to ground water becoming complete in the future. Some chemical concentrations have been higher during occasional sampling events, but this has not resulted in a consistently increasing trend. There are no new contaminants and/or contaminant sources identified. The current actions continue to meet the RAOs set forth in the ROD.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No information about environmental risks, site conditions, natural disaster impacts, or other data has been determined to affect the protectiveness of the remedy. The EPA has revised its guidance for conducting ecological risk assessments since the time of the BLRA. The ambient water quality criteria for surface water and the NOAA Effects Range thresholds for sediments are still appropriate screening benchmarks today. Changes in surface water and sediment quality as a result of the SFL would first be evidenced in ground water. COCs in ground water have not shown a significantly increasing trend. Therefore, the RAOs set forth in the ROD continue to serve to adequately protect ecological receptors.

Summary of the Technical Assessment

The remedy is functioning as intended in the decision document. The exposure assumptions, toxicity levels, and remedial action objectives are still valid and no additional data and/or information has been encountered that questions the protectiveness of the remedy selected.

B. Pesticide Storage Facility (PSF), Operable Unit 002

Question A: Is the remedy functioning as intended by the decision document?

This was a No Further Action ROD. The site inspection indicated that the remedy is performing as expected and there are no indicators of potential remedy problems. The RPMP has a caution contained in it that the concrete slab floor and foundations for building 348 are to remain when it is demolished. The DES reviews all demolitions and, therefore, will ensure that this action is carried out as required.

Question B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives (RAOs) used at the time of the remedy still valid?

While the EPA has updated some chemical toxicity values to indicate a greater degree of toxicity, exposure pathways remain incomplete at this site. Land use at the site remains industrial. The RPMP details in its environmental overlays the residual contamination conditions at the site and requires that the concrete floor slab and foundations remain in place in the event the building is demolished. This acts as an engineered barrier to ensure exposure pathways remain incomplete. Therefore, the RAOs chosen at the time of the remedy selection are still valid.

Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

No information about environmental risks, site conditions, natural disaster impacts, or other data has been determined to affect the protectiveness of the remedy. While the EPA has issued new guidance for conducting ecological risk assessments since the time the BLRA was written, the potential for ecological risks at the site remain minimal. Continuation of industrial land use of

the area renders the site a less attractive habitat than surrounding undeveloped areas. Therefore, the ecological evaluation in the BLRA is still adequately protective.

Summary of the Technical Assessment

The remedy is functioning as intended in the ROD. The information used at the time of the selection of the remedy is still valid. No new or additional facts have been found to call the protectiveness of the remedy into question.

VII. Issues and Recommendations

There have been no issues identified during the review process, the technical assessment, or other aspects of these activities to affect the protectiveness. There has been no input or issues from the general public during the review process.

The public comment period ran from June 1 to July 1, 2002. The Notice of Availability was published in the Manhattan Mercury and the Junction City Daily Union May 29, 30, and 31, 2002. Public comment copies were also placed in the Dorothy Bramlage Public Library in Junction City, the Manhattan Public Library in Manhattan, and the Carnegie Library in Clay Center. No public comments were received.

As a result of the fact that no issues have been determined to affect the sites, it is recommended that the current remedies at the Southwest Funston Landfill and the Pesticide Storage Facility sites continue unchanged.

VIII. Protectiveness Statement


The remedies at the Southwest Funston Landfill (SFL), Operable Unit 001 and the Pesticide Storage Facility (PSF), Operable Unit 002 are protective of human health and the environment and exposure pathways that could result in unacceptable risks are being controlled.

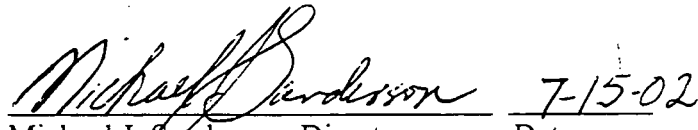
IX. Next Review

The next Five-Year Review will be due approximately August 2007.

X. Signatures

The review and analysis of existing data and documentation and site inspections has lead to a determination that the current and future protectiveness of human health and the environment from the remedies found in the existing Records of Decision for the Southwest Funston Landfill, Operable Unit 001 and the Pesticide Storage Facility, Operable Unit 002 are sufficient.


Philip T. Pope Date
Colonel, U.S. Army
Garrison Commander


Michael J. Sanderson, Director Date
Superfund Division
U.S. Environmental Protection Agency
Region VII

APPENDIX A

PRINTOUT OF THE ADMINISTRATIVE RECORD

Admin Record Master list

<i>Site</i>	<i>Section</i>	<i>Document Number</i>	<i>Document Date</i>	<i>Document Title</i>	<i>Author</i>
354	2.2	354 2.2 001	17-Aug-97	Final Sampling and Analysis Plan for the Initial Field Investigation of Former Building 354	Burns & McDonnell
354	2.3	354 2.3 001	08-Jan-99	Quality Control Summary Report November 1998 Groundwater Sampling Event at the Former Building 354 area Solvent Detection Site	Burns & McDonnell
354	2.3	354 2.3 001-D	19-Feb-99	Data Summary Report November 1998 Sampling Event Former Building 354 Area Solvent Detection Site	Burns & McDonnell
354	2.4	354 2.4 001	12-Mar-98	Draft Final Initial Field Investigation Report	Burns & McDonnell
354	2.4	354 2.4 002	12-Mar-98	Attachment 1 Draft Final Initial Field Investigation Report	Burns & McDonnell
354	4.1	354 4.1 001	29-Jan-99	Draft Final Remedial Investigation/Feasibility Study Work Plan for the Former Building 354 Solvent Detection Site	Burns & McDonnell
354	4.1	354 4.1 002	29-Jan-01	Draft Final Data Evaluation Technical Memorandum and Work Plan Addendum July 1999-April 2000 Fieldwork for the RI/FS, Volume 1 Report	Burns & McDonnell
354	4.1	354 4.1 003	29-Jan-01	Draft Final Data Evaluation Technical Memorandum and Work Plan Addendum July 1999-July 2000 Fieldwork for the RI/FS, Volume 2 Appendices	Burns & McDonnell
354	4.2	354 4.2 001	29-Jan-99	Site Specific Sampling and Analysis Plan for the RI/FS at Former Building 354 Solvent Detection Site	Burns & McDonnell
354	4.2	354 4.2 002	29-Jan-99	Draft Final Site Specific Safety and Health Plan for the RI/FS at Former Building 354 Solvent Detection Site	Burns & McDonnell
354	4.3	354 4.3 001	12-Jan-00	Quality Control Technical Memorandum 1999 Confirmation Sampling for the RI/FS, Volume 1 of 2	Burns & McDonnell
354	4.3	354 4.3 002	12-Jan-00	Quality Control Technical Memorandum 1999 Confirmation Sampling for the RI/FS at 354, Volume II of II	Burns & McDonnell

<i>Site</i>	<i>Section</i>	<i>Document Number</i>	<i>Document Date</i>	<i>Document Title</i>	<i>Author</i>
354	4.3	354 4.3 003	01-Jun-00	Quality Control Tech Memo February 2000 Groundwater Sampling Event at Former 354 Solvent Detection Site	Burns & McDonnell
354	4.3	354 4.3 003-D	23-Jun-00	Data Summary Report for February 2000	Burns & McDonnell
354	4.3	354 4.3 004	12-May-00	Quality Control Technical Memorandum March 2000 USGS River Sampling Event at 354	Burns & McDonnell
354	4.3	354 4.3 005	26-May-00	Quality Control Summary Report April 2000 Confirmation Sampling for RI/FS at 354	Burns & McDonnell
354	4.3	354 4.3 006	01-Sep-00	Quality Control Summary Report July 2000 Groundwater Sampling Event at 354	Burns & McDonnell
354	4.3	354 4.3 006-D	21-Nov-00	Data Summary Report for the July 2000 Groundwater Sampling Event	Burns & McDonnell
354	4.3	354 4.3 007	01-Sep-00	Quality Control Summary Report July 2000 USGS River Sampling Event at 354	Burns & McDonnell
354	4.3	354 4.3 008	18-Dec-00	Quality Control Summary Report October 2000 Groundwater Sampling Event at 354	Burns & McDonnell
354	4.3	354 4.3 008-D	08-Mar-01	Data Summary Report for October 2000 Sampling Event for 354 Area	Burns & McDonnell
354	4.3	354 4.3 009	01-May-01	Quality Control Summary Report March 2001 Groundwater Sampling Event	Burns & McDonnell
354	4.3	354 4.3 009-D	07-Sep-01	Data Summary Report for March 2001 Groundwater Sampling	Burns & McDonnell
354	4.3	354 4.3 010	28-Sep-01	Quality Control Summary Report July 2001 USGS River Sampling Event for 354 Area Solvent Detections	Burns & McDonnell
354	4.3	354 4.3 011	18-Oct-01	Quality Control Summary Report Confirmation Sampling for RI/FS	Burns & McDonnell
354	4.3	354 4.3 012	07-Dec-01	Quality Control Summary Report September 2001 Groundwater Sampling Event at 354	Burns & McDonnell
354	4.3	354 4.3 013	07-Jan-02	Quality Control Summary Report Addendum to the September 2001 Groundwater Sampling Event at 354	Burns & McDonnell
354	4.3	354 4.3 013-D	01-Feb-02	Data Summary Report Fall 2001 Sampling Event	Burns & McDonnell

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354	4.3	354 4.3 015	07-Nov-01	Review of Field Screening Data for the RI/FS at 354 May through August 2001, Volume II	Burns & McDonnell
354	4.3	354 4.3 016	07-Feb-02	Quality Control Summary Report Soil Sampling for Risk Assessment at 354, Volume I	Burns & McDonnell
354	4.3	354 4.3 017	07-Feb-02	Quality Control Summary Report Soil Sampling for Risk Assessment at 354, Volume II	Burns & McDonnell
354	4.3	354 4.3 018	01-Feb-02	Quality Control Summary Report October 2001 Groundwater Sampling For 354 Area, AGL Area	Burns & McDonnell
354	4.3	354 4.3 019	18-Mar-02	Quality Control Summary Report January 2002 Groundwater Sampling Event at 354	Burns & McDonnell
727	2.3	727 2.3 001	22-Dec-97	Technical Memorandum Report for Building 727 Investigation	Burns & McDonnell
727	8	727 8 001	24-May-99	Decision Memorandum for Main Post Landfill and Building 727 Former Service Pit	Dynamac, Inc
AGENCY	12.2	AGENCY 12.2 001	06-Aug-92	Department of Defense and State Memorandum of Agreement (DSMOA)	Thomas Baca
AGENCY	12.4	AGENCY 12.4 001	20-Jun-91	Fort Riley Interagency Agreement Responsiveness Summary	EPA Region VII
AGENCY	12.4	AGENCY 12.4 002	28-Jun-91	United State Environmental Protection Agency Region VII and the State of Kansas in the Matter of the U.S. Department of the Army Fort Riley Kansas Federal Facility Agreement	EPA, Region VII
CAMP	4.1	CAMP 4.1 001	04-Sep-98	Monitoring Well Installation and Closure Report	US Geological Survey
CAMP	4.1	CAMP 4.1 002	30-Sep-98	Work Plan for Hydrologic Evaluation of the Camp Funston Area	US Geological Survey
CAMP	4.3	CAMP 4.3 001	01-Jan-95	Quality Control Summary Report - Volume I Monitoring Well Sampling & Analysis	Law Environmental
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CAMP	4.3	CAMP 4.3 004	17-Jul-96	Quality Control Summary Report Monitoring Well Sampling Southwest Funston Landfill Camp Funston Southeast Funston Landfill Analytical Data reported for Groundwater from Monitoring Wells	Louis Berger & Associates
CAMP	4.3	CAMP 4.3 005	03-Jan-97	Quality Control Summary Report Monitoring Well Sampling Southwest Funston Landfill Camp Funston Southeast Funston Landfill Analytical Data Reported for Groundwater from Monitoring Wells	Louis Berger & Associates
CAMP	4.3	CAMP 4.3 006	16-Jan-98	Quality Control summary Report Monitoring Well Sampling Analytical Data Reported for Groundwater from Monitoring Wells Collected November 1997	Louis Berger & Associates
CAMP	4.3	CAMP 4.3 007	01-Aug-97	Quality Control Summary Report Monitoring Well Sampling Analytical Data Reported for Groundwater from Monitoring Wells	Louis Berger & Associates, I
CAMP	4.3	CAMP 4.3 008	23-Jul-98	Quality Control Summary Report Monitoring Well Sampling - May 1998, Analytical Data Reported for Groundwater from Monitoring Wells	Louis Berger & Associates
CAMP	4.3	CAMP 4.3 009	09-Feb-99	Quality Control Summary Report Monitoring Well Sampling - December 1998 Analytical Data reported for Groundwater from Monitoring Wells	Louis Berger & Associates
CAMP	4.3	CAMP 4.3 010	27-Nov-00	Quality Control Summary Report September 2000 Groundwater Sampling Event for Southwest Funston Landfill and Camp Funston Area Groundwater Study	Burns & McDonnell
CAMP	4.3	CAMP 4.3 010-D	28-Mar-01	Data Summary Report for September 2000 Groundwater Sampling Event at Southwest Funston Landfill and Camp Funston Area Groundwater Study	Burns & McDonnell
CAMP	4.3	CAMP 4.3 011	21-Nov-01	Quality Control Summary Report September 2001 Sampling Event	Environmental Chemical Cor
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CAMP	4.5	CAMP 4.5 002	23-Dec-98	Annual Groundwater Monitoring Report for the Camp Funston Area, 1997	US Geological Survey
CAMP	4.3	CAMP 4.5 003	23-Dec-99	Annual Groundwater Monitoring Report for the Camp Funston Area, 1998	U.S.G.S.
CAMP	4.5	CAMP 4.5 004	14-Mar-02	1999-2000 Groundwater Monitoring Report for the Camp Funston Area	Burns & McDonnell
CHL	1.4	CHL 1.4 001	02-Jul-92	Draft Final Sampling and Analysis Plan for the Custer Hill Sanitary Landfill	Louis Berger & Associates
CHL	1.5	CHL 1.5 001	01-Apr-91	Custer Hill Groundwater Data	Louis Berger & Associates
CHL	1.5	CHL 1.5 002	01-Jul-91	Custer Hill Sanitary Landfill Groundwater Data	Louis Berger & Associates
CHL	1.5	CHL 1.5 003	01-Sep-91	Custer Hill Sanitary Landfill - Round 6	Louis Berger & Associates
CHL	1.5	CHL 1.5 004	01-Nov-91	Custer Hill Sanitary Landfill Groundwater Data	Louis Berger & Associates
CHL	1.5	CHL 1.5 005	01-Feb-92	Custer Hill Sanitary Landfill Groundwater Data	Louis Berger & Associates
CHL	1.5	CHL 1.5 006	10-Aug-92	Draft Final Data Summary and Evaluation Report - Custer Hill Sanitary Landfill	Corps of Engineers - KC Dis
CHL	1.5	CHL 1.5 007	23-Jun-93	Draft Final Data Summary and Evaluation Supplement for the Custer Hill Sanitary Landfill at Fort Riley, Kansas Volume I (Sections 1-7)	Louis Berger & Associates
CHL	1.5	CHL 1.5 008	23-Jun-93	Draft Final Data Summary and Evaluation Supplement for the Custer Hill Sanitary Landfill at Fort Riley, Kansas Section II (Section 8, 9, 10)	Louis Berger & Associates
CHL	1.5	CHL 1.5 009	13-Jul-94	Interim Sampling Data Report for the Custer Hill Sanitary landfill	Louis Berger & Associates
CHL	1.6	CHL 1.6 001	01-Feb-92	Groundwater Monitoring Report - Revised Draft - Custer Hill Sanitary Landfill	Corps of Engineers - KC Dis
COL	3.4	COL 3.4 001	01-Dec-93	Action Memorandum for Removal Action Sensitive Receptor Lead Site - Colyer Manor Area	IRP, Fort Riley

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COL	3.4	COL 3.4 003	16-Jun-94	Draft Final Project Report for Rapid Response Removal of Contaminated Soils Pesticide Storage Facility At Colyer Manor Sites Book 2 of 5	OHM Corporation
COL	3.4	COL 3.4 004	16-Jun-94	Draft Final Project Report for Rapid Response Removal of Contaminated Soils Pesticide Storage Facility at Colyer Manor Sits, Book 3 of 5	OHM Corporation
COL	3.4	COL 3.4 005	16-Jun-94	Draft Final Project Report for Rapid Response Removal of Contaminated Soils Pesticide Storage Facility, Book 4 of 5	OHM Corporation
COL	3.4	COL 3.4 006	16-Jun-94	Draft Final Project Report for Rapid Response Removal of Contaminated Soils Pesticide Storage Facility at Colyer Manor Sites, Book 5 of 5	OHM corporation
DCF	1.3	DCF 1.3 001	01-Dec-91	Draft Final Volume I - Work Plan; Volume II - Monitoring Well Installation Plan; Volume III - Site Safety and Health Plan; Volume IV - Chemical Data Acquisition Plan for Preliminary Assessment/Site Investigation Former Dry Cleaning Facility	Law Environmental
DCF	1.3	DCF 1.3 002	01-Sep-92	Volume I - Draft Final Modified Work Plan for Preliminary Assessment/Site Investigation Former Dry Cleaning Facility	Law Environmental
DCF	1.3	DCF 1.3 003	01-Sep-92	Volume II - Draft Final Modified Well Installation Plan for Preliminary Assessment/Site Investigation Former Dry Cleaning Facility	Law Environmental
DCF	1.3	DCF 1.3 004	01-Sep-92	Volume III - Draft Final Modified Site Safety and Health Plan for Preliminary Assessment/Site Investigation Former Dry Cleaning Facility	Law Environmental
DCF	1.3	DCF 1.3 005	01-Sep-92	Volume IV Draft Final Modified Chemical Data Acquisition Plan and Site Specific Sampling Plan for Preliminary Assessment/Site Investigation Former Dry Cleaning Facility	Law Environmental

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DCF	1.5	DCF 1.5 002	01-Jan-93	Quality Control Summary Report for First Quarter Groundwater Sampling Event for Preliminary Assessment/Site Investigation Dry Cleaning Facility	Law Environmental
DCF	1.5	DCF 1.5 003	01-Apr-93	Quality Control Summary Report Second Quarter Groundwater Sampling Event for Preliminary Assessment/Site Investigation Dry Cleaning Facility	Law Environmental
DCF	1.5	DCF 1.5 004	01-Jul-93	Quality Control Summary Report Third Quarter Groundwater Sampling Event for Preliminary Assessment/Site Investigation Dry Cleaning Facility	Law Environmental
DCF	1.6	DCF 1.6 001	01-Sep-92	Working Draft Preliminary Assessment /Site Investigation Report for Preliminary Assessment/Site Investigation Former Dry Cleaning Facility	Law Environmental
DCF	4.1	DCF 4.1 001	01-Jul-93	Volume I Draft Final Remedial Investigation/Feasibility Study Planning Documents Work Plan for Dry Cleaning Facility	Law Environmental
DCF	4.1	DCF 4.1 002	01-Jul-93	Volume II Draft Final Remedial Investigation/Feasibility Study Planning Documents Sampling and Analysis Plan (SAP) for Dry Cleaning Facility	Law Environmental
DCF	4.1	DCF 4.1 003	01-Jul-93	Remedial Investigation/Feasibility Study Planning Document Draft Addendum to Site Safety and Health Plan Volume III for Dry Cleaning Facility	Law Environmental
DCF	4.1	DCF 4.1 004	01-Jul-93	Remedial Investigation/Feasibility Study Planning Documents Draft Work Plan Appendices for Dry Cleaning Facility	Law Environmental
DCF	4.1	DCF 4.1 005	13-Mar-02	Draft Final Remedial Investigation/Feasibility Study Addendum Work Plan for DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 001	06-May-93	Quality Control Summary Report of Remedial Investigation/Feasibility Study Supplemental Initial Field Investigation	Law Environmental
DCF	4.3	DCF 4.3 002	13-Jan-94	Quality Control Summary Report RI/FS - Analytical Data Reported for Soil Borings and Surface Soil Samples at DCF	Louis Berger & Associates

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DCF	4.3	DCF 4.3 004	22-Apr-94	First Quarterly Quality Control Summary Report Remedial Investigation/Feasibility Study Dry Cleaning Facility Analytical Data reported for Groundwater from Monitoring Wells	Louis Berger & Associates
DCF	4.3	DCF 4.3 005	22-Jul-94	Second Quarterly Quality control Summary Report Remedial Investigation/Feasibility Study Dry Cleaning Facility Analytical Data Reported for Groundwater from Monitoring Wells	Louis Berger & Associates
DCF	4.3	DCF 4.3 006	20-Oct-94	Third Quarterly Quality Control Summary Report Remedial Investigation/Feasibility Study Dry Cleaning Facility	Louis Berger & Associates
DCF	4.3	DCF 4.3 007	21-Feb-95	Fourth Quarterly Quality control Summary Report Remedial Investigation/Feasibility Study Dry Cleaning Facility Analytical Data Reported for Groundwater from Monitoring Wells	Louis Berger & Associates
DCF	4.3	DCF 4.3 008	23-Feb-95	Quality Control Summary Report Remedial Investigation/Feasibility Study Dry Cleaning Facility Analytical Data reported for Surface Water and Sediments	Louis Berger & Associates
DCF	4.3	DCF 4.3 009	18-Aug-95	Quality Control Summary Report Groundwater Monitoring High Groundwater Sampling and Quarterly Groundwater Sampling Remedial Investigation/Feasibility Study Dry Cleaning Facility Analytical Data Reported for Groundwater from Monitoring Wells	Louis Berger & Associates
DCF	4.3	DCF 4.3 010	10-Oct-95	Quality Control Summary Report High Groundwater Sampling Remedial Investigation/Feasibility Study Dry Cleaning Facility Analytical Data reported for Groundwater from Montoring Wells	Louis Berger & Associates

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DCF	4.3	DCF 4.3 012	15-Jul-96	Quality Control Summary Report Remedial Investigation/Feasibility Study Periodic Groundwater Monitoring Dry Cleaning Facility analytical Data Reported for Groundwater from Monitoring Wells and Groundwater Screening Confirmation Samples	Louis Berger & Associates
DCF	4.3	DCF 4.3 013	04-Dec-96	Quality Control Summary Report Remedial Investigation/Feasibility Study Periodic Groundwater Monitoring Dry Cleaning Facility Analytical Data reported for Groundwater from Monitoring Wells	Louis Berger & Associates
DCF	4.3	DCF 4.3 014	11-Apr-97	Quality Control Summary Report Remedial Investigation/Feasibility Study Periodic Groundwater Monitoring Dry Cleaning Facility Analytical Data Reported for Groundwater from Monitoring Wells	Louis Berger & Associates
DCF	4.3	DCF 4.3 014-D	07-May-97	Data Summary Report for Groundwater Sampling at DCF, Section 8: 20 to 24 Feb 1997 Periodic Sampling 27 March 1997 Groundwater Elevation	Louis Berger & Associates
DCF	4.3	DCF 4.3 015	02-Jul-97	Quality Control Summary Report Remedial Investigation/Feasibility Study Periodic Groundwater Monitoring Dry Cleaning Facility Analytical Data Reported for Groudwater	Louis Berger & Associates
DCF	4.3	DCF 4.3 016	10-Nov-97	Quality Control Summary Report RI/FS Periodic Groundwater Monitoring - Analytical Data reported for Groundwater from Monitoring Wells collected September 1997	Louis Berger and Associate
DCF	4.3	DCF 4.3 017	09-Feb-98	Quality Control Summary Report RI/FS Periodic Groundwater Monitoring DCF Analytical Data reported for Groundwater from Monitoring Wells collected December 1997	Louis Berger & Associates
DCF	4.3	DCF 4.3 018	20-May-98	Quality Control Summary Report Periodic Groundwater Monitoring - Analytical Data Reported for Groundwater from Monitoring Wells collected march 1998	Louis Berger & Associates

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DCF	4.3	DCF 4.3 020	08-Dec-98	Quality Control Summary Report October 1998 Groundwater Sampling Event	Burns & McDonnell
DCF	4.3	DCF 4.3 021	01-Jul-99	Quality Control Summary Report May 1999 Groundwater Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 021-D	24-Sep-99	Data Summary Report for May 1999 at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 022	09-Sep-99	Quality Control Summary Report July 1999 USGS River Sampling Event at Fort Riley	Burns & McDonnell
DCF	4.3	DCF 4.3 023	25-Oct-99	Quality Control Summary Report August/September 1999 Groundwater Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 024	20-Apr-00	Quality Control Technical Memorandum February 2000 Groundwater Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 024-D	22-Jun-00	Data Summary Report February 2000 Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 025	12-May-00	Quality Control Technical Memorandum March 2000 USGS River Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 026	13-Sep-00	Quality Control Summary Report July 2000 Groundwater Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 026-D	12-Jan-01	Data Summary Report for July 2000 at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 027	19-Dec-00	Quality Control Summary Report October 2000 Groundwater Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 027-D	12-Feb-01	Data Summary Report for DCF October 2000 Sampling Event	Burns & McDonnell
DCF	4.3	DCF 4.3 028	29-Jan-01	Quality Control Summary Report Potential Source Area Investigation DCF Confirmation Samples	Burns & McDonnell
DCF	4.3	DCF 4.3 029	31-Jan-01	Quality Control Summary Report Potential Source Area Investigation at DCF Field Screening Samples	Burns & McDonnell
DCF	4.3	DCF 4.3 030	29-May-01	Quality Control Summary Report March 2001 Groundwater Sampling Event	Burns & McDonnell

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DCF	4.3	DCF 4.3 032	10-Dec-01	Quality Control Summary Report October 2001 Groundwater Sampling Event at DCF	Burns & McDonnell
DCF	4.3	DCF 4.3 032-D	26-Dec-01	Data Summary Report for October 2001 Sampling	Burns & McDonnell
DCF	4.3	DCF 4.3 033	05-Mar-02	Final Quality Control Summary Report Potential Source Area Investigation	Burns & McDonnell
DCF	4.3	DCF 4.3 033	05-Mar-02	Final Quality Control Summary Report Potential Source Area Investigation at DCF, field Screening Samples	Burns & McDonnell
DCF	4.4	DCF 4.4 001	01-Mar-95	Draft Final Remedial Investigation Report, Vol I - Report	Louis Berger and Associate
DCF	4.4	DCF 4.4 002	01-Mar-95	Draft Final Remedial Investigation Report, Vol II, Appendices	Louis Berger and Associate
DCF	4.4	DCF 4.4 003	24-Mar-98	Draft Final Remedial Investigation Addendum Monitoring Expansion Report Dry Cleaning Facilities Study Area	Louis Berger & Associates
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DCF-P	3.1	DCF-P 3.1 001	01-Jun-94	Draft Final Work Plan Pilot Test Study Dual Phase Extraction System	Louis Berger & Associates
DCF-P	3.3	DCF-P 3.3 001	22-Jul-94	Quality Control Summary Report Pilot Test Study Dual Phase Extraction System Dry Cleaning Facility	Louis Berger & Associates
DCF-P	3.3	DCF-P 3.3 002	02-Dec-94	Quality Control Summary Report Pilot Test Study Subsurface Soil Sampling Dry Cleaning Facility Analytical Data reported for Baseline Soil Boring samples & Soils from Underground Storage Tanks Locations	Louis Berger & Associates

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DCF-P	3.6	DCF-P 3.6 001	01-Mar-96	Draft Final Pilot Test Study Results Report	Louis Berger & Associates
DRMO	1.4	DRMO 1.4 001	29-Jul-96	Draft Final Sampling and Analysis Plan for Former Wherry Substation and DRMO 1 Drainage ditch	Louis Berger & Associates
DRMO	1.5	DRMO 1.5 001	21-Oct-96	Quality Control Summary Report Former Wherry Substation and DRMO Area 1 Drainage Ditch	Louis Berger & Associates
DRMO	13	DRMO 13 001	18-Jan-98	Public Notice for DRMO Decision Document	
DRMO	8.1	DRMO 8.1 001	27-Apr-98	Decision Memorandum	Louis Berger & Associates
FFTA	13	FFTA 13 001	16-Jan-98	Public Notice for Marshall Army Airfield EE/CA	
FFTA	2.3	FFTA 2.3 001	17-Dec-93	Data Summary and Evaluation Report for Site Investigation Former Fire Training Pit-Marshall Army Airfield and Nearby Off-Site Properties	Louis Berger & Associates
FFTA	2.3	FFTA 2.3 002	22-Jul-94	Quality Control Summary Report Site Investigation of the High Priority Sites - FFTA Analytical Data	Louis Berger & Associates
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FFTA	2.4	FFTA 2.4 002	19-Dec-95	Appendix Draft Final Site Investigation Volume II of II	Louis Berger & Associates
FFTA	3.1	FFTA 3.1 001	24-May-94	Draft Final Expanded Site Investigation Sampling and Analysis Plan for Former Fire Training Area Marshall Army Airfield Fort Riley Kansas and nearby off post properties	Louis Berger & Associates
FFTA	3.3	FFTA 3.3 001	01-Dec-97	Draft Final Exposure Control Action Engineering Evaluation/Cost Analysis	Louis Berger & Associates
FFTA	3.4	FFTA 3.4 001	16-Mar-98	Draft Final Action Memorandum Exposure Control Action	Louis Berger & Assoc.

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FFTA	4.1	FFTA 4.1 002	11-Apr-97	Draft Final Remedial Investigation/Feasibility Study Work Plan Volume I	Burns & McDonnell
FFTA	4.1	FFTA 4.1 003	11-Apr-97	Draft Final Remedial Investigation/Feasibility Study Work Plan Volume II Appendices	Burns & McDonnell
FFTA	4.1	FFTA 4.1 004	11-Apr-97	Draft Final Remedial Investigation/Feasibility Study Work Plan Volume III Appendices	Burns & McDonnell
FFTA	4.1	FFTA 4.1 005	12-Jan-98	Draft Final Technical Memorandum Work Plan for the Plume Characterization	Burns and McDonnell
FFTA	4.1	FFTA 4.1 006	28-Apr-98	Draft Final System Design and Workplan Water Distribution System between Off-Post Supply Wells and Distribution Points	Jacobs Engineering Group
FFTA	4.1	FFTA 4.1 007	01-Sep-98	Water Distribution System between off-post supply wells and distribution points	Corps of Engineers
FFTA	4.1	FFTA 4.1 008	12-Oct-98	Draft Final Work Plan for the Natural Attenuation Evaluation Study	Burns & McDonnell
FFTA	4.1	FFTA 4.1 009	15-Feb-99	Draft Final Work Plan Aquifer Tracer Study RI/FS Work Plan Addendum	Burns & McDonnell
FFTA	4.1	FFTA 4.1 010	12-Mar-99	Final Work Plan for Volatile Organic Compound Sampling of the Kansas River near Marshall Army Airfield	U.S. Geological Survey
FFTA	4.1	FFTA 4.1 011	04-Jun-99	Site specific Sampling and Analysis Plan for RI Soil Sampling	Burns & McDonnell
FFTA	4.3	FFTA 4.3 001	11-Nov-94	Quality Control Summary Report Periodic Groundwater Monitoring Samples Analytical Data Reported for On-Post Wells: July and August 1994, Off-post wells: July & August 1994	Louis Berger & Associates

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FFTA	4.3	FFTA 4.3 003	08-Dec-94	Quality Control Summary Report Periodic Groundwater Monitoring Samples Former Fire Training Marshall Army Airfield at Fort Riley, Kansas Analytical Data Reported for On-post wells October 1994 and Off post wells October 1994	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 004	23-Jan-95	Quality Control Summary Report Site Characterization and Penetrometer Systems (SCAPS) Investigation in Support of Deep Alluvial Well Siting Former Fire Training Area - Marshall Army Airfield at Fort Riley Kansas Analytical Data Reported for Groundwater Samples	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 005	23-Mar-95	Quality Control Summary Report Periodic Groundwater Monitoring Samples Analytical Data Reported for On-Post Wells: January 1995; Phase II Groundwater Screening: January 1995; Off-Post Wells: January 1995; Piezometers: January 1995	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 006	15-Jun-95	Quality Control Summary Report Periodic Groundwater Monitoring Samples Former Fire Training Area - Marshall Army Airfield at Fort Riley Kansas Analytical Data reported for On-post wells April 1995 offpost wells April 1995	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 007	13-Oct-95	Quality Control Summary Report Periodic Groundwater Monitoring Samples Former Fire Training Area Marshall Army Airfield at Fort Riley Kansas Analytical Data reported for onpost Wells August 1995 Off post wells August 1995	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 008	05-Feb-96	Quality Control Summary Report Periodic Groundwater Monitoring Samples Analytical Data Reported for On-Post Wells: December 1995; Off-Post Wells: December 195	Louis Berger & Associates

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FFTA	4.3	FFTA 4.3 009	24-Jul-96	Quality Control Summary Report Periodic Groundwater Monitoring Samples and Soil Samples from Monitor Well Installations Former Fire Training Area - Marshall Army Airfield at Fort Riley Kansas Analytical Data report for On Post wells May & June 1996; off post wells May & June 1996; soil samples May 1996	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 010	14-Oct-96	Quality Control Summary Report Periodic Groundwater Monitoring Samples Former Fire Training Area - Marshall Army Airfield at Fort Riley Kansas Analytical Data reported for On-Post wells August 1996; off post wells August 1996	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 011	17-Jan-97	Analytical Data Report for Additional Monitoring Wells for the Former Fire Training Area Marshall Army Airfield Fort Riley Kansas	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 012	04-Feb-97	Quality Control Summary Report Groundwater Monitoring Samples Former Fire Training Area - Marshall Army Airfield at Fort Riley Kansas Analytical data reported for December 1996 Sampling of Groundwater Monitoring wells, Private wells and Piezometer	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 013	03-Jul-97	Quality Control Summary Report Analytical Data May 1997 Groundwater Sampling Event for the Former Fire Training Area at Marshall Army Airfield	Burns & McDonnell
FFTA	4.3	FFTA 4.3 014	03-Jul-97	Quality Control Summary Report May 1997 Groundwater Sampling Event for the Former Fire Training Area at Marshall Army Airfield	Burns & McDonnell
FFTA	4.3	FFTA 4.3 015	13-Oct-97	Quality Control Summary Report August 1997 Groundwater Sampling Event	Burns & McDonnell
FFTA	4.3	FFTA 4.3 016	13-Oct-97	Quality Control Summary Report Analytical Data August 1997 Groundwater Sampling Event	Burns & McDonnell
FFTA	4.3	FFTA 4.3 017	03-Apr-98	Quality Control Summary Report February 1998 Groundwater Sampling Event	Burns & McDonnell
FFTA	4.3	FFTA 4.3 018	03-Apr-98	Quality Control Summary Report Analytical Data for the February 1998 Groundwater Sampling Event	Burns & McDonnell
FFTA	4.3	FFTA 4.3 019	23-Apr-98	Quality Assurance Report	Chemistry & Materials QA L

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FFTA	4.3	FFTA 4.3 020	17-Aug-98	Quality Control Summary Report May/June 1998 Groundwater Sampling Event, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 021	17-Aug-98	Quality Control Summary Report Analytical Data May/June 1998 Groundwater Sampling Event, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 022	20-Oct-98	Quality Control Summary Report August 1998 Groundwater Sampling Event, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 023	20-Oct-98	Quality Control Summary Report Analytical Data August 1998, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 024	19-Jan-99	Analytical Data Report for Additional Monitoring Wells for FFTA	Louis Berger & Associates
FFTA	4.3	FFTA 4.3 025	25-Mar-99	Quality Control Summary Report January 1999 Groundwater Sampling Event, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 026	25-Mar-99	Quality Control Summary Report Analytical Data January 1999 Groundwater Sampling Event, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 027	01-Jul-99	Quality Control Summary Report May 1999 Groundwater Sampling Event, Vol I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 028	01-Jul-99	Quality Control Summary Report analytical Data May 1999 Groundwater Sampling Event for FFTA, Vol II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 029	23-Aug-99	Quality Control Summary Report Remedial Investigation Soil Sampling for FFTA	Burns & McDonnell
FFTA	4.3	FFTA 4.3 030	09-Sep-99	Quality Control Summary Report July 1999 USGS River Sampling Event at Fort Riley, KS	Burns & McDonnell
FFTA	4.3	FFTA 4.3 031	10-Sep-99	Quality Control Summary Report Remedial Investigation Soil Sampling for the Former Fire Training Area	Burns & McDonnell
FFTA	4.3	FFTA 4.3 032	08-Oct-99	Quality Control Summary Report Aquifer Tracer Study for the Former Fire Training Area	Burns & McDonnell
FFTA	4.3	FFTA 4.3 033	29-Oct-99	Quality Control Summary Report for the Microcosm Study at FFTA	Burns & McDonnell
FFTA	4.3	FFTA 4.3 034	29-Oct-99	Analytical Data for Microcosm Study for FFTA, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 035	29-Oct-99	Analytical Data for Microcosm Study for FFTA, Vol II	Burns & McDonnell

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FFTA	4.3	FFTA 4.3 036	29-Oct-99	Analytical Data for Microcosm Study for FFTA, Vol III	Burns & McDonnell
FFTA	4.3	FFTA 4.3 037	29-Oct-99	Analytical Data for Microcosm Study at FFTA, Vol IV	Burns & McDonnell]
FFTA	4.3	FFTA 4.3 038	20-Oct-99	Quality Control Summary Report August 1999 Groundwater Sampling Event for the Former Fire Training Area, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 039	20-Oct-99	Quality Control Summary Report August 1999 Groundwater Sampling Event for the Former Fire Training Area, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 040	13-Apr-00	Quality Control Summary Report February 2000 Groundwater Sampling Event for the Former Fire Training Area, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 041	13-Apr-00	Quality Control Summary Report Analytical Data February 2000 Groundwater Sampling Event for the Former Fire Training Area, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 042	12-May-00	Quality Control Technical Memorandum March 2000 USGS River Sampling Event FFTA	Burns & McDonnell
FFTA	4.3	FFTA 4.3 043	09-Jun-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume I, Text and Tables	Burns & McDonnell
FFTA	4.3	FFTA 4.3 044	09-Jun-00	Quality Control Summary Report analytical Data for the Microcosm Study at FFTA, Volume II, Week 26 Data	Burns & McDonnell
FFTA	4.3	FFTA 4.3 045	09-Jun-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume III Supplemental QA/QC Information	Burns & McDonnell
FFTA	4.3	FFTA 4.3 046	18-Oct-00	Quality Control Summary Report Analytical Data August 2000 Groundwater Sampling Event at FFTA, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 047	18-Oct-00	Quality Control Summary Report Analytical Data August 2000 Groundwater Sampling Event at FFTA, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 047-D	13-Jan-01	Data Summary Report for August 2000 Groundwater Sampling	Burns & McDonnell

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FFTA	4.3	FFTA 4.3 048	30-Nov-00	Quality Control Summary Report analytical Data for the Microcosm Study at FFTA, Volume I Text and Tables	Burns & McDonnell
FFTA	4.3	FFTA 4.3 049	30-Nov-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume II Analytical Data	Burns & McDonnell
FFTA	4.3	FFTA 4.3 050	30-Nov-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume III Analytical Data	Burns & McDonnell
FFTA	4.3	FFTA 4.3 051	30-Nov-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume IV Analytical Data	Burns & McDonnell
FFTA	4.3	FFTA 4.3 052	30-Nov-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume V Analytical Data	Burns & McDonnell
FFTA	4.3	FFTA 4.3 053	30-Nov-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume VI Analytical Data	Burns & McDonnell
FFTA	4.3	FFTA 4.3 054	30-Nov-00	Quality Control Summary Report Analytical Data for the Microcosm Study at FFTA, Volume VII Analytical Data	Burns & McDonnell
FFTA	4.3	FFTA 4.3 055	04-May-01	Quality Control Summary Report Analytical Data February/March 2001 Groundwater Sampling Event for FFTA, Volume I	Burns & McDonnell
FFTA	4.3	FFTA 4.3 056	04-May-01	Quality Control Summary Report Analytical Data February/March 2001 Groundwater Sampling Event for FFTA, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 056-D	03-Jul-01	Data Summary Report for February/March 2001 at FFTA	Burns & McDonnell
FFTA	4.3	FFTA 4.3 057	28-Sep-01	Quality Control Summary Report July 2001 USGS River Sampling Event for Marshall Army Airfield	Burns & McDonnell
FFTA	4.3	FFTA 4.3 058	01-Nov-01	Quality Control Summary Report August 2001 Groundwater Sampling Event for FFTA, Volume 1	Burns & McDonnell
FFTA	4.3	FFTA 4.3 059	01-Nov-01	Quality Control Summary Report August 2001 Groundwater Sampling Event for FFTA, Volume II	Burns & McDonnell
FFTA	4.3	FFTA 4.3 059-D	09-Jan-02	Data Summary Report for August 2001 sampling	Burns & McDonnell
FFTA	4.4	FFTA 4.4 001	26-Mar-01	Draft Final Remedial Investigation Report for FFTA, Volume I - Text, Tables, Figures	Burns & McDonnell

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FFTA	4.4	FFTA 4.4 002	26-Mar-01	Draft Final Remedial Investigation Report for FFTA, Volume II - Text, Tables, Figures	Burns & McDonnell
FFTA	4.4	FFTA 4.4 003	26-Mar-01	Draft Final Remedial Investigation Report, Volume III - Appendices	Burns & McDonnell
FFTA-P	3.2	FFTA-P 3.2 001	09-Sep-94	Quality Control Summary Report Pilot Test Study Soil Vapor Extraction and Bioventing Systems Former Fire Training Area Marshall Army Airfield at Fort Riley, Kansas analytical data reported for Baseline Soil Boring Samples	Louis Berger & Associates
FFTA-P	3.2	FFTA-P 3.2 002	10-Jun-96	Quality Control Summary Report Post Pilot Study Expanded Soil Sampling for the Expanded Site Investigation-Former Fire Training Area Marshall Army Airfield, Fort Riley, Kansas and nearby Off-post properties Analytical Data reported for Soil Boring Samples Volume 1 of II	Louis Berger & Associates
FFTA-P	3.2	FFTA-P 3.2 003	10-Jun-96	Quality Control Summary Report Post-Pilot Study Expanded Soil Sampling for the Expanded Site Investigation-Former Fire Training Area Marshall Army Airfield, Fort Riley Kansas and Nearby Off Post Properties analytical Data reported for Soil boring Samples Volume II of II	Louis Berger & Associates
FFTA-P	3.6	FFTA-P 3.6 001	23-Mar-99	Pilot Test Study Results Report Soil Vapor Extraction and Bioventing Systems, Volume I- Text, Tables & Figures	Louis Berger & Associates
FFTA-P	3.6	FFTA-P 3.6 002	23-Mar-99	Pilot Test Study Results Report Soil Vapor Extraction and Bioventing Systems, Volume II - Appendices A-N	Louis Berger & Associates
FORS	13	FORS 13 001	10-Jan-99	Public Notice for Camp Forsyth EE/CA	
FORS	3.3	FORS 3.3 001	29-Jun-98	Draft Final Engineering Evaluation/Cost Analysis Report (Volume I)	Corps of Engineers
FORS	3.3	FORS 3.3 002	25-Sep-98	Republican River Bank Stabilization Design Analysis Report (Volume II)	Corps of Engineers
FORS	3.4	FORS 3.4 001	01-Mar-99	Action Memorandum and Responsiveness Summary	Ft Riley IRP
FORS	3.4	FORS 3.4 002	20-Jul-00	Bank Stabilization Operations Plans, Republican River Bank Stabilization	Wenck

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FORS	3.4	FORS 3.4 004	20-Jul-00	UXO Work Plan, Republican River Bank Stabilization, Camp Forsyth	Wenck
FORS	3.4	FORS 3.4 005	20-Jul-00	Contractor Quality Control Plan Republican River Bank Stabilization, Camp Forsyth	Wenck
GUID	14.1	GUID 14.1 001	24-Mar-87	Data Quality Objectives for Remedial Response Activities Volume 1 - Development Process	CDM Federal Programs Cor
GUID	14.1	GUID 14.1 002	29-Sep-89	Interim Final Report Hazardous Waste Management Consultation NO. 37-26-0190-89 Evaluation of Solid Waste Management Units 9-13 May 1988	AEHA
GUID	14.2	GUID 14.2 001	14-Dec-84	Installation Assessment of the Headquarters, 1st Infantry Division and Fort Riley Kansas	U.S. Army
GUID	14.2	GUID 14.2 002	01-Aug-90	Installation Restoration and Hazardous Waste Control Technologies	Corps of Engineers
GUID	14.2	GUID 14.2 003	01-Nov-92	Installation Restoration and Hazardous Waste Control Technologies	Corps of Engineers
GUID	14.2	GUID 14.2 004		U.S. Army Installation Restoration Program Guidance and Procedure	Corps of Engineers
GUID	14.3	GUID 14.3 001	01-Mar-87	Data Quality Objectives for Remedial Response Activities Example Scenario: RI/FS Activities at a Site with Contaminated Soils and Groundwater	EPA
GUID	14.3	GUID 14.3 002	01-Jun-88	Community Relations in Superfund: Interim Version	EPA
GUID	14.3	GUID 14.3 003	01-Aug-88	CERCLA Compliance with Other Laws Manual: Interim Final	EPA
GUID	14.3	GUID 14.3 004	01-Oct-88	Guidance for Conducting Remedial Investigations and Feasibility Studies Under CERCLA, Interim Final	EPA
GUID	14.3	GUID 14.3 005	01-Apr-89	Procedures for Completion and Deletion of National Priorities List Sites	EPA
GUID	14.3	GUID 14.3 006	01-Aug-89	CERCLA Compliance with Other Laws Manual Part II - Clean Air Act and Other Environmental Statutes and State Requirements	EPA

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GUID	14.3	GUID 14.3 007	01-Dec-90	Superfund Removal Procedures Action Memorandum Guidance	EPA
GUID	14.3	GUID 14.3 008	22-Apr-91	Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions	EPA
GUID	14.3	GUID 14.3 009	01-May-91	Management of Investigation-Derived Wastes During Site Inspection	EPA
GUID	14.3	GUID 14.3 010	01-Sep-91	Guidance for Performing Preliminary Assessment under CERCLA	EPA
GUID	14.3	GUID 14.3 011	01-Nov-91	Compendium of Superfund Program Publications	EPA
GUID	14.3	GUID 14.3 012	01-Jul-89	Guidance of Preparing Superfund Decision Documents	EPA
HIGH	2.2	HIGH 2.2 001	20-Aug-93	Draft Final Sampling and Analysis Plan for Site Investigations of High Priority Sites	Louis Berger & Associates
HIGH	2.3	HIGH 2.3 001	17-Dec-93	Quality Control Summary Report for Site Investigations of High Priority Sites, Volume I of II	Louis Berger & Associates
HIGH	2.3	HIGH 2.3 002	17-Dec-93	Quality Control Summary Report for Site Investigations of High Priority Sites, Volume II of II	Louis Berger & Associates
HIGH	2.4	HIGH 2.4 001	20-Jun-94	Draft Final Site Investigation Report for High Priority Sites	Louis Berger & Associates
IAG	13	IAG 13 001	07-Mar-91	Public Notice published in Manhattan Mercury for the Interagency Agreement	
IWSA	1.2	IWSA 1.2 001	16-Feb-93	Draft Final Installation-Wide Site Assessment for Fort Riley Kansas	Louis Berger & Associates
IWSA	1.2	IWSA 1.2 002	04-Feb-93	Installation Wide Site Assessment References - Data Sheets for IWSA 1-500	Louis Berger & Associates, I
IWSA	1.2	IWSA 1.2 003	04-Feb-93	Installation Wide Site Assessment References -- Data Sheets for InstallationWide Site Assessment 501-700	Louis Berger & Associates
IWSA	1.2	IWSA 1.2 004	04-Feb-93	Installation Wide Site Assessment References -- Data Sheets for InstallationWide Site Assessment 701-740	Louis Berger & Associates
IWSA	1.2	IWSA 1.2 005	04-Feb-93	Installation Wide Site Assessment References -- Data Sheets for Installation Wide Site Assessment 741-806	Louis Berger & Associates

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IZSA	2.2	IZSA 2.2 001	29-May-92	Draft Final Sampling and Analysis Plan for Field Investigation at the Fort Riley Impact Zone: Impact Area Perimeter Wells and Surface Drainage	Louis Berger & Associates
IZSA	2.4	IZSA 2.4 001	11-Mar-93	Draft Final Impact Area Site Assessment Report Volume I of II	Louis Berger & Associates
LEAD	2.1	LEAD 2.1 001	10-May-93	Work Plan for Expedited Investigation of Sites Potentially Contaminated with Lead for Fort Riley, Kansas	Louis Berger & Associates
LEAD	2.3	LEAD 2.3 001	07-Sep-93	Data Summary and Evaluation Report for Investigation of High Priority Sites Potentially Contaminated with Lead	Louis Berger & Associates
MSI	13	MSI 13 001	28-Jan-98	Public Notice for Decision Document for Multiple Site Investigation	
MSI	2.2	MSI 2.2 001	08-Dec-95	Draft Final Sampling and Analysis Plan for Confirmation Groundwater Sampling at Multi Sites	Louis Berger and Associate
MSI	4.3	MSI 4.3 001	28-Feb-96	Quality Control Summary Report Confirmation Groundwater Sampling at the Multi-Sites Analytical Data reported for Groundwater from Monitoring Wells	Louis Berger & Associates
MSI	4.3	MSI 4.3 002	21-Mar-96	Quality Control Summary Report Addendum Confirmation Groundwater Sampling at Multi Sites Analytical data reported for GW from Monitoring Wells Camp Forsyth Area	Louis Berger and Associate
MSI	8.1	MSI 8.1 001	01-Jan-98	Proposed Decision Document	Ft Riley
OB/OD	2.2	OB/OD 2.2 001	10-Apr-97	Draft Final Sampling and Analysis Plan for Supplemental Site Investigation at the OB/OD	Louis Berger & Associates
OB/OD	2.3	OB/OD 2.3 001	05-Nov-97	Quality Control Summary Report Supplemental Site Investigation Analytical Data Reported for Groundwater Samples Collected March - September 1997	Louis Berger & Associates
OB/OD	2.3	OB/OD 2.3 002	02-Feb-98	Quality Control Summary Report Supplemental Site Investigation Analytical Data reported for Groundwater Samples collected December 1997	Louis Berger & Associates
OB/OD	2.3	OB/OD 2.3 003	08-May-98	Draft Final Technical Memorandum Mobilization #2 Activities	Louis Berger & Associates

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OB/OD	2.3	OB/OD 2.3 004	22-Jun-98	Quality Control Summary Report Supplemental Site Investigation Analytical Data reported for Groundwater Samples collected April 1998	Louis Berger and Associate
OB/OD	2.3	OB/OD 2.3 005	14-Oct-98	Quality Control Summary Report Supplemental Site Investigation - August 1998 Analytical Data reported for Groundwater and Surface Water Samples	Louis Berger & Associates
OB/OD	2.3	OB/OD 2.3 006	15-Mar-99	Quality Control Summary Report Supplemental Site Investigation - January 1999 analytical Data reported for Groundwater and Surface Water Samples	Louis Berger & Associates
OB/OD	2.4	OB/OD 2.4 001	06-Aug-98	Draft Final Site Investigation Report Addendum for the Open Burn/Open Detonation Rea	Louis Berger & Associates
OB/OD	4.1	OB/OD 4.1 001	05-Apr-99	Work Plan for Installation and Operation of Streamflow-Gaging Station and Automated Sampler at OB/OD	U.S. Geological Survey
OB/OD	4.3	OB/OD 4.3 001	03-Oct-01	Quality Control Summary Report June 2001 Surface Water Sampling Events	Burns & McDonnell
OTHR	2.2	OTHR 2.2 001	19-Jan-94	Draft Final Sampling and Analysis Plan for Site Investigations of the Other Sites	Louis Berger & Associates
OTHR	2.3	OTHR 2.3 001	27-May-94	Quality Control Summary Report Site Investigation of the Other Sites Volume I	Louis Berger & Associates
OTHR	2.3	OTHR 2.3 002	27-May-94	Quality Control Summary Report Site Investigation of the Other Sites, Volume II	Louis Berger & Associates
OTHR	2.3	OTHR 2.3 003	02-Sep-94	Quality Control Summary Report Site Investigations of the Other Sites	Louis Berger & Associates
OTHR	2.4	OTHR 2.4 001	19-Apr-95	Draft Final Site Investigation Report for Other Sites, Volume I of II	Louis Berger & Associates
OTHR	2.4	OTHR 2.4 002	19-Apr-95	Draft Final Site Investigation Report for Other Sites, Vol II of II, Appendices	Louis Berger & Associates
PSF	13	PSF 13 001	12-Aug-93	Public Notice for Pesticide Storage Facility EE/CA	
PSF	13	PSF 13 002	24-Aug-97	Public Notice for Pesticide Storage Facility Proposed Plan	
PSF	3.3	PSF 3.3 001	16-Aug-93	Draft Final Engineering Evaluatioan/Cost Analysis (EE/CA) for the Pesticide Storage Facility	Law Environmental

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PSF	3.4	PSF 3.4 001	01-Dec-93	Action Memorandum for Removal Action	Ft Riley IRP
PSF	4.1	PSF 4.1 001	01-Dec-91	Draft Final Volume I - Work Plan, Volume II - Site Safety and Health Plan; Volume III - Quality Assurance Project Plan; Volume IV - Field Sampling Plan for Remedial Investigation /Feasibility Study Pesticide Storage Facility	Law Environmetnal
PSF	4.1	PSF 4.1 002	01-Sep-92	Volume I Draft Final Modified Work Plan for Remedial Investigation/FEasibility Study for the Pesticide Storage Facility	Law Environmental
PSF	4.1	PSF 4.1 003	01-Sep-92	Volume II Draft Final Modified Quality Assurance Project Plan for Remedial Investigatin/Feasibility Study for the Southwest Funston Landfill and Pesticide Storage Facility	Law Environmental
PSF	4.1	PSF 4.1 004	01-Sep-92	Volume III Draft Final Modified Site Specific Safety and Health Plan for Remedial Investigation/Feasibility Study for the Pesticide Storage Facility	Law Environmental
PSF	4.1	PSF 4.1 005	01-Sep-92	Volume IV Draft Final Modified Basic Site Safety and Health Plan for Remedial Investigation/Feasibility Study Southwest Funston Landfill and Pesticide Storage Facility	Law Environmental
PSF	4.1	PSF 4.1 006	01-Sep-92	Volume V Draft Final Modified Field Sampling Plan for Remedial Investigation/Feasibility Study for the Pesticide Storage Facility	Law Environmental
PSF	4.3	PSF 4.3 001	01-Sep-92	Volume I Quality Control Summary Report (Baseline) and Appendices A-D for the Remedial Investigation/Feasibility Study for the Pesticide Storage Facility	Law Environmental
PSF	4.3	PSF 4.3 002	01-Sep-92	Volume II Quality Control Summary Report (Baseline) Appendix E for the Remedial Investigation/Feasibility Study for the Pesticide Storage Facility	Law Environmental
PSF	4.3	PSF 4.3 003	01-Sep-92	Volume III Quality Control Summary Report (Baseline) (Appendix E Continued) for the Remedial Investigation/Feasibility Study for the Pesticide Storage Facility	Law Environmental

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PSF	4.3	PSF 4.3 005	01-Apr-93	Quality Control Summary Report Second Quarter Groundwater Sampling Event for Remedial Investigation/Feasibility Study for the Pesticide Storage Facility	Law Environmental
PSF	4.3	PSF 4.3 006	08-Jul-93	Quality Control Summary Report Third Quarter Groundwater Sampling Event for Remedial Investigation/Feasibility Study for Pesticide Storage Facility	Law Environmental
PSF	4.3	PSF 4.3 007	12-Apr-95	Quality Control Summary Report September 1994 Groundwater Sampling	Law Environmental
PSF	4.4	PSF 4.4 001	01-Dec-93	Draft Final Remedial Investigation for Remedial Investigation/Feasibility Study Pesticide Storage Facility (Original date 7/93, Revised 12/93)	Law Environmental
PSF	4.4	PSF 4.4 002	09-Jun-97	Draft Final Remedial Investigation Addenda: Remedial Investigation Summary, removal Action Report, Residual Risk Assessment, comparison of Groundwater Inorganic Concentrations in on-site and background monitoring wells, and identification of applicable or relevant and appropriate requirements	Law Environmental
PSF	6.1	PSF 6.1 001	01-Aug-97	Proposed Plan	Ft Riley IRP
PSF	7.1	PSF 7.1 001	01-Sep-97	Record of Decision	Ft Riley IRP
PUBIC	13.4	PUBLIC 13.4 002		RAB Meetings	Ft Riley IRP
PUBLIC	13.4	PUBLIC 13.4 001		RAB Newsletters	Ft Riley IRP
PUBLIC	13.4	PUBLIC 13.4 002		RAB Meetings	
PUBLIC	13.5	PUBLIC 13.5 001	01-Jul-91	Fort Riley Military Reservation Environmental Restoration Newsletter No. 1	Fort Riley IRP
PUBLIC	13.5	PUBLIC 13.5 002	12-May-93	Fort Riley Installation Restoration Program Fact Sheet Lead in Soils Investigation	Fort Riley IRP

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PUBLIC	13.6	PUBLIC 13.6 001	19-Jul-91	Fort Riley Post article "Post restoration effort begins:	
PUBLIC	13.6	PUBLIC 13.6 002	29-Sep-91	Manhattan Mercury article "Superfund Cleanup to take time"	
PUBLIC	13.6	PUBLIC 13.6 003	08-Jan-92	Daily Union article "Fort plans meetings to discuss Superfund"	
PUBLIC	13.6	PUBLIC 13.6 004	19-Jan-92	Manhattan Mercury article "Fort Riley will host meeting on waste clean-up efforts"	
PUBLIC	13.6	PUBLIC 13.6 005	23-Jan-92	Daily Union article "Fort environmental program model for others"	
PUBLIC	13.6	PUBLIC 13.6 006	28-Jan-92	Daily Union article "Fort officials to host waste meeting"	
PUBLIC	13.6	PUBLIC 13.6 007	29-Jan-92	Kansas State Collegian article "Clean-up plans focus of meeting"	
PUBLIC	13.6	PUBLIC 13.6 008	29-Jan-92	EPA, Fort Riley officials discuss cleanup plans	
PUBLIC	13.6	PUBLIC 13.6 009	21-Feb-92	Fort Riley Post article "Public meeting set Tuesday"	
PUBLIC	13.6	PUBLIC 13.6 010	23-Feb-92	Manhattan Mercury article "Information Meeting"	
PUBLIC	13.6	PUBLIC 13.6 011	23-Feb-92	Manhattan Mercury article "Fort Riley will host information meeting on Superfund cleanup"	
PUBLIC	13.6	PUBLIC 13.6 012	24-Feb-92	Daily Union article "Fort to conduct forum in Manhattan"	
PUBLIC	13.6	PUBLIC 13.6 013	28-Feb-92	Ft Riley Post article "Environmental clean up steps taken on post"	
PUBLIC	13.6	PUBLIC 13.6 014	19-Mar-92	Manhattan Free Press article "Fort Riley on Superfund List"	
PUBLIC	13.7	PUBLIC 13.7		Technical Review Committee Meetings	Ft Riley
PUBLIC	13.8	PUBLIC 13.8 001	01-Mar-97	1997 March Installation Action Plan	FT Riley IRP
PUBLIC	13.8	PUBLIC 13.8 002	01-Mar-98	1998 Installation Action Plan	Ft Riley IRP
PUBLIC	13.8	PUBLIC 13.8 003	01-Mar-99	1999 Installation Action Plan	Ft Riley IRP

<i>Site</i>	<i>Section</i>	<i>Document Number</i>	<i>Document Date</i>	<i>Document Title</i>	<i>Author</i>
PUBLIC	13.8	PUBLIC 13.8 004	01-Mar-00	2000 Installation Action Plan	Ft Riley IRP
PUBLIC	13.8	PUBLIC 13.8 005	01-Mar-01	2001 Installation Action Plan	Ft Riley IRP
PUBLIC	13.8	PUBLIC 13.8 006	01-Mar-02	2002 Installation Action Plan	Ft Riley IRP
RAP	13	RAP 13 001	24-May-94	Public Notice for Rapid Response Removal Action	
RAP	2.1	RAP 2.1 001	27-Jan-94	Final Work Plan for Rapid Response Removal of Contaminated Soils Pesticide Storage Facility and Colyer Manor Sites	OHM Remediation Services,
SEFL	13	SEFL 13 001	14-Feb-99	Public Notice for Southeast Funston Landfill/Incinerator EE/CA	
SEFL	2.2	SEFL 2.2 001	18-Apr-97	Draft Final Sampling and Analysis Plan for Supplemental Site Investigation at the SEFL Incinerator Area	Louis Berger & Associates
SEFL	2.3	SEFL 2.3 001	13-Jun-97	Quality Control Summary Report Supplemental Site Investigation at the Southeast Funston Landfill Incinerator Area Analytical Data Reported for Soil, Surface Water and Sediment Collected March 1997	Louis Berger & Associates
SEFL	3.3	SEFL 3.3 001	25-Jan-99	Final Engineering Evaluation/Cost Analysis Study Report for Southeast Funston Landfill Cover Repair West Portion of Landfill and Incinerator Area Hot Spot Removal and Re-burial	CENWK
SEFL	3.4	SEFL 3.4 001	21-Jun-99	Action Memorandum and Responsiveness Summary - Removal Action at SEFL	Directorate of Env & Safety
SEFL	3.6	SEFL 3.6 001	01-Aug-00	Draft Final Removal Action Report Landfill Cover Repair and Incinerator Area Contaminated Material Removal	Wenck
SFL	3.3	SFL 003.3 001	01-Jul-93	Final Engineering Evaluation/Cost Analysis (EE/CA) Study Report for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.1	SFL 004.1 001	01-Dec-91	Draft Final Volume I - Work Plan; Volume II Site Safety and Health Plan; Volume III - Quality Assurance Project Plan; Volume IV Field Sampling Plan	Law Environmental

<i>Site</i>	<i>Section</i>	<i>Document Number</i>	<i>Document Date</i>	<i>Document Title</i>	<i>Author</i>
SFL	4.1	SFL 004.1 002	01-Sep-92	Volume I Draft Final Modified Work Plans for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.1	SFL 004.1 003	01-Sep-92	Volume II Draft Final Modified Quality Assurance Project Plan for Remedial Investigation/Feasibility Study Southwest Funston Landfill and Pesticide Storage Facility	Law Environmental
SFL	4.1	SFL 004.1 004	01-Sep-92	Volume III Draft Final Modified Site Specific Safety and Health Plan for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.1	SFL 004.1 005	01-Sep-92	Volume IV Draft Final Modified Basic Safety and Health Plan for Remedial Investigation/Feasibility Study Southwest Funston Landfill and Pesticide Storage Facility	Law Environmental
SFL	4.1	SFL 004.1 006	01-Sep-92	Volume V Draft Final Modified Field Sampling Plan for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.3	SFL 004.3 001	01-Oct-92	Volume I Quality Control Summary Report (Baseline) and Appendices A-E for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.3	SFL 004.3 002	01-Oct-92	Volume II Quality Control Summary Report (Baseline) Appendix F Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.3	SFL 004.3 003	01-Oct-92	Volume III Quality Control Summary Report (Baseline) Appendix F (continued) Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.3	SFL 004.3 004	01-Jan-93	Quality Control Summary Report First Quarter Groundwater Sampling Event for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental
SFL	4.3	SFL 004.3 005	01-Apr-93	Quality Control Summary Report Second Quarter Groundwater Sampling Event for Remedial Investigation/Feasibility Study Southwest Funston Landfill	Law Environmental

<i>Site</i>	<i>Section</i>	<i>Document Number</i>	<i>Document Date</i>	<i>Document Title</i>	<i>Author</i>
SFL	4.3	SFL 004.3 006	01-Jul-93	Quality Control Summary Report Third Quarter Grounwater Sampling Event for Remedial Investigation/FEasibility Study for Southwest Funston Landfill	Corps of Engineers - KC Dis
SFL	4.3	SFL 004.3 007	22-Oct-93	Quality Control Summary Report Fourth Quarter Groundwater Sampling Event	Law Environmental
SFL	4.3	SFL 004.3 008	16-Feb-94	Laboratory Test Data Cover Soils	N/A
SFL	4.3	SFL 004.3 009	13-Jan-95	Quality Control summary Report (October 1994) Monitoring Well Sampling & analysis Southwest Funston Landfill, Camp Funston, and Southeast Funston Landfill	
SFL	4.3	SFL 004.3 010	27-Nov-00	Quality Control Summary Report April 2000 Groundwater Sampling Event for Southwest Funston Landfill Long-Term Monitoring and Camp Funston Area Groundwater Study	Burns & McDonnell
SFL	4.3	SFL 004.3 011	28-Sep-01	Quality Control Summary Report July 2001 USGS River Sampling Event for the Southwest Funston Landfill	Burns & McDonnell
SFL	4.4	SFL 004.4 001	12-Apr-94	Draft Final Remedial Investigation Report	Law Environmental
SFL	4.4	SFL 004.4 002	01-Oct-94	Draft Final Remedial Investigation Report Appendices	Law Environmental
SFL	6.1	SFL 006.1 001	01-Nov-94	Proposed Plan Southwest Funston Landfill Operable Unit 001	U.S. Army
SFL	7.1	SFL 007.1 001		Record of Decision	Ft Riley IRP
SFL	13.0	SFL 013.0 001	15-Aug-93	Public Notice for Southwest Funston Landfill EE/CA	
SFL	13.0	SFL 013.0 002	06-Nov-94	Public Notice for Southwest Funston Landfill Proposed Plan	

APPENDIX B

FIVE-YEAR REVIEW SUMMARY FORM

Five-Year Review Summary Form

SITE IDENTIFICATION

Site name (from WasteLAN): Fort Riley

EPA ID (from WasteLAN): KSL6214020756

Region: VII State: Kansas City/County: Fort Riley / Geary County

SITE STATUS

NPL status: Final Deleted Other (specify) _____Remediation status (choose all that apply): Under Construction Operating CompleteMultiple OUs? YES NO Construction completion date: ___/___/___ N/AHas site been put into reuse? YES NO

REVIEW STATUS

Lead agency: EPA State Tribe Other Federal Agency Dept. of Army

Author name: Dr. Richard Shields

Author title: Geologist Author affiliation: Ft. Riley I.R. Program

Review period: ** ___/___/___ to ___/___/___

Date(s) of site inspection: Jan / 1st / 02 SF
July, Oct, & Nov 01 SF
1st / 02 SF

Type of review:

 Post-SARA Pre-SARA NPL-Removal only
 Non-NPL Remedial Action Site NPL State/Tribe-lead
 Regional Discretion
Review number: 1 (first) 2 (second) 3 (third) Other (specify) _____

Triggering action:

 Actual RA Onsite Construction at OU # _____ Actual RA Start at OU# _____
 Construction Completion Previous Five-Year Review Report
 Other (specify) Signature on ROD for Southwest Funston Landfill

Triggering action date (from WasteLAN): 8/6/97

Due date (five years after triggering action date): 8/6/02

* ["OU" refers to operable unit.]

** [Review period should correspond to the actual start and end dates of the Five-Year Review in WasteLAN.]

Five-Year Review Summary Form, cont'd.

Issues:

Summarize issues (see Chapter 3).

Vinyl chloride is still above the MCL but \approx 66% less than at the time of the ROD.

Recommendations and Follow-up Actions:

Summarize recommendations and follow-up actions (see Chapter 3).

Remedies are functioning as planned and we will continue the long-term monitoring and cover repair.

Protectiveness Statement(s):

Include individual operable unit protectiveness statements. For sites that have reached construction completion and have more than one OU, include an additional and comprehensive protectiveness statement covering all of the remedies at the site (see Chapter 4).

The remedies at the Southwest Funston Landfill (SFL), Operable Unit 001 & the Pesticide Storage Facility (PSF), Operable Unit 002 are protective of human health and the environment and exposure pathways that could result in unacceptable risks are being controlled.

Other Comments:

Make any other comments here.

None

APPENDIX C
PSF SITE INSPECTION CHECKLIST

Please note that "O&M" is referred to throughout this checklist. At sites where Long-Term Response Actions are in progress, O&M activities may be referred to as "system operations" since these sites are not considered to be in the O&M phase while being remediated under the Superfund program.

Five-Year Review Site Inspection Checklist (Template)

(Working document for site inspection. Information may be completed by hand and attached to the Five-Year Review report as supporting documentation of site status. "N/A" refers to "not applicable.")

I. SITE INFORMATION													
Site name: <u>Pesticide Storage Facility O&M</u>	Date of inspection: <u>January 10, 2002</u>												
Location and Region: <u>Fort Riley, Kansas Region VII</u>	EPA ID: <u>K56214020756</u>												
Agency, office, or company leading the five-year review: <u>Dept. of Army</u>	Weather/temperature: <u>Cool, breezy, 30s</u>												
Remedy Includes: (Check all that apply) <table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____ </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls </td> </tr> </table>		<input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls										
<input type="checkbox"/> Landfill cover/containment <input checked="" type="checkbox"/> Access controls <input checked="" type="checkbox"/> Institutional controls <input type="checkbox"/> Groundwater pump and treatment <input type="checkbox"/> Surface water collection and treatment <input type="checkbox"/> Other _____	<input type="checkbox"/> Monitored natural attenuation <input type="checkbox"/> Groundwater containment <input type="checkbox"/> Vertical barrier walls												
Attachments: Inspection team roster attached <u>N/A</u> Site map attached <u>N/A</u>													
II. INTERVIEWS (Check all that apply)													
1. O&M site manager <u>N/A</u> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;"></td> <td style="width: 20%;">Name</td> <td style="width: 20%;">Title</td> <td style="width: 20%;">Date</td> </tr> <tr> <td>Interviewed</td> <td>at site</td> <td>at office</td> <td>by phone</td> </tr> <tr> <td colspan="2">Problems, suggestions;</td> <td colspan="2">Report attached _____</td> </tr> </table>			Name	Title	Date	Interviewed	at site	at office	by phone	Problems, suggestions;		Report attached _____	
	Name	Title	Date										
Interviewed	at site	at office	by phone										
Problems, suggestions;		Report attached _____											
2. O&M staff <u>N/A</u> <table style="width: 100%; border: none;"> <tr> <td style="width: 40%;"></td> <td style="width: 20%;">Name</td> <td style="width: 20%;">Title</td> <td style="width: 20%;">Date</td> </tr> <tr> <td>Interviewed</td> <td>at site</td> <td>at office</td> <td>by phone</td> </tr> <tr> <td colspan="2">Problems, suggestions;</td> <td colspan="2">Report attached _____</td> </tr> </table>			Name	Title	Date	Interviewed	at site	at office	by phone	Problems, suggestions;		Report attached _____	
	Name	Title	Date										
Interviewed	at site	at office	by phone										
Problems, suggestions;		Report attached _____											

3. **Local regulatory authorities and response agencies** (i.e., State and Tribal offices, emergency response office, police department, office of public health or environmental health, zoning office, recorder of deeds, or other city and county offices, etc.) Fill in all that apply.

Agency	N/A			
Contact				
	Name	Title	Date	Phone no.
Problems; suggestions;	Report attached			

Agency				
Contact				
	Name	Title	Date	Phone no.
Problems; suggestions;	Report attached			

Agency				
Contact				
	Name	Title	Date	Phone no.
Problems; suggestions;	Report attached			

Agency				
Contact				
	Name	Title	Date	Phone no.
Problems; suggestions;	Report attached			

4. **Other interviews (optional)** Report attached.

N/A				

III. ON-SITE DOCUMENTS & RECORDS VERIFIED (Check all that apply)				
1.	O&M Documents			
	O&M manual	Readily available	Up to date	N/A
	As-built drawings	Readily available	Up to date	N/A
	Maintenance logs	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			
2.	Site-Specific Health and Safety Plan	Readily available	Up to date	N/A
	Contingency plan/emergency response plan	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			
3.	O&M and OSHA Training Records	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			
4.	Permits and Service Agreements <u>N/A</u>			
	Air discharge permit	Readily available	Up to date	N/A
	Effluent discharge	Readily available	Up to date	N/A
	Waste disposal, POTW	Readily available	Up to date	N/A
	Other permits _____	Readily available	Up to date	N/A
	Remarks _____			
5.	Gas Generation Records	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			
6.	Settlement Monument Records	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			
7.	Groundwater Monitoring Records	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			
8.	Leachate Extraction Records	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			
9.	Discharge Compliance Records			
	Air	Readily available	Up to date	N/A
	Water (effluent) <u>N/A</u>	Readily available	Up to date	N/A
	Remarks _____			
10.	Daily Access/Security Logs	Readily available	Up to date	N/A
	Remarks <u>N/A</u>			

IV. O&M COSTS			
1.	O&M Organization		
	State in-house	Contractor for State	
	PRP in-house	Contractor for PRP	
	Federal Facility in-house	Contractor for Federal Facility	
	Other <u>N/A</u>		
<hr/>			
2.	O&M Cost Records		
	Readily available	Up to date	
	Funding mechanism/agreement in place	<u>N/A</u>	
	Original O&M cost estimate _____	Breakdown attached	
	Total annual cost by year for review period if available		
	From _____ To _____	_____	Breakdown attached
	Date Date	Total cost	
	From _____ To _____	_____	Breakdown attached
	Date Date	Total cost	
	From _____ To _____	_____	Breakdown attached
	Date Date	Total cost	
	From _____ To _____	_____	Breakdown attached
	Date Date	Total cost	
<hr/>			
3.	Unanticipated or Unusually High O&M Costs During Review Period		
	Describe costs and reasons: <u>N/A</u>		

<hr/>			
V. ACCESS AND INSTITUTIONAL CONTROLS		(Applicable)	N/A
<hr/>			
A. Fencing			
1.	Fencing damaged	Location shown on site map	Gates secured
	Remarks <u>Fencing in good condition</u>		N/A
<hr/>			
B. Other Access Restrictions			
1.	Signs and other security measures	Location shown on site map	(N/A)
	Remarks _____		

C. Institutional Controls (ICs)				
1. Implementation and enforcement				
Site conditions imply ICs not properly implemented		Yes	<input checked="" type="radio"/> No	N/A
Site conditions imply ICs not being fully enforced		Yes	<input checked="" type="radio"/> No	N/A
Type of monitoring (e.g., self-reporting, drive by) <u>Drive by</u>				
Frequency <u>Infrequent</u>				
Responsible party/agency <u>DES Dept. of Army Fort Riley</u>				
Contact				
	Name	Title	Date	Phone no.
Reporting is up-to-date		Yes	No	<input checked="" type="radio"/> N/A
Reports are verified by the lead agency		Yes	No	<input checked="" type="radio"/> N/A
Specific requirements in deed or decision documents have been met		Yes	No	<input checked="" type="radio"/> N/A
Violations have been reported		Yes	No	<input checked="" type="radio"/> N/A
Other problems or suggestions:		Report attached		
2. Adequacy				
	<input checked="" type="radio"/> ICs are adequate		<input type="radio"/> ICs are inadequate	
Remarks				
D. General				
1. Vandalism/trespassing				
Remarks		Location shown on site map		No vandalism evident
<u>N/A</u>				
2. Land use changes on site				
Remarks		<input checked="" type="radio"/> N/A		
3. Land use changes off site				
Remarks		<input checked="" type="radio"/> N/A		
VI. GENERAL SITE CONDITIONS				
A. Roads				
Applicable		<input checked="" type="radio"/> N/A		
1. Roads damaged				
Remarks		Location shown on site map		Roads adequate
N/A				

B. Other Site Conditions			
Remarks <u>N/A</u>			
VII. LANDFILL COVERS Applicable <u>N/A</u>			
A. Landfill Surface			
1.	Settlement (Low spots) Areal extent _____ Remarks _____	Location shown on site map Depth _____	Settlement not evident
2.	Cracks Lengths _____ Remarks _____	Widths _____ Depths _____	Cracking not evident
3.	Erosion Areal extent _____ Remarks _____	Location shown on site map Depth _____	Erosion not evident
4.	Holes Areal extent _____ Remarks _____	Location shown on site map Depth _____	Holes not evident
5.	Vegetative Cover Trees/Shrubs (indicate size and locations on a diagram) Remarks _____	Grass _____ Cover properly established _____	No signs of stress
6.	Alternative Cover (armored rock, concrete, etc.) Remarks _____		N/A
7.	Bulges Areal extent _____ Remarks _____	Location shown on site map Height _____	Bulges not evident

8.	Wet Areas/Water Damage	Wet areas/water damage not evident	
	Wet areas	Location shown on site map	Areal extent _____
	Ponding	Location shown on site map	Areal extent _____
	Seeps	Location shown on site map	Areal extent _____
	Soft subgrade	Location shown on site map	Areal extent _____
	Remarks _____		
9.	Slope Instability	Slides	Location shown on site map No evidence of slope instability
	Areal extent _____		
	Remarks _____		
B. Benches	Applicable	(N/A)	
(Horizontally constructed mounds of earth placed across a steep landfill side slope to interrupt the slope in order to slow down the velocity of surface runoff and intercept and convey the runoff to a lined channel.)			
1.	Flows Bypass Bench	Location shown on site map	N/A or okay
	Remarks _____		
2.	Bench Breached	Location shown on site map	N/A or okay
	Remarks _____		
3.	Bench Overtopped	Location shown on site map	N/A or okay
	Remarks _____		
C. Letdown Channels	Applicable	(N/A)	
(Channel lined with erosion control mats, riprap, grout bags, or gabions that descend down the steep side slope of the cover and will allow the runoff water collected by the benches to move off of the landfill cover without creating erosion gullies.)			
1.	Settlement	Location shown on site map	No evidence of settlement
	Areal extent _____	Depth _____	
	Remarks _____		
2.	Material Degradation	Location shown on site map	No evidence of degradation
	Material type _____	Areal extent _____	
	Remarks _____		
3.	Erosion	Location shown on site map	No evidence of erosion
	Areal extent _____	Depth _____	
	Remarks _____		

4.	Undercutting	Location shown on site map	No evidence of undercutting
	Areal extent _____	Depth _____	
	Remarks _____		
5.	Obstructions	Type _____	No obstructions
	Location shown on site map	Areal extent _____	
	Size _____		
	Remarks _____		
6.	Excessive Vegetative Growth	Type _____	
	No evidence of excessive growth		
	Vegetation in channels does not obstruct flow		
	Location shown on site map	Areal extent _____	
	Remarks _____		
D. Cover Penetrations			
	Applicable	N/A	
1.	Gas Vents	Active	Passive
	Properly secured/locked	Functioning	Routinely sampled
	Evidence of leakage at penetration		Good condition
	N/A		Needs Maintenance
	Remarks _____		
2.	Gas Monitoring Probes	Active	Passive
	Properly secured/locked	Functioning	Routinely sampled
	Evidence of leakage at penetration		Good condition
			Needs Maintenance
			N/A
	Remarks _____		
3.	Monitoring Wells (within surface area of landfill)	Active	Passive
	Properly secured/locked	Functioning	Routinely sampled
	Evidence of leakage at penetration		Good condition
			Needs Maintenance
			N/A
	Remarks _____		
4.	Leachate Extraction Wells	Active	Passive
	Properly secured/locked	Functioning	Routinely sampled
	Evidence of leakage at penetration		Good condition
			Needs Maintenance
			N/A
	Remarks _____		
5.	Settlement Monuments	Located	Routinely surveyed
			N/A
	Remarks _____		

E. Gas Collection and Treatment		Applicable	N/A
1.	Gas Treatment Facilities Flaring Good condition Remarks _____	Thermal destruction Needs Maintenance	Collection for reuse
2.	Gas Collection Wells, Manifolds and Piping Good condition Remarks _____	Needs Maintenance	
3.	Gas Monitoring Facilities (e.g., gas monitoring of adjacent homes or buildings) Good condition Remarks _____	Needs Maintenance	N/A
F. Cover Drainage Layer		Applicable	N/A
1.	Outlet Pipes Inspected Remarks _____	Functioning	N/A
2.	Outlet Rock Inspected Remarks _____	Functioning	N/A
G. Detention/Sedimentation Ponds		Applicable	N/A
1.	Siltation Areal extent _____ Depth _____ Siltation not evident Remarks _____		N/A
2.	Erosion Areal extent _____ Depth _____ Erosion not evident Remarks _____		
3.	Outlet Works Remarks _____	Functioning	N/A
4.	Dam Remarks _____	Functioning	N/A

H. Retaining Walls		Applicable	(N/A)
1.	Deformations	Location shown on site map	Deformation not evident
	Horizontal displacement _____	Vertical displacement _____	
	Rotational displacement _____		
	Remarks _____		

2.	Degradation	Location shown on site map	Degradation not evident
	Remarks _____		

I. Perimeter Ditches/Off-Site Discharge		Applicable	(N/A)
1.	Siltation	Location shown on site map	Siltation not evident
	Areal extent _____	Depth _____	
	Remarks _____		

2.	Vegetative Growth	Location shown on site map	(N/A)
	Vegetation does not impede flow		
	Areal extent _____	Type _____	
	Remarks _____		

3.	Erosion	Location shown on site map	Erosion not evident
	Areal extent _____	Depth _____	
	Remarks _____		

4.	Discharge Structure	Functioning	(N/A)
	Remarks _____		

VIII. VERTICAL BARRIER WALLS		Applicable	(N/A)
1.	Settlement	Location shown on site map	Settlement not evident
	Areal extent _____	Depth _____	
	Remarks _____		

2.	Performance Monitoring	Type of monitoring _____	
	Performance not monitored		
	Frequency _____	Evidence of breaching	
	Head differential _____		
	Remarks _____		

IX. GROUNDWATER/SURFACE WATER REMEDIES		Applicable	(N/A)
A. Groundwater Extraction Wells, Pumps, and Pipelines		Applicable	N/A
1.	Pumps, Wellhead Plumbing, and Electrical Good condition All required wells properly operating	Needs Maintenance	N/A
Remarks _____ _____			
2.	Extraction System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance		
Remarks _____ _____			
3.	Spare Parts and Equipment Readily available Good condition Requires upgrade	Needs to be provided	
Remarks _____ _____			
B. Surface Water Collection Structures, Pumps, and Pipelines		Applicable	(N/A)
1.	Collection Structures, Pumps, and Electrical Good condition Needs Maintenance		
Remarks _____ _____			
2.	Surface Water Collection System Pipelines, Valves, Valve Boxes, and Other Appurtenances Good condition Needs Maintenance		
Remarks _____ _____			
3.	Spare Parts and Equipment Readily available Good condition Requires upgrade	Needs to be provided	
Remarks _____ _____			

C. Treatment System		Applicable	N/A
1.	Treatment Train (Check components that apply) Metals removal Air stripping Filters Additive (e.g., chelation agent, flocculent) Others Good condition Sampling ports properly marked and functional Sampling/maintenance log displayed and up to date Equipment properly identified Quantity of groundwater treated annually Quantity of surface water treated annually Remarks	Oil/water separation Carbon adsorbers	Bioremediation
2.	Electrical Enclosures and Panels (properly rated and functional) N/A Remarks	Good condition	Needs Maintenance
3.	Tanks, Vaults, Storage Vessels N/A Remarks	Good condition	Proper secondary containment Needs Maintenance
4.	Discharge Structure and Appurtenances N/A Remarks	Good condition	Needs Maintenance
5.	Treatment Building(s) N/A Chemicals and equipment properly stored Remarks	Good condition (esp. roof and doorways)	Needs repair
6.	Monitoring Wells (pump and treatment remedy) Properly secured/locked All required wells located Remarks	Functioning Needs Maintenance	Routinely sampled Good condition N/A
D. Monitoring Data			
1.	Monitoring Data Is routinely submitted on time	Is of acceptable quality	
2.	Monitoring data suggests: Groundwater plume is effectively contained	Contaminant concentrations are declining	

D. Monitored Natural Attenuation				
1.	Monitoring Wells (natural attenuation remedy)			
	Properly secured/locked	Functioning	Routinely sampled	Good condition
	All required wells located	Needs Maintenance		N/A
Remarks _____				
X. OTHER REMEDIES				
If there are remedies applied at the site which are not covered above, attach an inspection sheet describing the physical nature and condition of any facility associated with the remedy. An example would be soil vapor extraction.				
XI. OVERALL OBSERVATIONS				
A. Implementation of the Remedy				
Describe issues and observations relating to whether the remedy is effective and functioning as designed. Begin with a brief statement of what the remedy is to accomplish (i.e., to contain contaminant plume, minimize infiltration and gas emission, etc.).				
<p>The building is to be demolished by the foundation & floor slab is to remain. The land use is industrial and will remain so in the Real Property Master Plan. The site is restricted. There may be storage of materials on the floor slab. The site is visually monitored by Installation Restoration Program personnel on an irregular basis.</p>				

B. Adequacy of O&M				
Describe issues and observations related to the implementation and scope of O&M procedures. In particular, discuss their relationship to the current and long-term protectiveness of the remedy.				
N/A				

C. Early Indicators of Potential Remedy Problems
Describe issues and observations such as unexpected changes in the cost or scope of O&M or a high frequency of unscheduled repairs, that suggest that the protectiveness of the remedy may be compromised in the future. <u>N/A</u> _____ _____ _____ _____ _____ _____ _____
D. Opportunities for Optimization
Describe possible opportunities for optimization in monitoring tasks or the operation of the remedy. <u>N/A</u> _____ _____ _____ _____ _____ _____ _____