Third Five-Year Review Report
for the
Pesses Chemical Company
Superfund Site
Fort Worth, Tarrant County, Texas

July 2009

PREPARED BY:

United States Environmental Protection Agency
Region 6
Dallas, Texas

THIRD FIVE-YEAR REVIEW

PESSES CHEMICAL COMPANY
SUPERFUND SITE
EPA ID# TXD980699656

Fort Worth, Tarrant County, Texas

This memorandum documents the United States Environmental Protection Agency's (EPA) performance, determinations, and approval of the Pesses Chemical Company Superfund Site Third Five-Year Review, provided in the attached Third Five-Year Review Report.

Summary of Five-Year Review Findings

The results of the Five Year Review indicate that the remedy, which included excavation, stabilization, placement in an on-site waste containment cell, and capping with concrete and a synthetic membrane liner, was constructed in accordance with the requirements of the Record of Decision (ROD) and the Explanation of Non-Significant Change. The remedy is functioning as designed. There is currently no known exposure to the stabilized and capped wastes. Therefore, the completed remedy is currently protective of human health and the environment in the short term, but additional measures are necessary for long term protection.

Actions Needed

Institutional controls in the form of either a Restrictive Covenant, or a Deed Notice, as appropriate, should be filed in the Deed Records of Tarrant County to restrict land use at the site. Semi-annual site inspections and maintenance should continue including making repairs to the cap and site fencing as necessary to correct any defects. Repairs necessary at the current time include mending/resealing the cracked concrete cap, removal of weeds from the expansion joints and fence, and drainage channel expansion joints. The trees and bushes should be removed from the fencing along the east and northern border of the Site. The fence should be extended around the brick warehouse to prevent unauthorized access to the Site through the doors on Main Street. Vandal proof locks should be installed on all gates to prevent unauthorized access by vehicle and the broken hinges should be replaced.

In addition to the above maintenance items, the main office building and the brick warehouse should be investigated for contaminants of concern. All creosote treated wood and containers containing potentially hazardous waste should be removed from the Site and properly disposed.

Determinations

The remedy at the Pesses Site currently protects human health and the environment because the contaminated soils have been stabilized and placed in a containment cell that is covered with a high

density polyethylene (HDPE) liner and a concrete cap. However, in order for the remedy to be protective in the long-term, full implementation of institutional controls should occur to ensure long-term protectiveness. The institutional controls would restrict land use at the Site, which would minimize potential exposure to contaminants and protect the integrity of the cap. In addition, the recommended investigation of the brick warehouse and main office building should occur to ensure all contamination was removed from the Site. Debris that could pose an environmental hazard should also be removed and properly disposed.

FOR 7-22-9

Samuel Coleman, P.E. Date
Director
Superfund Division
U.S. Environmental Protection Agency Region 6

CONCURRENCE
FIVE-YEAR REVIEW

Pesses Chemical Company Superfund Site
Fort Worth, Tarrant County, Texas

By: _____ Date: 7/16/09
Gary Miller
Remedial Project Manager

By: _____ Date: 7/16/09
Carlos Sanchez
Section Chief, Arkansas/Texas Section

By: _____ Date: 7/16/09
Don Williams
Deputy Associate Director, Remedial Branch

By: _____ Date: 7/16/09
Charles Faultry
Associate Director, Remedial Branch

for By: _____ Date: 07/22/09
James L. Turner
Senior Attorney, Office of Regional Counsel

By: _____ Date: 07/22/09
Mark Peycke,
Chief, Superfund Branch, Office of Regional Counsel

By: _____ FOR Date: 7-22-9
Pamela Phillips
Deputy Director, Superfund Division

PESSES CHEMICAL COMPANY SUPERFUND SITE
FIVE-YEAR REVIEW

EXECUTIVE SUMMARY

The third five year review for the Pesses Chemical Company in Fort Worth, Texas, was conducted from November 2008 to June 2009. Since contaminants remain on Site at levels that do not allow for unrestricted use, five year reviews are required to document whether or not the remedy remains protective of human health and the environment.

The remedy for the Pesses Chemical Company included stabilization and capping of contaminated soils and sediments on site. The site achieved construction completion with the signing of the EPA Final Close-Out Report on September 30, 1993. The trigger for this five-year review was the signing of the second Five-Year review on July 21, 2005.

The completion of the current five-year review confirms that the remedy implemented at the Pesses Site remains protective of human health and the environment. The remedy included excavation of contaminated soil, stabilization with cement kiln dust, and placement in a waste containment cell that was capped with a synthetic membrane and concrete. The excavated areas were backfilled with clean soil. Construction activities were completed in 1992 and the Pesses Site was deleted from the National Priorities List (NPL) in 1995.

The remedy selected for the Pesses Site in the 1988 Record of Decision (ROD) was modified by a 1990 Explanation of Non-Significant Change, and an Explanation of Significant Differences (ESD) issued in 2007.

The assessment of this five-year review found that the remedy was constructed in accordance with the requirements of the ROD and the Explanation of Non-Significant Change, which documented the change of the cap material from clay to concrete.

The second five-year review determined that institutional controls, which could include a Restrictive Covenant or Deed Notice, recorded in the county deed records, should be instituted as a component to the overall remedy to restrict land use at the Site. An ESD for the ROD issued on May 14, 2007, included such institutional controls to be effected by TCEQ pursuant to State law as a component of the overall remedy to restrict land use at the Site. For example, a Restrictive Covenant instrument filed in the county deed records would prohibit certain specified activities that cause or could cause damage to the remedy or engineering controls, or a release of contamination. In the event that a Restrictive Covenant could not be obtained according to the provisions of the Texas Administrative Code 30 TAC §350.11, then the TCEQ would issue and then properly record a Deed Notice in the deed records for Tarrant County. In sum, the remedy is generally functioning as designed. In coordination with the EPA, TCEQ is preparing either a Restrictive Covenant or a Deed Notice to be recorded in accordance with the EPA

CERCLA ESD and the Texas Risk Reduction Program to help ensure that the remedy continues to function effectively.

The threats to human health and the environment at the site have been addressed and the containment remedy remains protective. There are no current complete exposure pathways. The remedial actions have achieved the remedial action objectives (RAOs) for metal concentrations in soils.

The remedy at the Pesses Site currently protects human health and the environment because the contaminated soils have been stabilized and placed in a containment cell that is covered with a high density polyethylene (HDPE) liner and a concrete cap. However, in order for the remedy to be protective in the long-term, full implementation of institutional controls should occur to ensure long-term protectiveness. In addition, the recommended investigation of the brick warehouse and main office building should occur to ensure all contamination was removed from the Site. Debris that could pose an environmental hazard should also be removed and properly disposed.

Semi-annual site inspections and maintenance should continue including repairs to concrete containment cap and site fencing as necessary. Repairs necessary at the current time include mending/resealing the cracked concrete cap, removal of weeds from the expansion joints and fence, and drainage channel expansion joints. The trees and bushes should be removed from the fencing along the east and northern border of the Site. The fence should be extended around the brick warehouse to prevent unauthorized access to the Site through the doors on Main Street. Vandal proof locks should be installed on all gates to prevent unauthorized access by vehicle.

In addition to the above maintenance items, the main office building and the brick warehouse should be investigated for contaminants of concern. All creosote treated wood and containers containing potentially hazardous waste should be removed from the Site and properly disposed.

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
Hairline cracks and minimal degradation of the concrete	Mending cracks in concrete. Resealing the cracked concrete cap	TCEQ	TCEQ/EPA	Semi-annually Every 3 years	N	Y

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
Weeds growing in cracks/joints and along drainage channel.	Removal of weeds from the expansion joints and fence, and drainage channel.	TCEQ	TCEQ/EPA	Semi-annually	N	Y
Maintain containment cap integrity and effectiveness	1. Continue semi-annual site inspections. 2. Continue to perform site maintenance activities	TCEQ	TCEQ/EPA	Semi-annually	N	Y
Restrictive Covenant has not been filed in the county deed records nor has a Deed Notice been filed.	File a Restrictive Covenant, or a Deed Notice, as required, in the Deed Records of Tarrant County.	TCEQ	TCEQ/EPA	September 2010	N	Y
Trees and bushes growing into perimeter fence.	The trees and bushes growing into the fence should be removed	TCEQ	TCEQ/EPA	September 2010	N	Y
Evidence of unauthorized access to the site for storage, dumping, and housing of vagrants.	1. Extend fence along face of brick warehouse to restrict access through doors and windows. 2. Lock building doors 3. Vandal proof locks should be installed on all gates.	TCEQ	TCEQ/EPA	September 2010	Y	Y

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
Large portable storage container found on-site.	1. Locate responsible party. 2. Have storage container removed.	TCEQ	TCEQ/EPA	September 2010	N	N
Possible contamination of the main office and brick warehouse	1. Sample inside of buildings for COCs 2. Remediate as necessary	TCEQ/EPA	TCEQ/EPA	September 2011	N	Y
Possible creosote contamination in brick buildings (floors, beams, and ceiling)	1. Determine if wood timbers/bricks are treated 2. Remediate as necessary	TCEQ/EPA	TCEQ/EPA	September 2011	N	Y
Electronic waste left in place by a previous tenant.	1. Remove and dispose of waste 2. Sample for contamination 3. Remediate as necessary	TCEQ	TCEQ/EPA	September 2011	N	Y
Gate hinge is broken	Replace gate hinge	TCEQ	TCEQ/EPA	September 2010	Y	Y

FIVE YEAR REVIEW SUMMARY FORM

SITE IDENTIFICATION

Site name ***(from WasteLAN)***: Pesses Chemical Company

EPA ID ***(from WasteLAN)***: TXD980699656

Region: 6	**State:** TX	**City/County:** Fort Worth / Tarrant County

SITE STATUS

NPL status: ☐ Final ☒ Deleted ☐ Other (specify)

Remediation status (choose all that apply): ☐ Under Construction ☐ Operating ☒ Complete

Multiple OUs?* ☐ YES ☒ NO	**Construction completion date:** 9 / 30 / 1993

Has site been put into reuse? ☐ YES ☒ NO

REVIEW STATUS

Lead agency: ☒ EPA ☐ State ☐ Tribe ☐ Other Federal Agency _____

Author name: EPA Region 6, with support from USACE Tulsa District and TCEQ

Review period:** November 2008 to June 2009

Date(s) of site inspection: December 2, 2008

Type of review:

☐ Policy
☒ 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 On-site Construction ☐ Actual RA Start
☐ Construction Completion ☒ Previous Five-Year Review Report
☐ Other (specify) ROD submittal that sets MNA as remedial alternative

Triggering action date ***(from WasteLAN)***: July 21, 2005

Due date ***(five years after triggering action date)***: July 21, 2010 (Note: the site inspection (done on 12/2/2008) and five-year review were done early to balance the five-year review workload between 2009 and 2010 because multiple five-year reviews are due in 2010. The next five-year review for the Pesses site will be due in 2014, or five years after the current review is completed.

Five-Year Review Summary Form (cont'd.)

Issues:

A Restrictive Covenant has not been filed in the county deed records nor has a Deed Notice been filed. Hairline cracks and minimal degradation of the concrete containment cap including weed growth in the cracks were observed. Weeds are growing in the concrete cracks/joints and along drainage channel and small trees are growing along the chain link fence. Unauthorized access is being gained to the northern portion of the Site. The portable storage container now located on the north end of the Site and piles of debris, electronics, drums, and trash is evidence of this unauthorized use. It is possible that the Site could be contaminated by unauthorized storage and dumping activities.

The main office building and brick warehouse were not sampled for COCs or cleaned of contamination during the Remedial Investigation. In addition, the buildings appear to be partially constructed of creosote treated wood. Broken computer equipment has been stored in these buildings for numerous years, possibly contributing to any existing contamination.

Recommendations and Follow-up Actions:

Either a Restrictive Covenant or Deed Notice, as appropriate, should be filed by TCEQ in the Deed Records of Tarrant County to restrict land use at the site. Semi-annual site inspections and maintenance should continue including making repairs to the cap and site fencing as necessary to correct any defects. Repairs necessary at the current time include mending/resealing the cracked concrete cap, removal of weeds from the expansion joints and fence, and drainage channel expansion joints. The trees and bushes should be removed from the fencing along the east and northern border of the Site. The fence should be extended around the brick warehouse to prevent unauthorized access to the Site through the doors on Main Street. Vandal proof locks should be installed on all gates to prevent unauthorized access by vehicle and the broken hinges should be replaced.

In addition to the above maintenance items, the main office building and the brick warehouse should be investigated for contaminants of concern. All creosote treated wood and containers containing potentially hazardous waste should be removed from the Site and properly disposed.

Protectiveness Statement(s):

The remedy at the Pesses Chemical Company is currently protective of human health and the environment, and exposure pathways that could result in unacceptable risks are being controlled. The contaminated soils have been stabilized and placed in a containment cell that is covered with a HDPE liner and a concrete cap. However, in order for the remedy to maintain long-term protectiveness, full implementation of institutional controls should occur. In addition, the recommended investigation of the brick warehouse and main office building, along with any required follow-up actions, should be performed to ensure all contamination was removed from the Site. All materials and debris that could pose an environmental hazard should be removed.

TABLE OF CONTENTS

APPENDICES

LIST OF ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
ESD	Explanation of Significant Differences
EPA	United States Environmental Protection Agency
FS	Feasibility Study
HDPE	High Density Polyethylene
IC	Institutional Controls
ICP	Institutional Controls Plan
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NPL	National Priorities List
O&M	Operation and Maintenance
OSWER	Office of Solid Waste and Emergency Response
PRP	Potentially Responsible Party
RAO	Remedial Action Objective
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RI	Remedial Investigation
ROD	Record of Decision
TBC	To-Be-Considered Requirements
TCEQ	Texas Commission on Environmental Quality
TWC	Texas Water Commission

PESSES CHEMICAL COMPANY SUPERFUND SITE
FIVE-YEAR REVIEW

I. INTRODUCTION

1. Authority

The purpose of a five-year review is to determine whether the remedy at a site is protective of human health and the environment. The methods, findings, and conclusions of a review are documented in the five-year review report. In addition, the five-year review report identifies deficiencies found during the review and presents recommendations to address them. This review is required by statute. EPA must implement five-year reviews consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). CERCLA § 121(c), as amended, states:

> *If the President selects a remedial action that results in any hazardous substances, pollutants, or contaminants remaining at the site, the President shall review such remedial action no less often than each five years after the initiation of such remedial action to assure that human health and the environment are being protected by the remedial action being implemented.*

The NCP Part 300.430(f)(4)(ii) of the Code of Federal Regulations (CFR) states:

> *If a remedial action is selected that results in hazardous substances, pollutants, or contaminants remaining at the site above levels that allow for unlimited use and unrestricted exposure, the lead agency shall review such action no less often than every five years after the initiation of the selected remedial action.*

The U.S. Environmental Protection Agency (EPA) has conducted the third five-year review of the remedial actions implemented at the Pesses Chemical Company Superfund Site in Fort Worth, Tarrant County, Texas. This report documents the results of the review conducted in 2009.

This is the third five-year review for the Pesses Site. The triggering action for this review is the completion of the second five-year review, which was issued on July 21, 2005. Due to the fact that hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unrestricted use and unlimited exposure, another five-year review is required. This review will become part of the site file at Region 6 EPA offices in Dallas, Texas, and the Texas Commission on Environmental Quality (TCEQ) offices in Austin, Texas.

II. SITE CHRONOLOGY

TABLE 1
Chronology of Site Events

EVENT	DATE
Operation of the Pesses Chemical Co. Facility	1978 to January 1981
Pesses Parent Company Filed for Bankruptcy	January 1981
Grass Fire resulting in release of cadmium oxide fumes	1983
EPA Performed Removal Action	April 1983
South Field Used as a Storage Facility by a Tenant Through the Bankruptcy Court	June 1985 to November 1985
Pesses Added to the National Priorities List	June 10,1986
Remedial Investigation Performed	December 1987 to October 1988
Installed Fence and Placed Asphalt Cap Over Soil in the Northern Part of Site	August 1988
Remedial Investigation Report Completed	October 1988
Feasibility Study Report Completed	October 1988
Record of Decision Issued for Site	December 22, 1988
Explanation of Non-Significant Change in the Planned Remedial Action	June 8, 1990
Remedial Action	February 3 to September 15, 1992
Construction Final Inspection conducted.	September 15, 1992
Final Close Out Report Issued	September 30, 1993
Site Deleted From NPL	September 28, 1995
Consent Decree for Response Costs Payment	July 12, 1996
First Five Year Review	July 21, 2000
Second Five Year Review	July 21, 2005
Cap Evaluation Report	February 5, 2007
Explanation of Significant Differences for the Record of Decision	May 2007
Concrete Cap Repair Construction Summary and Semi Annual Maintenance Inspection Report	December 3, 2007
Release of Statutory Federal Lien	February 6 2008

III. BACKGROUND

1. Site Physical Characteristics and Land Use

The Pesses Chemical Company Superfund Site is located at 2301 South Main Street in Fort Worth in Tarrant County, Texas. The Site is triangular in shape and approximately 4.2 acres in size about two miles south of downtown Fort Worth and one-half mile west of Interstate 35W. An office building and brick warehouse within the fenced portion of the Site are currently unoccupied. The former operations area consists of a metal warehouse that originally contained various pieces of equipment, a baghouse, two

underground sumps, and a storage yard with a concrete pad. The metal warehouse currently only contains trash and debris, and the brick warehouse contains discarded computer and other electrical equipment. The Pesses Site is bordered on the north by the Cenikor Drug Rehabilitation Foundation, on the east and much of the south by an active railway switching yard, and on the west by South Main Street. The Site is situated in a light industrial and commercial area. Morningside Drive borders the southern tip of the site. Residential areas are located approximately one half mile to the northeast and three-fourths mile southwest of the Site.

The Site surface is fairly flat, although the land does slope slightly in certain areas. The adjacent railroad tracks are elevated above the Site to form a drainage ditch area along the east boundary of the Site. The area north of the Pesses warehouse generally drains east to this ditch and then northward toward a storm sewer located on the east side of the Cenikor property. Drainage south of the Pesses warehouse is toward storm sewers located along South Main Street. The Pesses Site is situated within the drainage basin of Sycamore Creek, which is a tributary to the West Fork of the Trinity River. Sycamore Creek has its headwaters in rural areas southwest of downtown and flows northeasterly via an open channel through urbanized areas to the south and east of downtown Ft. Worth. The creek is approximately 1.1 miles southeast of the Site. Pesses is not located in the 100-year flood plain of Sycamore Creek-Trinity River.

2. History of Contamination

The Pesses Company of Solon, Ohio [METCOA] purchased the property in Fort Worth, Texas, in December 1978. Operations to reclaim cadmium and nickel from dry-cell batteries and metal sludge began in mid-June of 1979. The facility included four furnaces fired by natural gas. The furnaces were heated to separate cadmium from the mixture in the form of cadmium oxide gas. The cadmium oxide gas was condensed into a liquid in condensers and then poured into molds. The molds were transferred off-site to Pesses' ball furnace operation where they were re-melted and re-cast into 1.25 pound cadmium balls for shipment to various plating operations. Furnace emissions were composed of numerous metal oxides and other particulates. These furnace emissions were conveyed to a cyclone separator and then to a baghouse filter before discharging to the atmosphere. Nickel and iron scrap and slag were collected in 55 gallon drums for shipment to the Pesses Company reclamation plant in Pennsylvania.

Complaints from nearby residents led to an inspection of the Site by the Fort Worth Air Pollution Control office in mid-1979. This inspection and others revealed numerous problems with the plant operations. It was also determined that the Pesses Company did not obtain the construction or operation permits required by the State prior to operations. Pesses ceased operations to obtain the proper permits. Once operations were again underway, in February 1980, cadmium emissions were measured as high as 2900 percent of the 0.01 pound per hour permit limits. In January 1981, the parent company in Ohio claimed bankruptcy and operations at the Fort Worth plant were discontinued.

In March 1983, a grass fire at the Site resulted in the release of toxic cadmium oxide fumes, which hospitalized a firefighter. At that time approximately 1500 deteriorating drums remained onsite with heavy metal sludge, powder, and empty battery cases. Since the Pesses Company lacked the funds necessary for site cleanup, the EPA Emergency Response Team removed about 3,400 cubic yards of soil, drummed material, and debris from the Site in April 1983. A clay cap was placed in the south storage yard to prevent exposure to contaminated soils remaining on-site.

In April 1984, particulate air sampling revealed 0.014 - 0.048 parts per billion cadmium at the Site boundary.

The Pesses Site was proposed for inclusion on the CERCLA National Priorities List (NPL) on October 15, 1984, (49 Fed. Reg. 40320) with a score of 28.86, due mainly to the potential for migration of heavy metals via airborne dust and surface water runoff from the Site. The Site was placed on the NPL on June 10, 1986, (51 Fed. Reg. 21054).

From June 1985 through November 1985, the south storage yard was occupied by a tenant through the bankruptcy court. The tenant had placed several trailers on the cap and truck grooves on the cap indicated that the clay layer had been damaged. The EPA Technical Assistance Team repaired damage to the cap and re-secured the Site in November 1985.

The EPA designated the Texas Water Commission (TWC), predecessor to the TCEQ, as the lead agency for remedial activities for the Site. The Remedial Investigation (RI) was initiated in November 1987 and completed February 1988. The RI found that the metal warehouse and baghouse contained gray, powdery dust materials. It was estimated that 95% of the warehouse building floor space was covered with less than 1/8 inch of dust and 5% was covered by an inch of dust. The dust samples showed extremely high levels of cadmium (4% to 45%) and relatively high levels of nickel (0.7% to 2.3 %).

Soil samples collected during the RI were obtained from within the Pesses Site and in several adjacent off-site areas. South of the metal warehouse where the clay cap was located, soil samples contained cadmium levels as high as 2,400 mg/kg and nickel as high as 4,800 mg/kg. Soils on-site contained elevated metal concentrations to an average depth of one foot. A limited area of contamination extended to a depth of ten feet.

Two sumps located in the south storage yard contained 1,914 gallons of liquid and 16.6 cubic yards of sludge. The liquids contained less than one mg/l of metals. The sludge contained 750 mg/kg of cadmium and 1,100 mg/kg of nickel.

No organic contaminants were found at concentrations which posed health or environmental impacts, and no asbestos was detected.

During the RI, the northern portion of the Site was leased out by the bankruptcy trustee. The tenant had no access to the southern portion of the Site. Sampling results of the RI revealed high levels of cadmium and lead in soils on the northern portion of the Site between the north brick warehouse and office building. Since this area was used frequently by heavy machinery, the tenant agreed to place a 5-inch asphalt cap and a 6-foot chain link fence across this area to reduce potential health risk to employees. The action was overseen by EPA personnel in August 1988. The tenant is no longer on-site. The RI also determined that limited off-site areas of shallow soils contained cadmium as a result of cadmium oxide emissions during active site operations, drainage from the Site to the Cenikor Foundation, and tracking from the south storage yard in 1985 when the clay cap was disturbed by active use of the area with heavy machinery. Soil samples collected in the neighborhood east of the Pesses Site did not contain any metals concentrations above background levels.

Ground water occurs at a depth of 380 feet below the ground surface. Because the ground water is below low permeability clay, shale and shaley limestone, and the maximum depth of site contaminants is less than a depth of 13 feet, the EPA has determined that the ground water was not and will not, in the future, be affected by contamination at the Site.

3. Initial Response

As mentioned previously, during the time period between April 17 and April 29, 1983, an EPA removal action was conducted and the Site was secured. The removal action consisted of removal of 3,392 cubic yards of contaminated soil, metal sludge, drummed material, and debris from the Site. A two to six inch interim clay cover was installed over the process area. From two to six inches of topsoil were removed from inside the fenced area. Also, one inch of topsoil was removed from the south field where piles of slag were found and the surface soils along the roadside, railroad tracks and behind the warehouse were scraped. The wastes were shipped to Chemical Waste Management in Port Arthur, Texas.

4. Basis for Taking Action

Although the imminent health threat had been alleviated by the Emergency Removal Action in 1983, soil with high metal concentrations remained on site. The main contaminants of concern at the Pesses Site are cadmium and nickel. The building and miscellaneous equipment were left unaddressed and some drums of debris remained on-site. The RI determined that the residual contamination of cadmium and nickel present in the soils (to a depth of two to three feet over much of the Site), in the metal warehouse, and in process equipment posed human health and environmental risks requiring remediation.

Although none of the contaminants of concern are cancer-causing from direct contact or ingestion, adverse health effects could still occur from the levels of metals present on-site if remediation actions had not been taken. An individual contacting the metal contaminants present at the Site might develop kidney or nervous system problems with continued exposure. Further, cadmium and nickel are carcinogens via inhalation. Therefore, in addition to incidental ingestion of contaminants through hand to mouth interactions, cancer risks would increase through inhalation of metal particles should the Site remain unremediated.

Prior to remediation, trespassers on-site had a two-in-one-thousand chance of developing cancer over an expected 70 year lifetime due to exposure to the maximum concentrations of both cadmium and nickel identified on-site. Individuals working on the Site and exposed to contaminants for longer and more frequent periods of exposure, might have a two-in-one-hundred chance of developing cancer.

IV. REMEDIAL ACTIONS

1. Remedial Action Objectives

EPA established Remedial Action Objectives (RAO) for the Site to be 15 mg/kg for cadmium and 100 mg/kg for nickel in the soil. These RAOS were determined from the worst case exposure scenario

provided in the baseline risk assessment and from comparison with background sample values of metals in the vicinity of the Site. The cadmium and nickel RAO concentrations ensure that a carcinogenic risk from the Site would not exceed a one in one million risk. Since areas which contain elevated cadmium and nickel concentrations correspond with areas of elevated lead and copper, lead and copper concentrations detected on-site would not present a health or environmental impact once cadmium and nickel contaminated soils were addressed.

2. Remedy Selection

The EPA Regional Administrator signed the ROD for remedial action for the Site on December 22, 1988, selecting stabilization of the contaminated soils and site contaminants, and capping as the remedy. The EPA selected this remedy because it removed the principal threat posed by the site conditions by eliminating the possibility of human exposure with the metal contaminants of concern and by preventing the spread of contaminants.

Soil was treated in place to immobilize the heavy metal particulates. Waste and off-site soil were consolidated on-site prior to treatment and included in the process. Soil which was above the target action level at depths greater than two feet was excavated, as called for in the ROD, and included in the treatment process. A concrete cap was placed within the fenced area around the metal warehouse and office building, and a clay cap was to be placed in the south field area. The concrete cap was used for its durability and reliability since continued light industrial use of the area around the buildings was anticipated. The clay cap was to be constructed in accordance with minimum technology requirements under the Resource Conservation and Recovery Act (RCRA). RCRA requirements for clean closure and capping were not applicable to this site because the waste is not RCRA regulated. However, the capping standards of 40 Code of Federal Regulations (CFR) 264.228(a) and (b) were considered relevant and appropriate for application to the south field cap construction and were recommended for implementation (EPA, 1990).

A large rototiller was used to inject and mix a stabilizing agent into the contaminated soils. Water was used to compact and set the soils into a hardened mass in place. Treatability studies were performed, which showed adequate results for both cement and asphalt stabilization of the soil at the Pesses Site.

The remedial action also included cleaning the metal building and leaving it in place. Drums and other contaminated debris were disposed off-site. Equipment that could not be adequately cleaned and left in place was also disposed off-site. Finally, the sumps were cleaned and sealed in place.

A non-significant change in the planned remedial action was made on June 8, 1990. As described above, the original remedy specified in the ROD included a clay cap in the south field. However, during the Remedial Design, it was discovered that the south field was too narrow to construct the cap over the waste material while maintaining a cap surface slope necessary for proper drainage and to minimize erosion. As a result, instead of placing a clay cap in this area, the concrete cap specified for the operating area was extended to include the south field. This design change had no adverse impact on either the scope or performance of the selected remedial alternative, and caused only a negligible increase in overall site remedial cost. It was also consistent with the RCRA Subtitle C site Applicable or Relevant and Appropriate Requirements (ARARs). Therefore, the design change was

deemed to be "insignificant" from a regulatory procedural standpoint and no modification was deemed necessary for the ROD.

An Explanation of Significant Differences (ESD) for the ROD was issued by EPA on May 14, 2007, to include institutional controls (IC), enforceable by TCEQ, as a component of the overall remedy as recommended as an action item in the Second Five-Year review. All other components of the original selected remedy remain unchanged. The IC would restrict land use at the Site, which would minimize potential exposure to contaminants and protect the integrity of the cap. This action significantly alters the selected remedy; however, it does not fundamentally alter the overall clean-up approach at the Site (EPA, 2007). The ESD requires that a Restrictive Covenant document be filed by the TCEQ in the Tarrant County deed records for the Pesses Site in accordance with the Texas Risk Reduction Program as set forth in the Texas Administrative Code, 30 TAC §§350.4(a)(47) and 350.11. This would inform prospective purchasers, grantees, and the public of site conditions and restrictions, as well as restricting the development and uses of the property by owners and operators. With a Restrictive Covenant in place, those activities that cause or could cause damage to the remedy or the engineering controls or a release of contamination are prohibited. Since a Restrictive Covenant requires a property owner's consent under the TAC, the TCEQ must attempt to obtain consent prior to executing and recording the Restrictive Covenant. If the TCEQ is unable to obtain owner consent, or locate an owner, then the TCEQ will instead file a Deed Notice in the Deed Records of Tarrant County in accordance with the TAC in order to notify the public of contamination on the Site.

The expected outcome of the IC is to ensure that the information in the deed records for the Pesses Site property reflects the current Site status and identifies the use of the Site property that are prohibited, as follows:

- No removal or modification of the cap in the southern capped area;
- No removal or modification of the concrete pavement or building foundations without prior approval from TCEQ;
- No activities that will cause erosion or disrupt the integrity of the cap or paved areas;
- No wells of any kind without prior approval from TCEQ; and
- No uses for any purposes other than commercial/industrial use.

This will put all future prospective purchasers and other transferees on notice of prohibited uses, thus helping to ensure that the CERCLA remedy in place at the Site continues to remain undisturbed, functional, and protective.

3. Remedy Implementation

The former Pesses Site operations area consisted of a metal warehouse with various pieces of equipment, several smelters, a baghouse, two underground sumps, and a south storage yard with a concrete pad and two sumps. The remedial action contractor removed the refractory inside the smelters and also the two sumps in the ground. These materials, and the dust and dust bags from the baghouse with the contaminated soil were consolidated in the south field. The metal warehouse building, drums, and metal process equipment were decontaminated by high pressure water washing. Mobilization to begin the remedial action began on February 3, 1992. Site security was provided by maintaining a temporary fence around all site activities and providing a 24-hour guard service. A

silt/sediment fence was installed on the down-gradient side of the Site as part of the environmental controls during remediation activities. Air sampling devices were set up at several points around the Site when remediation activities began. Air sampling ran continuously while contaminated soil was being disturbed.

The metal warehouse is a steel frame building with aluminum siding. The entire interior of this building was decontaminated with a high pressure spray washer. This washer was placed on a scissor lift so that the upper areas of the building could be reached. The baghouse dust collector was sand blasted to clean rusted areas, and the interior of the cyclone baghouse and dust collectors were also pressure washed as a part of the building decontamination. Confirmatory wipe samples were taken until the building was sufficiently free of cadmium dust. Samples of the final rinse water were analyzed to insure that any remaining residue did not represent a health hazard.

On-site soil with contamination extending no further than one-foot below grade was stabilized in-situ using cement kiln dust. There were six on-site soil contamination areas that were above the RAOs. These areas were excavated between 2 ½ feet and 8 feet using a track hoe and transferred to the southern part of the site for stabilization. When the specified depth for each area was reached, composite confirmation samples were collected along the bottom and sides of the excavation. If the samples exceeded the RAOs, then additional excavation continued until new confirmation samples were below the RAOs. The excavation was then backfilled with clean fill imported from off-site sources. A total of 10,553 cubic yards of on-site contaminated soil was excavated and stabilized.

Areas of soil contaminated above the RAOs outside of the Pesses property lines were removed, hauled on-site, and stabilized for placement in the south field under the cap system. There were three areas on the west side of South Main Street and three areas immediately adjacent to the Site on the east side of South Main Street. At each location, the soil was excavated either by using a backhoe, or by workers with shovels to a depth of one foot below grade. Each of the excavation areas were backfilled with clean fill and those areas that were private property were sodded. A total of 1,806 cubic yards of off-site contaminated soil were removed.

All soil with metals levels greater than the RAOs was stabilized with cement kiln dust to prevent leaching of the metals from the soil. The stabilized soil mixture contained 10% kiln dust and 90% contaminated soil. The soil was first spread out and rock and rubble were removed by hand labor. Stabilization was performed by spreading the cement kiln dust on top of the contaminated soil and using a mechanical soil mixer capable of mixing up to an 18 inch layer of soil in one pass. A truck was then used to distribute water for hydration of the cement. Twelve inches of soil were stabilized in each lift. Equilibrium Partitioning Toxicity Tests verified that the Site contaminants did not leach out of the stabilized soil.

After successful stabilization of the contaminated soil and placement in the south field, a layer of clean fill was placed over the waste material to prevent sharp objects from puncturing the liner and to create the final slope of the top of the cap. A textured high density polyethylene (HDPE) liner with a thickness of 80-mil was then installed over the stabilized waste and soil in the south field. All liner seams were sealed and tested in accordance with the manufacturer's specifications. Then the eight-inch thick, double reinforced steel concrete cap was placed over the HDPE liner. The surface of the concrete was treated with a water proofing treatment. Expansion joints, consisting of one-inch thick closed cell neoprene foam topped with a joint sealer, were placed at the crest of the cap and every 80 feet perpendicular to the crest.

The rest of the Site outside of the capped south field was also paved with eight inch thick double reinforced concrete, but without the underlying HDPE liner. Warning signs were placed around the stabilized and capped waste area. A six foot high chain link fence and one gate with a padlock were installed around the stabilized and capped area. Additionally, the remainder of the Site was fenced with a six foot high chain link fence and two gates with padlocks. The fences were topped with three strands of barbed wire that extended the fence height to seven feet.

Other than the material required for laboratory analysis, all contaminated material remained on the Site and is contained within the capped and fenced area. To reduce the quantity of buried material and to recycle steel, the scrap steel was decontaminated with high pressure hot water, removed from the Site by Texas Industrial Scrap Iron & Metal Company and by Hutchinson Commercial Metal Company, and sent to their steel recycling facilities. The potentially contaminated wash water and decontamination water were used in the contaminated soil compaction and stabilization activities. Daily industrial hygiene air monitoring samples were collected and analyzed for site contaminants and particulates by EPTECH Environmental Technologies during the remedial activities. No contaminant levels specified in the ROD or ARARs were exceeded.

On September 15, 1992, the Construction Final Inspection was conducted. The inspection team determined that the remedial action had been successfully completed. In November 1992, the Final Remedial Action Report detailed the remedial activities and documented the successful completion of all construction activities. On September 30, 1993, the Acting Regional Administrator signed the EPA Final Close-Out Report. The Pesses Site was deleted from the NPL on September 28, 1995 (60 Fed. Reg. 50114).

4. System Operation and Maintenance

Success and long-term effectiveness of the remedy is dependant upon the contaminants not leaching out of the stabilized soil and upon the concrete cap and HDPE liner not failing. Therefore, TCEQ semi-annual inspections include a site visit to determine that none of the stabilized contaminated soil has become exposed or accessible for contact by humans or animals. Finally, the Site fence is inspected and repaired as needed to restrict access to the Site. Semi-annual visual inspections of the Site were performed every year since the last five-year review. The cost of the maintenance of the cap and surrounding structures for this time period was approximately $100,000.

V. PROGRESS SINCE THE LAST FIVE YEAR REVIEW

This is the third five-year review for the Pesses Site. The second five-year review was completed and signed on July 21, 2005. The first five-year review concluded the remedy was protective of human health and the environment. The second five-year review concluded the remedy was protective of human health and the environment, and several minor recommendations were made. These recommendations included continuation of the semi-annual inspections and maintenance of the fence and concrete cap by the TCEQ. The TCEQ inspection reports since the last five-year review are contained in Appendix B.

During the semi-annual inspections of the containment cap, normal degradation of concrete was observed as hairline cracks and spalling. The sealant along the joints had also deteriorated. Vegetation had overgrown along the perimeter ditch and debris had accumulated in the storm water inlet at the south end of the perimeter ditch. The storm water manhole cover at the inlet was broken.

Repair of the concrete cracks and spalling observed during the 2007 semi-annual inspection was completed in December 2007 and the sealant along the joints was replaced. The entire cap was waterproofed with two coats of Weather-guard Siloxane Penetrating Water Repellent. All the overgrown vegetation was removed along the fence and perimeter ditch and the storm water inlet was cleaned and the manhole cover replaced.

The second five-year review also recommended institutional controls, which included deed recordation as a component to the overall remedy to restrict land use at the Site. TCEQ is preparing institutional controls in the form of a Restrictive Covenant or a Deed Notice, as appropriate, in accordance with the Texas Risk Reduction Program.

VI. FIVE-YEAR REVIEW PROCESS

EPA performed the five-year review with the assistance of TCEQ. The EPA Remedial Project Manager is Gary Miller. The TCEQ Project Manager is Alan Henderson. This five-year review was conducted in accordance with EPA's "Comprehensive Five-Year Review Guidance" (OSWER No. 9355.7-03B-P). Where wastes remain in place at a Superfund site that prevent unrestricted use of the site, CERCLA requires a review of the site remedy every five years, 42 U.S.C. §9621(c). The purpose of a five-year review is to determine whether the remedy implemented at the Site is protective of human health and the environment. It is an evaluation of the implementation and performance of the selected remedy. The five-year review also documents any deficiencies identified during the review and recommends specific actions to ensure that a remedy is protective.

The five-year review for this site was initiated by the EPA, which tasked the U.S. Army Corps of Engineers to perform the technical components of the multidisciplinary review. The second five-year review, dated July 21, 2005, triggered this third five-year review.

The five-year review for the Pesses Site consisted of a review of relevant documents (Appendix A) and a five-year review site inspection. The report summary of the five-year site inspection is included as Appendix C. Photographs from the site visit are included as Appendix E. Copies of reports documenting previous site inspections conducted since the last five-year review in July 2005 can be found in Appendix D.

1. Community Involvement

A notice regarding the forthcoming review was placed in the local newspaper on December 3, 2008 (Appendix B). Notice of the completion of the five-year review will be placed in the local newspaper, and the completed report will be available in the information repository in the TCEQ office in Austin, Texas.

No interviews of Potentially Responsible Parties (PRPs) were conducted as part of this five-year review. The PRPs for the Site paid 100% of the response costs in 1996 pursuant to a Consent Decree settling a cost recovery civil action and filed in United States District Court. The PRPs are not involved with site maintenance. A Notice of Release of Statutory Lien was filed by the EPA with the County Clerk in the deed records of Tarrant County, Texas on February 6, 2008. TCEQ is performing the site maintenance and inspection activities now. Alan Henderson, the TCEQ Project Manager was interviewed during the Site inspection on December 2, 2008, as was Gary Miller of EPA Region 6. It was noted that a vagrant had been living in the main office, but had since vacated the property. In addition, the metal siding from the warehouse had been removed by trespassers, most likely for recycling purposes. Future plans, which include possible sale of the Site for light industrial use were discussed. The property is currently owned by a trustee of the bankruptcy court, which cannot be located. The city of Ft Worth may eventually foreclose on the property. Former tenants of the northern portion of the site, owners of the now defunct "American Computer Recycling", cannot be located, and therefore could not be interviewed.

VII. FIVE YEAR REVIEW FINDINGS

1. Site Inspection

The five-year review Pesses Site inspection was conducted on December 2, 2008. The five-year inspection evaluated the integrity of the waste containment cell cap and site fencing, and looked for any evidence of seepage or erosion. The Site inspection also included assessment of the northern portion of the Site where the main office building and brick warehouse are located. The Site inspection was conducted by Alan Henderson, TCEQ Project Manager; Gary Miller, EPA Remedial Project Manager; Jeanne Carroll, USACE Technical Manager; and David Jones, USACE.

A summary of the five-year review site inspection findings is presented below. A copy of the December 2, 2008, Site Inspection Report is attached as Appendix C.

During the inspection, the containment cell concrete cap and expansion joints were found to be in good condition overall. Small cracks were observed in a few areas along the cap with some deterioration along the edge of the concrete at the base of the fence line. Vegetation was observed growing in isolated areas of the cap in the small cracks along the seams and expansions joints. The fence line was clear of vegetation around the containment cell. It was observed that previous concrete repairs had been made in other areas of the cap and along the expansion joints. All these repairs were in good condition with the exception of one depicted in photo 47.

The concrete drainage channel which parallels the Site on the east side of the south field containment cap had been cleared of weed growth in the joints. The small tree located in the drop inlet at the terminus of the channel during the second Five-Year Review had been removed. No shrubs or trees were observed to be growing on the cap. The Site fence around the containment cell was found in good repair. There was evidence of possible settlement, as seen in photos 51 and 52; however there were no radial cracks emanating from the depressed areas. There were no excessive cracks in other areas of the concrete cap. No leachate or seeps were noted. The cap was well posted with warning signs. The Site was locked and secured.

Inspection of the north end of the Site showed various areas where dumping of drums, compressed gas cylinders, liquid petroleum gas, broken computer equipment/electronics, trash, and debris has occurred. Discarded drums (55 Gallon) labeled "Polymeric Isocyanate" were found on site. Polymeric isocyanate is a two-component casting urethane, which contains hazardous components (4, 4-Dihenylmethane Diisocyanate, higher oligomers of methylene diphenyl diisocyanate, and chlorinated paraffin hydrocarbon). This compound is a viscous liquid with an aromatic odor. Exposure may cause impaired lung function. Several discarded drums were so weathered the labels were unreadable. Discarded drums (55 gallon) labeled "Polyurethane Foam Resin-B" were also found on the north end of the Site. The proprietary component is an amine catalyst which has minimal health hazards. The quantity of fluid in each drum is unknown.

A large portable storage container is stored on the concrete pad just north of the brick warehouse. Although this is a rental unit, the company (PSS) does not have record of it being leased out. Therefore, the parties responsible for it being on site could not be located for interview. The container was locked and could not be inspected to see what is stored inside. The TCEQ Project Manager subsequently located the person who leased the storage container, and the lessee stated that she would remove the contents of the container from the Site and return the container to the leasing company.

The brick warehouse, located north of the main office building, has timber post and beam construction with a ceiling of creosote treated beams (photo 9). It has flooring that appears to be composed of creosote treated wood bricks (photo 8). The interior was littered with trash, debris, compressed gas cylinders, computer parts, and broken computer equipment. The broken computer equipment was most likely left on site by the previous tenant that ran the now defunct "American Computer Recycling". The brick warehouse was not tested for hazardous chemicals during the Remedial Investigation and may contain COCs.

The main office building appeared to have a concrete floor and was littered with trash and debris (photos 1 through 3). Adult clothing stuffed with rags was lying on the floor in the middle of the building (photo 1). The office building was not tested for hazardous chemicals during the Remedial Investigation and may contain COCs.

The Site is enclosed by a chain-link fence on all sides except the brick warehouse. The fence intersects the face of the brick warehouse on the east side of the Site along Main Street. Two sets of double doors face Main Street and can be used as points of access to the Site (photos 57, 58, and 59). The fence on the north and west sides of the Site is overgrown with small trees and bushes (photos 4, 17 and 35). The entry gate between the metal warehouse and the office building was missing a hinge.

2. Risk Information Review

The purpose of the review is to confirm that the remedy as described in the ROD and remedial design remains effective at protecting human health and the environment (e.g., the remedy is operating and functioning as designed). In addition, the review evaluates whether original clean-up levels remain protective of human health and the environment. ARARs and To Be Considered (TBCs) requirements are key elements in fulfilling these two purposes. ARARs pertaining to remedial action activities are divided into chemical, location, and action-specific categories.

Chemical-specific ARARs are usually health or risk-based numerical values or methodologies that, when applied to site-specific conditions, result in the establishment of numerical values. These values establish the acceptable amount or concentration of a chemical that may remain in or be discharged to the ambient environment. If more than one chemical-specific ARAR exists for a contaminant of concern, the most stringent level will be identified as an ARAR for the remedial action.

Location-specific ARARs are restrictions placed on the concentration of hazardous substances or the conduct of activities solely because they are in special locations. Some examples of locations that might prompt a location-specific ARARs include wetlands, sensitive ecosystems or habitats, flood plains, and areas of historical significance. Action-specific ARARs are usually technology or activity-based requirements or limitations on actions taken with respect to hazardous wastes or requirements to conduct certain actions to address particular site circumstances. These requirements are triggered by the particular remedial activities that are selected to accomplish a remedy.

These action-specific requirements do not in themselves determine the remedial alternative; rather, they indicate how a selected alternative must be achieved. The December 1988 ROD identified the following action-specific ARARs for the Pesses site remedial action:

1. Occupational Safety and Health Act (applicable).
2. Clean Air Act and National Ambient Air Quality Standards (relevant).
3. National Pollutant Discharge Elimination System Treatment Standards (relevant).
4. Hazardous Materials Transportation Act (applicable).
5. Solid Waste Disposal Act [RCRA] (applicable).
6. RCRA Clean Closure (relevant).
7. Texas Water Quality Standards, Texas Administrative Code Part 319 (relevant).
8. Texas Solid Waste Disposal Act (applicable).

Since chemical-specific and location-specific ARARs do not exist for the contamination at the Pesses Site, target soil action levels were developed as TBC requirements. One of the requirements of a five-year review is to determine if there are any new requirements that may pertain to the Site. It has been determined that there are no newly promulgated requirements, or updated TBC requirements, which would render the remedy inadequate.

VIII. TECHNICAL ASSESSMENT

1. Question A: Is the Remedy Functioning as Intended by the Decision Documents?

The ROD specified in-situ stabilization of the contaminated soils and capping as the remedy. The remedy relies on the integrity of the concrete cap and HDPE liner under the concrete. The EPA selected this remedy because it eliminates the principal threat posed by site conditions by eliminating human exposure to the contaminated material and preventing the spread of contaminants. All inspections to date indicate that the concrete cap has been effective in isolating waste and contaminants, and continues to be protective of human health and the environment. The remedy is in compliance with the ROD. The security fencing around the containment cap is intact. When all gates are locked, access to the containment area is reasonably prevented. Neither the concrete cap over the stabilized waste nor the fence around the capped area has significantly deteriorated. Therefore, human and animal contact with site contaminants is precluded.

In order for the remedy to be protective in the long term, the institutional controls, by way of a Restrictive Covenant or Deed Notice, as appropriate, should be fully implemented.

2. Question B: Are the Exposure Assumptions, Toxicity Data, Cleanup Levels, and Remedial Action Objectives Used at the Time of the Remedy Still Valid?

The promulgated standards and assumptions have been evaluated and no significant changes to those standards and assumptions were found that would impact the protectiveness of the remedy.

3. Question C: Has Any Other Information Come to Light That Could Call Into Question the Protectiveness of the Remedy?

No other events have affected the current protectiveness of the remedy in regards to the containment cell concrete cap. There is no other information that calls into question the current protectiveness of the containment cell remedy at the south end of the Site.

However, the fence bordering the northern end of the Site does not preclude human contact as evidenced by the unauthorized dumping and placement of a large portable storage container just north of the brick warehouse. The fence intersects the brick warehouse on the west side of the Site along Main Street and therefore does not completely encompass the Site. Access to the Site can be obtained through two sets of double doors of the warehouse along South Main Street, as well as from the gate on the west face of the fence north of the buildings where the portable storage container is located. This access could adversely affect the protectiveness of the overall remedy. Unauthorized use and dumping of waste could cause the release of contaminants to the Site.

4. Technical Assessment Summary

This Five-Year Review was performed to evaluate whether the Pesses Site remains protective of human health and the environment. The remedial actions for the Site were completed as directed in the ROD, and are consistent with the Explanation of Non-Significant Change, and the Explanation of Significant Differences. No signs of significant deterioration or failures were evident. The stabilization and capping technologies utilized are effective at containing and preventing direct contact with contaminated materials. According to the data reviewed and the Site inspection, the remedy is functioning as intended by the ROD and remains protective of human health and the environment.

There have been no changes in the physical conditions of the containment cell cap that would affect the protectiveness of the remedy. All ARARs for soil and ground water contamination cited in the ROD have been met. Institutional controls that would enhance the long term protectiveness as determined in the second Five-Year Review are being implemented by TCEQ. Therefore, the remedy continues to be protective of human health and the environment; however, the Institutional Control is not yet in place. In as much, the long term protectiveness of the remedy is not enforceable.

Future protectiveness of the Site could be compromised by unauthorized access to the Site, which has occurred on the north end of the Site. This access is evident by the presence of a large portable storage container on the Site, in addition to dumping of wastes, drums, and debris. Therefore, the gap in the fencing at the north end of the Site is inadequate in preventing access. This access could

open the Site up to additional contamination and adversely affect the protectiveness of the overall remedy.

IX. ISSUES

There are no issues that currently prevent the remedy from being protective of human health and environment with the exception of issues noted below in regards to the northern portion of the Site.

Issues	Affects Protectiveness (Y/N)	
	Current	Future
Hairline cracks and minimal degradation of the concrete	N	Y
Weeds growing in cracks/joints and along drainage channel	N	Y
Maintain containment cap integrity and effectiveness	N	Y
Restrictive Covenant has not been file in the county deed records nor has a Deed Notice been filed.	N	Y
Trees and bushes growing into north perimeter fence can damage the fence increasing maintenance costs.	N	Y
Evidence of unauthorized access to the site for storage, dumping, and housing of vagrants.	Y	Y
Large portable storage container found on-site.	N	N
Possible COC contamination remains in the main office and brick warehouse as they were not sampled for COCs or cleaned during the investigation or remedial action.	N	Y
The brick buildings appear to be partially constructed with creosote treated wood (floors, beams, and ceiling)	N	Y
Electronic waste left in place by a previous tenant has been stored in the brick buildings for many years, possibly contributing to existing contamination. Electronic waste can contain hazardous metals including lead, cadmium, mercury, and chromium.	N	Y
Gate hinge is broken	Y	Y

X. RECOMMENDATIONS AND FOLLOW-UP ACTIONS

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
Hairline cracks and minimal degradation of the concrete	Mending cracks in concrete. Resealing the cracked concrete cap	TCEQ	TCEQ/EPA	Semi-annually Every 3 years	N	Y
Weeds growing in cracks/joints and along drainage channel.	Removal of weeds from the expansion joints and fence, and drainage channel.	TCEQ	TCEQ/EPA	Semi-annually	N	Y
Maintain containment cap integrity and effectiveness	1. Continue semi-annual site inspections. 2. Continue to perform site maintenance activities	TCEQ	TCEQ/EPA	Semi-annually	N	Y
Restrictive Covenant has not been file in the county deed records nor has a Deed Notice been filed.	File a Restrictive Covenant, or a Deed Notice, as required, in the Deed Records of Tarrant County.	TCEQ	TCEQ/EPA	September 2010	N	Y
Tress and bushes growing into perimeter fence.	The trees and bushes growing into the fence should be removed	TCEQ	TCEQ/EPA	September 2010	N	Y

Issue	Recommendations/ Follow-up Actions	Party Responsible	Oversight Agency	Milestone Date	Affects Protectiveness? (Y/N)	
					Current	Future
Evidence of unauthorized access to the site for storage, dumping, and housing of vagrants.	1. Extend fence along face of brick warehouse to restrict access through doors and windows. 2. Lock building doors 3. Vandal proof locks should be installed on all gates.	TCEQ	TCEQ/EPA	September 2010	Y	Y
Large portable storage container found on-site.	1. Locate responsible party. 2. Have storage container removed.	TCEQ	TCEQ/EPA	September 2010	N	N
Possible contamination of the main office and brick warehouse	1. Sample inside of buildings for COCs 2. Remediate as necessary	TCEQ/EPA	TCEQ/EPA	September 2011	N	Y
Possible creosote contamination in brick buildings (floors, beams, and ceiling)	1. Determine if wood timbers/bricks are treated 2. Remediate as necessary	TCEQ/EPA	TCEQ/EPA	September 2011	N	Y
Electronic waste left in place by a previous tenant.	1. Remove and dispose of waste 2. Sample for contamination 3. Remediate as necessary	TCEQ	TCEQ/EPA	September 2011	N	Y
Gate hinge is broken	Replace gate hinge	TCEQ	TCEQ/EPA	September 2010	Y	Y

XI. STATEMENT OF PROTECTIVENESS

The remedy at the Pesses Chemical Company Superfund Site is protective of human health and the environment, and exposure pathways that could result in unacceptable risks are being controlled. The contaminated soils have been stabilized and placed in a containment cell that is covered with a HDPE liner and a concrete cap. However, in order for the remedy to maintain long-term protectiveness, full implementation of institutional controls should occur. In addition, the recommended investigation of the brick warehouse and main office building should be performed to ensure all contamination was removed from the Site. All materials and debris that could pose an environmental hazard should be removed.

XII. NEXT REVIEW

This is a site that requires ongoing statutory five-year reviews. The next review will be conducted within five years of the completion of this five-year review report, or by July 2014. This next review will also verify the presence and effectiveness of the institutional controls that are to be implemented subsequent to this five-year review.