Third
Five-Year Review Report

White Farm Equipment Company Site
Charles City
Floyd County, Iowa

June 2009

Region 7
United States Environmental Protection Agency
Kansas City, Kansas

Approved by:

[Signature]
Cecilia Tapia
Superfund Division Director
U.S. EPA, Region 7
Executive Summary

A five year review has been completed at the White Farm Equipment Company Site (site) located in Charles City, Iowa. This is the third five year review at the site.

The White Farm Equipment Company site is located along the northern edge of the city of Charles City in Floyd County, Iowa. The site occupies approximately 20 acres at the southeast corner of Kellogg Avenue and Rotary Park Road. The site is in the location of a former oxbow lake formed by a cutoff meander of the Cedar River. Remnants of the oxbow lake still exist northwest and south of the site. The site is covered by a vegetated soil cap and is sloped to provide runoff. The site drains to the wetlands (remnants of the oxbow lake) to the northwest and south of the site and ultimately the Cedar River. The Cedar River is approximately 2,200 feet west-southwest of the site. Site maps showing the limits of the cap and locations of monitoring wells are provided in Attachment A.

The final remedy for the White Farm Equipment Company site included installation of a protective cap over the landfill material to prevent direct contact and minimize surface water runoff and infiltration. Groundwater sampling was conducted as part of the remedial design and no groundwater contamination above the groundwater performance standards was detected. Therefore, in accordance with the Statement of Work in the 1991 Consent Decree, groundwater treatment was not implemented. Long-term groundwater monitoring consisting of sampling at the time of the five-year reviews was required in the 1994 Operation and Maintenance (O&M) Plan for the site. An Explanation of Significant Differences (ESD) was issued in 1992 that modified the type of cap to be installed, revised the time frame to complete construction of the cap, and clarified the groundwater point of compliance.

Five-year reviews are required at the White Farm Equipment Company site because contaminants remain at the site above levels which would allow for unlimited use and unrestricted exposure. The first five year review in September 1999 determined that the response action at the site was protective of human health and the environment. The site was
deleted from the National Priorities List (NPL) on October 30, 2000. The second five year review in September 2004 also determined that the site continued to protect human health and the environment. The site was chosen as a Demonstration Project for the 2007 Return to Use Initiative.

The site is listed on the State of Iowa *Registry of Hazardous Waste or Hazardous Substances Disposal Sites* and is classified as “Requires Continued Maintenance, Site Properly Closed”.

The immediate threats have been addressed and the remedy continues to be protective of human health and the environment. The cap continues to prevent direct contact with the landfill materials and minimize surface water runoff and infiltration. Review of the analytical data from the groundwater monitoring effort indicates that remedial action objectives (RAOs) identified in the Record of Decision (ROD), as amended by the ESD, have been achieved. Specifically, the groundwater contamination levels remain below the groundwater performance standards.

The responsible party has declared bankruptcy and the site is now Fund-lead. To insure the integrity of the cap, continued maintenance should be conducted. Damage to two monitoring wells was observed during the site inspection. It is recommended these repairs be accomplished.

The remedy at the White Farm Equipment site is protective of human health and the environment. All threats at the site have been addressed through capping of contaminated soils and wastes on site, long-term groundwater monitoring, and a restrictive covenant that prohibits the installation of any wells for the purpose of extracting water for human drinking purposes or for the irrigation of food or feed crops.
Table of Contents

Section

Executive Summary .......................................................... ES-1
List of Acronyms ............................................................... iii
Five-Years Review Summary Form .............................................. iv

1.0 Introduction ........................................................................ 1
2.0 Site Chronology ................................................................... 3
3.0 Background .......................................................................... 4
   3.1 Physical Characteristics ....................................................... 4
   3.2 Land and Resource Use ........................................................ 4
   3.3 History of Contamination ...................................................... 4
   3.4 Initial Response .................................................................. 5
   3.5 Basis for Taking Action ....................................................... 5
4.0 Remedial Actions .................................................................. 6
   4.1 Remedial Action Objectives .................................................. 6
   4.2 Remedy Selection ................................................................ 6
   4.3 Remedy Implementation ...................................................... 7
   4.4 Operational and Functional Activities ................................. 7
5.0 Progress Since Last Review .................................................... 9
6.0 Five-Year Review Process ...................................................... 11
   6.1 Administrative Components ............................................... 11
   6.2 Community Involvement ...................................................... 11
   6.3 Document Review ............................................................. 11
   6.4 Data Review ..................................................................... 11
   6.5 Site Inspection .................................................................. 15
   6.6 Interviews ......................................................................... 16
7.0 Technical Assessment ............................................................ 17
   7.1 Question A ...................................................................... 17
   7.2 Question B ...................................................................... 18
   7.3 Question C ...................................................................... 20
   7.4 Technical Assessment Summary ......................................... 20
8.0 Issues .................................................................................. 21
9.0 Recommendations and Follow-up Actions ............................ 22
10.0 Protectiveness Statement ....................................................... 23
11.0 Next Review ....................................................................... 24
Figures
Figure 1: Location and Vicinity
Figure 2: Site Plan

Tables
Table 1: Chronology of Site Events
Table 2: Monitoring Well Sampling Results
Table 3: Issues
Table 4: Recommendations

Attachments
Attachment A: Figures
Attachment B: ARARs
Attachment C: Restrictive Covenant
Attachment D: Public Notice
Attachment E: Site Inspection Photographs
Attachment F: Site Inspection Checklist
List of Acronyms

ARARs   Applicable or relevant and appropriate requirements
CERCLA  Comprehensive Environmental Response, Compensation, and Liability Act
CFR     Code of Federal Regulations
EPA     Environmental Protection Agency
ESD     Explanation of Significant Differences
FS      Feasibility Study
IAC     Iowa Administrative Code
IDNR    Iowa Department of Natural Resources
IEUBK   Integrated Exposure Uptake Biokinetic Model for Lead in Children
LDL     Laboratory lowest detection limit
MCL     maximum contaminant level
NA      not applicable
NCP     National Contingency Plan
NPL     National Priorities List
NS      not sampled
O&M     operation and maintenance
PVC     polyvinyl chloride
RAO     remedial action objective
RI      Remedial Investigation
ROD     Record of Decision
RPM     Remedial Project Manager
SARA    Superfund Amendments and Reauthorization Act
ug/L    micrograms per liter
Five-Year Review Summary Form

<table>
<thead>
<tr>
<th>SITE IDENTIFICATION</th>
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<tr>
<td>Site name (from WasteLAN): White Farm Equipment Company Site</td>
</tr>
<tr>
<td>EPA ID (from WasteLAN): IAD065210734</td>
</tr>
<tr>
<td>Region: 7</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>SITE STATUS</th>
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<tr>
<td>NPL status: □ Final</td>
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<tr>
<td>Remediation status (choose all that apply): □ Under Construction</td>
</tr>
<tr>
<td>Site Wide FYR: ✓ YES</td>
</tr>
<tr>
<td>Construction completion date: 09/08/1995</td>
</tr>
<tr>
<td>Has site been put into reuse? □ YES</td>
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</table>

<table>
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<tr>
<th>REVIEW STATUS</th>
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<tr>
<td>Lead agency: ✓ EPA</td>
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<tr>
<td>Author name: Shelley Brodie</td>
</tr>
<tr>
<td>Author title: Remedial Project Manager</td>
</tr>
<tr>
<td>Review period: 09/30/2004 to 09/30/2009</td>
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<tr>
<td>Date(s) of site inspection: 12/03/2008 to 12/05/2008</td>
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<tr>
<td>Type of review: □ Statutory</td>
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<tr>
<td>✓ Post-SARA</td>
</tr>
<tr>
<td>□ Non-NPL Remedial Action Site</td>
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<td>□ Regional Discretion</td>
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<tr>
<td>□ Actual RA Onsite Construction at OU #</td>
</tr>
<tr>
<td>□ Actual RA Start</td>
</tr>
<tr>
<td>□ Construction Completion</td>
</tr>
<tr>
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</tbody>
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| □ Other (specify) |

| Triggering action date (from WasteLAN): 09/29/2004 |
| Due date (five years after triggering action date): 09/29/2009 |

<table>
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<tr>
<td>1. Damage to Protective Casing on Monitoring Well WFE-5B</td>
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<tr>
<td>2. Damage to Protective Casing and Riser on Monitoring Well WFE-6A</td>
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<tr>
<td>3. Missing Well Labels</td>
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</table>
Recommendations and Follow-up Actions:

1. Repair Protective Casing on WFE-5B
2. Abandon Monitoring Well WFE-6A
3. Affix Permanent Well Labels

Protectiveness Statement(s):

The remedy at the White Farm Equipment site is protective of human health and the environment. All threats at the site have been addressed through capping of contaminated soils and wastes on site, long-term groundwater monitoring, and a restrictive covenant that prohibits the installation of any wells for the purpose of extracting water for human drinking purposes or for the irrigation of food or feed crops.

Other Comments:

Due to the limited risks posed by the site, it appears to be a suitable candidate for a Ready-for-Reuse determination. The current restrictive covenant for the site is limited to a prohibition of the installation of any wells intended for human drinking purposes or for the irrigation of food or feed crops. If use of the site changes under a Ready-for-Reuse scenario, an additional institutional control may be necessary to prohibit disruption of the cap.
1.0 Introduction

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.

The United States Environmental Protection Agency (EPA) is preparing this five-year review pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121(c) and the National Contingency Plan (NCP). CERCLA § 121(c) 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. In addition, if upon such review it is the judgment of the President that action is appropriate at such site in accordance with section [104] or [106], the President shall take or require such action. The President shall report to the Congress a list of facilities for which such review is required, the results of all such reviews, and any actions taken as a result of such reviews.*

EPA interpreted this requirement further in the NCP; 40 CFR § 300.430(f)(4)(ii) 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.*

EPA Region 7 has conducted a five-year review of the remedial action implemented at the White Farm Equipment Company Site in Charles City, Floyd County, Iowa. This review was conducted from November 2008 through September 2009. This report documents the results of the review.
This is the third five-year review for the White Farm Equipment Company Site. The triggering action for this review is five years after the date of the second five-year review for the site, which was completed in September 2004. The five-year review is required due to the fact that metals and volatile organic contamination remain on site above levels that allow for unlimited use and unrestricted exposure.
2.0 Site Chronology

A chronology of significant site events and dates is included in Table 1.

Table 1: Chronology of Site Events

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Site discovery following complaints from the Floyd County Board of Health.</td>
<td>1980</td>
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<tr>
<td>Preliminary assessment completed.</td>
<td>10/30/1985</td>
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<tr>
<td>Site inspection completed.</td>
<td>09/19/1986</td>
</tr>
<tr>
<td>Site proposed for the National Priorities List (NPL).</td>
<td>06/24/1988</td>
</tr>
<tr>
<td>An Administrative Order on Consent was signed by EPA and two responsible parties requiring completion of a site investigation.</td>
<td>04/14/1989</td>
</tr>
<tr>
<td>Remedial investigation (RI) completed by the responsible parties.</td>
<td>11/09/1989</td>
</tr>
<tr>
<td>Feasibility study (FS) and risk assessment completed.</td>
<td>06/1990</td>
</tr>
<tr>
<td>EPA-prepared focused FS completed.</td>
<td>07/1990</td>
</tr>
<tr>
<td>Final listing on the NPL.</td>
<td>08/30/1990</td>
</tr>
<tr>
<td>Record of Decision (ROD) was signed.</td>
<td>09/28/1990</td>
</tr>
<tr>
<td>A Consent Decree was signed by the responsible parties requiring that they design and perform the site cleanup.</td>
<td>1991</td>
</tr>
<tr>
<td>Explanation of Significant Difference (ESD) changing the capping material and groundwater treatment requirements was issued.</td>
<td>07/13/1992</td>
</tr>
<tr>
<td>Remedial design completed.</td>
<td>03/30/1994</td>
</tr>
<tr>
<td>Remedial action consisting of capping the landfill materials was initiated.</td>
<td>06/27/1994</td>
</tr>
<tr>
<td>Remedial action completed.</td>
<td>09/08/1995</td>
</tr>
<tr>
<td>First Five-Year Review</td>
<td>09/29/1999</td>
</tr>
<tr>
<td>EPA deleted the site from the NPL.</td>
<td>10/30/2000</td>
</tr>
<tr>
<td>Second Five-Year Review</td>
<td>09/29/2004</td>
</tr>
</tbody>
</table>
3.0 Background

3.1 Physical Characteristics
The White Farm Equipment Company site is located along the northern edge of the city of Charles City in Floyd County, Iowa. The site occupies approximately 20 acres at the southeast corner of Kellogg Avenue and Rotary Park Road. The site is in the location of a former oxbow lake formed by a cutoff meander of the Cedar River. Remnants of the oxbow lake still exist northwest and south of the site. The site is covered by a vegetated soil cap and is sloped to provide runoff. The site drains to the wetlands (remnants of the oxbow lake) to the northwest and south of the site and ultimately the Cedar River. The Cedar River is approximately 2,200 feet west-southwest of the site. Site maps showing the limits of the cap and locations of monitoring wells are provided in Attachment A.

3.2 Land and Resource Use
The site is currently unoccupied and covered by a vegetated soil cap. The land use of the surrounding area is mainly agricultural and residential. A junkyard is located adjacent to the northeast portion of the landfill. The land use for the site and surrounding areas has not changed significantly since the Record of Decision (ROD) and Explanation of Significant Differences (ESD) were issued.

3.3 History of Contamination
White Farm Equipment Company operated the disposal site on this property, which it leased from H.E. Construction Company. In 1971, White Farm Equipment Company began disposing of foundry sand, bag house dust, and other industrial wastes at the site. Disposal activities ended in 1985.

In 1984, the Iowa Department of Natural Resources (IDNR) required that White Farm Equipment Company install monitoring wells to assess whether environmental impacts from disposal activities had occurred. In 1985, EPA performed a preliminary assessment and from 1989 to 1990 a remedial investigation (RI), feasibility study (FS), and risk assessment were prepared to identify the nature and extent of contamination at the site.
The ROD, signed in 1990, specified a remedy including upgrading the landfill, installation of additional groundwater monitoring wells, extraction and treatment of groundwater, and long-term maintenance and monitoring. The site was added to the National Priorities List (NPL) in 1990. Additional groundwater sampling conducted as part of the Remedial Design indicated that there was no groundwater contamination above the groundwater performance criteria at the point of compliance. Therefore, as discussed in the Statement of Work of the 1991 Consent Decree, groundwater treatment and extraction was not implemented. An ESD was signed in 1992 which modified the type of cap, revised the cap construction time frame, and clarified the groundwater point of compliance.

3.4 Initial Response
In 1984 the IDNR required that the White Farm Equipment Company install monitoring wells to assess whether disposal activities at the site had impacted the environment. An RI/FS was performed by the responsible parties from 1989 to 1990.

3.5 Basis for Response Action
The landfill materials at the site were found to contain elevated levels of metals and low levels of some organic contaminants. The contaminants of concern at the site identified in the risk assessment included benzene in the groundwater and lead in the soil and landfill material. The risk assessment identified ingestion of groundwater and direct contact with landfill material as exposure pathways which posed unacceptable risks at the site.
4.0 Remedial Actions

4.1 Remedial Action Objectives

The objectives of the response action with regard to solid wastes/contaminated soil are to prevent human exposure via direct onsite contact with the wastes and contaminated soil and to prevent off-site transport of contaminated materials. The objectives of the remedial action with respect to groundwater are to prevent further migration of contaminated groundwater and to reduce levels of contaminants in groundwater below established health-based standards for drinking water. These objectives have been established to ensure protection of drinking water supplies.

4.2 Remedy Selection

The ROD for the White Farm Equipment Company site was signed on September 28, 1990, to address the risks identified in the risk assessment. These risks included direct contact with landfill material and ingestion of contaminated groundwater. The ROD selected a remedy to: 1) control surface water runoff and infiltration through installation of a low permeability cap, and 2) restore groundwater to allow its use as a potable water supply through extraction and treatment. The 1991 Consent Decree required additional groundwater monitoring during the remedial design to confirm the need for groundwater extraction and treatment. The remedial design sampling indicated that no groundwater contamination existed above the groundwater performance criteria at the point of compliance. Therefore, groundwater extraction and treatment was not implemented. An ESD was issued July 13, 1992 that modified the type of cap to be installed, revised the construction time frame, and clarified the groundwater point of compliance. The major components of the final remedy for the site included the following:

- Implementation of institutional controls (restrictive covenant).
- Regrading the landfill to reduce runoff and erosion.
- Capping of the landfill in accordance with State of Iowa solid waste landfill closure requirements.
- Conducting groundwater monitoring during the five-year reviews.
- Performing operation and maintenance (O&M) of the fencing and landfill cover.
4.3 Remedy Implementation

In a Consent Decree in 1991, Allied Products Corporation agreed to perform the remedial design and construct the remedial action. The remedial design and construction of the remedial action were conducted in accordance with the ROD as modified by the ESD. The remedial design was approved by EPA on March 30, 1994.

The remedial action construction activities consisted of installing the compacted cap, vegetating the cap, installing perimeter fencing, and instituting deed restrictions. A restrictive covenant for the property was recorded and filed on October 5, 1992, in Floyd County. The restrictive covenant prohibits the construction, installation, maintenance, and use of any wells on the property for the purpose of extracting water for human drinking purposes or for the irrigation of food and feed crops. These restrictions run with the land and are binding on all owners. The remedial action was constructed from mid-1994 to mid-1995. Construction completion was achieved when the Site Closeout Report was completed on September 8, 1995. A copy of the restrictive covenant is included in Attachment C.

4.4 Operational and Functional Activities

O&M activities at the site since construction completion were completed in accordance with the O&M plan prepared for the site in January 1994. Post-closure site activities were conducted by the responsible party since completion of the remedial action construction and included inspection of the following items:

- Final cover.
- Groundwater monitoring wells
- Drainage facilities.
- Storm water retention areas.
- Access road.
- Perimeter fencing, gates, and signs.

O&M activities and post closure site inspection were conducted by Allied Products Corporation in October 2000.

Costs for the October 2000 monitoring and maintenance were $2,500 and included the site inspection, removal of small trees from the cover, and preparation of the O&M progress report.
Shortly after the October 2000 post closure site inspection, Allied Products Corporation filed for bankruptcy and the site became Fund-lead with EPA and IDNR taking over responsibility for maintenance of the site.
5.0 Progress Since Last Review

The protectiveness statement from the 2004 five-year review was:

The site is protective of human health and the environment. The cap continues to prevent direct contact and minimize surface water runoff and infiltration. Continued O&M of the cap needs to be conducted to ensure that the integrity of the cap is maintained. Grass needs to be mowed and volunteer trees removed. Monitoring well WFE-5A needs to be repaired and monitoring well WFE-6B needs to be abandoned.

The concentrations of benzene, cadmium, chromium, and lead in the groundwater continue to meet groundwater performance standards. Monitoring should continue to be conducted at the time of the five-year reviews to ensure that the groundwater performance standards continue to be met.

Three issues were identified in the last five-year review. None of these issues were considered to have an impact on the current or future protectiveness of the remedy. The current status of these issues is as follows:

**Issue 1:** Grass, volunteer trees on landfill cap and storm water retention areas.
The second five-year review recommended that the grass be mowed and the volunteer trees removed. There is no documentation indicating these activities had occurred since the last five-year review, however, during the December 2008 site visit, the grass cover appeared appropriate and the extent of volunteer trees was limited to the perimeter of the landfill near drainage features. Discussions with the site owner indicated there may have been some effort in removing the volunteer trees since the last five-year review.

**Issue 2:** Damaged protective casing to monitoring well WFE-5A.
The second five-year review in 2004 recommended that the casing on WFE-5A be repaired. Based on the site inspection, the PVC casing did not appear to be damaged, but the cap on the well was broken and not removable without potentially causing damage to the casing. Very low temperatures (10°F) combined with precipitation may have caused the cap to freeze in place
making removal more difficult. It should also be noted that well identifiers in the field are mislabeled. Based on the depths as indicated in the well completion logs, wells WFE-5A and WFE-5B were incorrectly identified. The well labeled WFE-5B should be labeled WFE-5A and vise versa. Therefore, the actual well with the damaged protective casing is WFE-5B.

**Issue 3:** Damaged riser and protective casing to monitoring well WFE-6B.
The well should be properly abandoned. The well identifiers for monitoring wells WFE-6A and WFE-6B were also incorrect. The well identified as WFE-6B is actually WFE-6A and vise versa. Therefore, the actual well with the damaged protective casing is WFE-6A.
6.0 Five-Year Review Process

6.1 Administrative Components
The five-year review process was conducted by Shelley Brodie, the EPA Region 7 RPM for the site, supported by Paul Speckin and Amy Darpinian of the U.S. Army Corps of Engineers, Kansas City District.

6.2 Community Involvement
Public notices announcing the five-year review process were advertised in the Charles City Press on December 24, 2008 and December 26, 2008. A copy of the public notice is included in Attachment D. No comments were received from the public during the five-year review process. In addition to the public notice, the city administrator’s office was notified to inform them of our site inspection and monitoring well sampling associated with the five-year review. No concerns regarding issues with the site were identified.

6.3 Document Review
The following documents were reviewed as part of the current five-year review:


6.4 Data Review
Groundwater monitoring at the White Farm Equipment Company site was completed as part of the five-year review. The previous groundwater monitoring efforts were completed in June 1999 and May 2004 for inclusion in the first and second five-year reviews.
As part of this third five-year review, groundwater samples were collected on December 4 and 5, 2008, from four of the six existing monitoring wells (WFE-5A, WFE-6B, WFE-7A, and WFE-7B). Two monitoring wells that were not sampled in 2004, because they were underwater due to spring snow melt conditions and previous rainfall events, were sampled (WFE-7A and WFE-7B). As reported in the second five-year review, monitoring well WFE-6A was damaged and could not be sampled. The protective casing to monitoring well WFE-5B was damaged and although the PVC casing did not appear to be damaged, the cap on the well was broken and not removable without potentially causing damage to the casing; therefore, well WFE-5B could not be sampled. The wells sampled were suitable to characterize the groundwater.

Groundwater samples were analyzed for the presence of benzene, cadmium, chromium, and lead and the results were compared with the groundwater performance criteria set for the site. Table 2 presents the results of the samples collected on December 4 and 5, 2008, along with the results of the samples collected for the first and second five-year reviews and the groundwater performance standards. The groundwater performance standard for benzene was set in the ROD. The groundwater performance standards for cadmium, chromium, and lead were set in the 1991 Consent Decree.

Sampling difficulties were encountered during the December 4 and 5, 2008 event.

- Wells were mislabeled but identified by their total depth as reported on the drilling logs.
- Extremely cold weather prevented the water quality meter from properly recording all parameters, so that some samples may have been collected prior to complete stabilization.
- After purging with a pump, well WFE-6B was sampled by bailer as described in the Quality Assurance Project Plan,
- Well WFE-7B was sampled by bailer without any purging and may not completely represent a stabilized formation water sample. The data has been qualified as estimated and can be used for project decisions.

Based on a review of the data, the sampling field records, and the data validation information provided by EPA Region VII Laboratory, the groundwater sampling data is of acceptable quality for use in this five-year review.
As presented in Table 2, the levels of benzene, cadmium, chromium, and lead in the groundwater remain below the groundwater performance standards set for the site. It should be noted that the concentrations of all four analytes were below detection limits during both the 1999 and 2004 monitoring efforts. During the 2008 monitoring effort, there were low detections of cadmium, chromium, and lead below performance standards.
Table 2: Monitoring Well Sampling Results

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</tr>
</thead>
<tbody>
<tr>
<td>WFE-5A</td>
<td>1.0 U</td>
<td>1.0 U</td>
<td>0.50 U</td>
<td>0.44 U</td>
<td>3.0 U</td>
<td>1.00 U</td>
<td>0.88 Bu</td>
<td>15.0 U</td>
<td>2.00 U</td>
<td>1.9 U</td>
<td>50.0 U</td>
<td>1.00 U</td>
</tr>
<tr>
<td>WFE-5B</td>
<td>1.0 U</td>
<td>1.0 U</td>
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<td>0.97 Bu</td>
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<td>WFE-6A</td>
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<td>50.0 U</td>
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<td>WFE-6B</td>
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<td>1.0 U</td>
<td>NS</td>
<td>0.50 U</td>
<td>0.44 U</td>
<td>NS</td>
<td>3.1</td>
<td>1.1 Bu</td>
<td>NS</td>
<td>2.00 U</td>
<td>1.9 U</td>
<td>NS</td>
<td>1.00 U</td>
</tr>
</tbody>
</table>

Performance Standard: 1.0 5.0 100.0 50.0

Notes:
- * The groundwater performance standard for benzene was set in the ROD. The groundwater performance standards for cadmium, chromium, and lead were set in the 1991 Consent Decree.
- 1999 samples were collected by the responsible party’s contractor on June 22 and 23, 1999.
- 2004 samples were collected by EPA’s contractor, on March 30 and 31, 2004.
- 2008 samples were collected by US Army Corps of Engineers on Dec. 4 and 5, 2008.
- All values are in micrograms per liter (ug/L).
- NS - No sample was collected. In 2008 sampling event, well WFE-5B cap was not functional and frozen shut and WFE-6A was damaged and could not be sampled.
- U - Not detected above reporting limit listed.
- J - The identification of the analyte is acceptable; the reported value is an estimate.
- NA - Not applicable.
- B - The result is estimated. The analyte concentration is between the Instrument Detection Limit (IDL) and the Contract Required Quantitation Limit (CRQL).
- u - The analyte was considered nondetect during data validation on the basis of blank detections.
6.5 Site Inspection

A site inspection was conducted on December 4, 2008. The purpose of the site inspection was to identify the existing condition of the remedy and any changes that could negatively affect the protectiveness of the remedy. The site inspection included inspection of the final cover, the groundwater monitoring wells, the drainage channels and storm water retention areas, the access road, the perimeter fencing, gates, and signs. Photos from the site inspection are included in Attachment E.

The cover was inspected by walking north-south transects on the landfill cover. Detailed inspection to assess vegetation condition and coverage and identify any small erosion features was hampered by a 4 to 6 inch snowfall the day before the inspection. However, in general, the cover appeared to be in good condition. There were no apparent erosion features on the cover or in the drainage swales. The sedimentation basins and associated overflow structures were in good condition. There were some volunteer trees present as noted in the 2004 five-year review, but were primarily at the perimeter of the landfill outside the drainage swales and near the sedimentation basins. It is not believed these present a risk to the integrity of the landfill cover. The perimeter fence and gates were in good condition and warning signs were present. Although the well identifiers were incorrectly labeled, no unnecessary decisions resulted from the incorrect labeling because all of the reported monitoring results were below performance standards.

Two of the monitoring wells located along Kellogg Road, west of the site, were damaged. Monitoring well WFE-6A has a damaged protective steel casing and damaged polyvinyl chloride (PVC) riser pipe (identified previously as WFE-6B). Monitoring well WFE-5B is missing the locking cover portion of the protective steel casing, exposing the PVC riser and well cap. The locking mechanism on the riser well cap is also damaged, which prevented the well from being sampled during the 2008 sampling event. All of the other monitoring wells (WFE-5A, WFE-6B, WFE-7A, and WFE-7B) were in good condition.

An attempt was made to visit the Charles City Library to check the status of the administrative record, but the library was closed at the time, therefore the library was contacted by phone.
Library personnel were familiar with the administrative record for the site and indicated the documents were kept in a box in the back room.

6.6 Interviews
Bob Drstrup of IDNR was contacted regarding the White Farm Equipment site. Mr. Drstrup indicated he had no significant concerns regarding the protectiveness of the site. On December 4, 2008, Louis Blickenderfer, son of site owner Homer Blickenderfer, met with the inspection team at the site. Mr. Blickenderfer did not express any significant concerns with the site but did indicate a desire for EPA to continue pursuing the Ready-for-Reuse Determination on the property.
7.0 Technical Assessment

YES.

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

7.1.1 Remedial Action Performance

Review of documents, applicable or relevant and appropriate requirements (ARARs), risk assumptions, and the results of the site inspection indicate that the remedy for the site is functioning as intended by the ROD, as modified by the ESD. The cap over the landfill materials has prevented direct contact with contaminated landfill materials and minimized surface water runoff and infiltration. Analytical results from the five-year review groundwater monitoring effort indicate that the benzene, cadmium, chromium, and lead concentrations remain below the groundwater performance criteria set for the site.

7.1.2 System Operations and Maintenance

The operation and maintenance of the cap has been effective. Repairs to damaged wells are recommended to minimize any risk of vandalism.

7.1.3 Implementation of Institutional Controls and Other Measures

The Consent Decree for the site states the following:

Within thirty (30) days after entry of this consent decree, the Owner Settling Defendant shall submit for recording by the Recorder of Deeds, Floyd County, Iowa, a restrictive covenant which shall run with the property comprising the Site and which prohibits the construction, installation, maintenance, or use of any wells on the described property for the purpose of extracting water for human drinking purposes or for the irrigation of food or feed crops. Thereafter, each deed, title, or other instrument of conveyance for property included in the Site shall contain such a restrictive covenant.

A restrictive covenant for the property was recorded and filed on October 5, 1992, in Floyd County. The restrictive covenant prohibits the construction, installation, maintenance, and use of any wells on the property for the purpose of extracting water for human drinking purposes or for
the irrigation of food and feed crops. These restrictions run with the land and are binding on all owners. A copy of the restrictive covenant is included in Attachment C.

In addition to the institutional control required by the Consent Decree, the site has been listed on the State of Iowa Registry of Hazardous Waste or Hazardous Substances Disposal Sites (Registry). Placement of the site on the Registry serves as an additional institutional control. Once a site is placed on the Registry, a notice of listing is filed with the County Recorder’s Office and becomes part of the property’s chain of title. Pursuant to Iowa Code Chapter 455B.430, written approval from the Director of IDNR must be obtained prior to any substantial change in the manner in which the site is used. In addition, written approval from the Director of IDNR is required prior to any sale, conveyance, or transfer of title.

The White Farm Equipment site is being considered for a Ready-for-Reuse determination. The current restrictive covenant, eliminating the groundwater exposure pathway, is adequate for current site conditions and land use. However, if site use were to change, an additional institutional control may be necessary to prevent disruption of the cap and ensure protection against the direct exposure pathway.

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

YES.

7.2.1 Changes in Standards and To-Be-Considered Criteria

Completion of the cap construction resulted in the ARARs identified in the ROD for the soil remediation being met. In addition, the contaminant concentrations in the groundwater at the point of compliance continue to meet ARARs (the established groundwater performance criteria). A review of the chemical-specific ARARs found that the action level for lead set following the hierarchical methods established in 567 Iowa Administrative Code (IAC) §133.2 (455B, 455E) has changed from 50 micrograms per liter (ug/L) to 15 ug/L. This change occurred because of a change to the maximum contaminant level (MCL) set in the Safe Drinking Water Act. The groundwater monitoring conducted during the five-year reviews, remedial design, and the RI, has consistently found the groundwater lead concentrations at the point of
compliance to be below detection limits (as low as 1.9 ug/L). Therefore, the remedy remains protective. In addition, the risk assessment performed in 1990 indicated that benzene was the sole driver of the risk associated with ingestion of the groundwater. Lead was driving the risk in the soil exposure pathway.

7.2.2 Changes in Exposure Pathways, Toxicity, and Other Contaminant Characteristics

The risk assessment completed for the site identified benzene as the sole driver of the groundwater exposure pathway and lead as the sole driver for the soil exposure pathway. No exposures other than those evaluated in the 1990 risk assessment have been identified at the White Farm Equipment Company site since the ROD, the ESD, and the second five-year review were completed.

Lead risks are now evaluated by estimating blood-lead levels using the Integrated Exposure Uptake Biokinetic Model for Lead in Children (IEUBK Model), rather than calculating a hazard index for exposure to lead-contaminated soil as was done in the 1990 risk assessment prepared for the White Farm Equipment Company site. However, the cap at the site continues to prevent exposure to the landfill materials and minimize surface water runoff and infiltration. Therefore, recalculation of the cleanup levels for the site using the IEUBK Model is not necessary.

The cancer slope factor for benzene used in the 1990 risk assessment for the White Farm Equipment Company site was \(2.9 \times 10^{-2}\) (mg/kg-day)\(^{-1}\). While toxicity information for benzene was modified in 2000, the slope factor used in 1990 falls within the current range of oral slope factors published by EPA, which is \(1.5 \times 10^{-2}\) to \(5.5 \times 10^{-2}\) (mg/kg-day)\(^{-1}\). Given that the groundwater performance standard for benzene was set at the EPA lifetime health advisory level rather than a calculated risk-based level, the revisions to benzene toxicity presentation does not affect the protectiveness of the remedy.
7.3 Question C: Has any other information come to light that could call into question the protectiveness of the remedy?

NO.

No new ecological targets have been identified at the site. Because of the bankruptcy of the responsible party the site is Fund-lead and future O&M should be conducted by EPA and IDNR. No other events have occurred within the last 5 years that would affect the protectiveness of the remedy. There is no other information that calls into question the protectiveness of the remedy.

7.4 Technical Assessment Summary

Based on the data reviewed and the site inspection, the remedy is functioning as intended by the ROD and ESD. There have been no changes in the physical conditions of the site that would affect the protectiveness of the remedy. The concentrations of benzene, cadmium, chromium, and lead were below the groundwater performance standards, consistent with results from the previous two five-year reviews.
8.0 Issues

**TABLE 3: Issues**

<table>
<thead>
<tr>
<th>Issue #</th>
<th>Issue</th>
<th>Affects Protectiveness (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Damage to Protective Casing on Monitoring Well WFE-5B</td>
<td>N</td>
</tr>
<tr>
<td>2</td>
<td>Damage to Protective Casing and Riser on Monitoring Well WFE-6A</td>
<td>N</td>
</tr>
<tr>
<td>3</td>
<td>Missing Well Labels</td>
<td>N</td>
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</tbody>
</table>
9.0 Recommendations and Follow-Up Actions

Below is a list of recommended actions to address the issues identified in section 7.0 above.

TABLE 4: Recommendations and Follow-Up Actions

<table>
<thead>
<tr>
<th>Issue #*</th>
<th>Recommendations/ Follow-up Actions</th>
<th>Party Responsible</th>
<th>Oversight Agency</th>
<th>Milestone Date</th>
<th>Affects Protectiveness (Y/N)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Repair Protective Casing on WFE-5B</td>
<td>EPA &amp; IDNR</td>
<td>EPA</td>
<td>Sep. 2010</td>
<td>N N</td>
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<tr>
<td>2</td>
<td>Abandon Monitoring Well WFE-6A</td>
<td>EPA &amp; IDNR</td>
<td>EPA</td>
<td>Sep. 2010</td>
<td>N N</td>
</tr>
<tr>
<td>3</td>
<td>Affix Permanent Well Labels</td>
<td>EPA &amp; IDNR</td>
<td>EPA</td>
<td>Sep. 2010</td>
<td>N N</td>
</tr>
</tbody>
</table>
10.0 Protectiveness Statements

The remedy at the White Farm Equipment site is protective of human health and the environment. All threats at the site have been addressed through capping of contaminated soils and wastes on site, long-term groundwater monitoring, and a restrictive covenant that prohibits the installation of any wells for the purpose of extracting water for human drinking purposes or for the irrigation of food or feed crops.
11. Next Review

The next five-year review for the White Farm Equipment Site is required by June 30, 2014, five years from the date of this review.