# Third Five-Year Review Report
# Rogers Road Municipal Landfill

## Pulaski County, Arkansas

**September 2010**

**Region 6**
**United States Environmental Protection Agency**
**Dallas, Texas**

# THIRD FIVE-YEAR REVIEW

Rogers Road Municipal Landfill Superfund Site
EPA ID# ARD981055809
Pulaski County, Arkansas

This memorandum documents United States Environmental Protection Agency (EPA) approval of the Rogers Road Municipal Landfill Superfund Site Five-Year Review Report.

## Summary of Five-Year Review Findings

The Third Five-Year Review of the Rogers Road Municipal Landfill Site ("Site" or "Rogers Road Site") located near Jacksonville, in Pulaski County, Arkansas, was completed in August 2010. The results of the Third Five-Year Review indicate that the remedy is protective of human health and the environment. Overall, the Remedial Actions performed appear to be functioning as designed, and the Site has been maintained appropriately. No deficiencies were noted that impact the protectiveness of the remedy.

The remedy was chosen to remove the principal health threats that presented excess lifetime cancer risk, prevent further actual or threatened releases of hazardous substances from the Site, and establish a method of long term monitoring to ensure protectiveness. Materials containing dioxin concentrations above 10 parts per billion (ppb) were removed and incinerated at the nearby Vertac Superfund Site, and the affected areas were backfilled and re-graded. A soil cover was placed on materials that were between 1 and 10 ppb dioxin level, dieldrin levels greater than 37 ppb, and dieldrin and herbicide contamination associated with a hazard index above 0.7. A recent re-evaluation of the Technical Assistance Report at the time of the remedy shows that clean up in the new soil filled area was to 0.01 ppb or 10 parts per trillion (ppt). Thus, the cleaned up area meets the proposed interim Preliminary Remediation Goal (PRG) of 72 ppt for dioxin.

Operations and Maintenance (O&M) at the Site consists of Site inspections to confirm fence integrity, and maintenance of the soil cover. Site inspections show that the fencing is effectively preventing access to the Site and Site groundwater. Because no contaminants of concern defined by the Record of Decision were detected in the four years of annual groundwater monitoring, the Arkansas Department of Environmental Quality (ADEQ) recommended discontinuing groundwater monitoring. The EPA concurred that this recommendation was appropriate to implement, and groundwater monitoring was stopped after 1997. The Site was to be deleted from the National Priorities List (NPL), but has been held up over the issue of institutional controls. Counsel for EPA and the City of Jacksonville had correspondence and discussions over the issue during the period of 1999 through 2002. The issue was complicated by the fact that the Site property was reported to be in private hands with no clear record of title among numerous potential heirs, causing additional delay. In September 2003, an action to quiet title to the Site property, which the City Attorney had facilitated and assisted, was successfully

property, which the City Attorney had facilitated and assisted, was successfully concluded in state court.

Eventually, legal agreement was reached after extended negotiations between EPA, the City of Jacksonville, and the Site owners as to the form of restrictive covenants to be recorded in the deed records for Pulaski County, Arkansas. Restrictive covenants were then executed by the heir to the property and recorded in the deed records for the Site on February 29, 2008. Upon the completion of the restrictive covenants, the ADEQ provided the letter of concurrence for the deletion process in July 2008. An ESD was issued in August 2009, explaining the cessation of groundwater monitoring after 1997 and commencing the process of deletion of the Site from the NPL.

Based on this Five-Year Review, Site documentation confirms the Remedial Action at the Site as originally set forth in the Record of Decision (ROD) has been implemented as planned and continues to be protective of human health and the environment.

**Actions Completed**

An appropriate instrument granting restrictive covenants that prohibit use of groundwater for human, livestock, and agricultural consumption or contact was finalized in February 2008 and properly executed and recorded in the Site deed records.

An Explanation of Significant Differences (ESD) was issued in August 2009 to reflect the early attainment of groundwater cleanup goals and the consequent cessation of annual groundwater monitoring.

Upon proper recording of appropriate restrictive covenants and issuance of an ESD, the process of deleting the Site from the NPL has commenced.

No deficiencies were noted during the site inspection on May 6, 2010

**Determinations**

I have determined that the remedy for the Rogers Road Municipal Landfill Superfund Site is protective of human health and the environment.

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

9/24/10
Date

## CONCURRENCES

THIRD FIVE-YEAR REVIEW
Rogers Road Municipal Landfill Superfund Site
EPA ID# ARD981055809
Pulaski County, Arkansas

By: _____ Date: 9/15/10
Shawn Ghose, M.S.,P.E.,U.S. EPA
Remedial Project Manager

By: _____ Date: 9/21/10
Carlos Sanchez, U.S. EPA
Chief, Arkansas/Texas Section

By: _____ Date: 9/21/10
for Charles Faultry, U.S. EPA
Associate Director Remedial Branch

By: _____ Date: 9/22/10
Jacob Piehl, U.S. EPA
Site Attorney, Office of Regional Counsel

By: _____ Date: 09/23/10
Mark Peycke, U.S. EPA
Chief, Superfund Branch, Office of Regional Counsel

By: _____ Date: 9/27/10
for Pam Phillips, U.S. EPA
Deputy Director, Superfund Division

# Table of Contents

**Section** **Page**



**Figures**



**Tables**



**Attachments**

# List of Acronyms

| | |
|---|---|
| ADEQ | Arkansas Department of Environmental Quality |
| ADPC&E | Arkansas Department of Pollution Control and Ecology |
| ARARs | Applicable or Relevant and Appropriate Requirements |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CD | Consent Decree |
| CDC | Center for Disease Control |
| CFR | Code of Federal Regulations |
| COCs | Contaminants of Concern |
| E&E | Ecology and Environment |
| ERCS | Emergency Response Clean-up Service |
| ESD | Explanation of Significant Differences |
| EPA | United States Environmental Protection Agency |
| FR | Federal Register |
| HI | Hazard Index |
| LDR | Land Disposal Restrictions |
| NCP | National Oil and Hazardous Substances Pollution Contingency Plan |
| NPL | National Priorities List |
| MCLs | Maximum Contaminant Limits |
| O&M | Operation and Maintenance |
| OSWER | Office of Solid Waste and Emergency Response |
| OUs | Operable Units |
| ppb | part per billion |
| RCRA | Resource Conservation and Recovery Act |
| RI/FS | Remedial Investigation/Feasibility Study |
| ROD | Record of Decision |
| TAT | Technical Assistance Team |
| TBC | To Be Considered |
| TCDD | Tetrachlorodibenzo-p-dioxin |

# Five-Year Review Summary Form

## SITE IDENTIFICATION

Site name (from WasteLAN): Rogers Road Municipal Landfill

EPA ID (from WasteLAN): ARD980809941

| Region: EPA Region 6 | State: AR | City/County: Jacksonville/Pulaski |
|---|---|---|

## 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: September 1995 |
|---|---|

Has site been put into reuse? ☒ Yes ☐ No [With use limited by Restrictive Covenants as - IC]

## REVIEW STATUS

Reviewing agency: ☒ EPA ☐ State ☐ Tribe ☐ Other Federal Agency:

Author: Shawn Ghose M.S., P.E., RPM EPA Region 6, 6SF-RA

Review period: September 2005 to August 2010

Date(s) of site inspection: May 6, 2010

Type of review: ☒ Statutory
☐ 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 Onsite Construction ☐ Actual RA Start at OU# _____
☐ Construction Completion ☒ Recommendation of Previous Five-Year Review Report
☐ Other (specify):

Triggering action date (from WasteLAN): September 27, 2005 ( 2nd Five Yr Review)

Due date (five years after triggering action date): September 27, 2010

## Third Five-Year Review Summary Form

Deficiencies:

No deficiencies noted.

Follow-up Actions Concluded :

- An appropriate instrument granting restrictive covenants that prohibit use of groundwater for human, livestock, and agricultural consumption or contact was finalized in February 2008 and was properly executed and recorded in the Site deed records.
- An explanation of significant differences (ESD) was issued in August 2009 to reflect the early attainment of groundwater cleanup goals and the consequent cessation of annual groundwater monitoring.
- Upon proper recording of appropriate restrictive covenants and issuance of an ESD in 2009, the Site was placed on a process of deleting the Site from the NPL.

**Protectiveness Statement(s):**

The remedy completed for the Rogers Road Municipal Landfill Site is protective of human health and the environment.

Other Comments:

None.

# Third
# Five-Year Review Report
# Rogers Road Municipal Landfill

The United States Environmental Protection Agency (EPA) Region 6 has conducted the Third Five-Year Review of the Remedial Actions implemented at the Rogers Road Municipal Landfill Site ("Site" or "Rogers Road Site") located near Jacksonville, Pulaski County, Arkansas for the period of September 2005 through September 2010. The purpose of a five-year review is to determine whether the remedy at a Site is protective of human health and the environment. This report documents the results of the review for this Site, conducted in accordance with EPA guidance on five-year reviews.

Existing EPA guidance on five-year reviews includes the following:

- Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-02 (May 23, 1991), *Structure and Components of Five-Year Reviews* (introduced Five-Year Review requirements).
- OSWER Directive 9355.7-02FS1 (August 1991), Fact Sheet: *Structure and Components of Five-Year Reviews*.
- OSWER Directive 9355.7-02A (July 26, 1994), *Supplemental Five-Year Review Guidance* (introduced level of review considerations for sites where response is ongoing).
- OSWER Directive 9355.7-03A (December 21, 1995), *Second Supplemental Five-Year Review Guidance* (identified three purposes of Five-Year Review and emphasized that reviews must include a signed protectiveness determination, along with recommendations to correct deficiencies).

Guidance provided in these documents has been incorporated into the Five-Year Review performed for this Site, as have the concepts outlined in the Comprehensive Five-Year Review Guidance, June 2001, OSWER Directive 9355.7-03B-P.

# 1.0 Introduction

The Third Five-Year Review for the Rogers Road Municipal Landfill Site is required by statute. Statutory reviews are required for Sites where, after remedial actions are complete, hazardous substances, pollutants, or contaminants will remain onsite at levels that will not allow for unrestricted use or unrestricted exposure. This requirement is set forth by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). Statutory reviews are required only if the Record of Decision (ROD) was signed on or after the effective date of the Superfund Amendments and Reauthorization Act of 1986 (SARA). CERCLA §121(c), as amended by SARA, 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 §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.

This is the Third Five-Year Review for the Rogers Road Municipal Landfill Site. The triggering action for this statutory review is the date of the Second Five-Year Review, September 27, 2005. This review is required because hazardous substances, pollutants, or contaminants were left onsite above levels that allow for unlimited use and unrestricted exposure, and the ROD called for institutional controls limiting groundwater use on and immediately down gradient of the Site (EPA, 1990).

## 2.0 Site Chronology

A chronology of significant Site events and dates is included in Table 1, provided at the end of the report text. A reference list is provided in Attachment 1.

## 3.0 Background

The Rogers Road Municipal Landfill Site is about one acre of the ten-acre landfill located outside the city limits of Jacksonville in Pulaski County, Arkansas. The Site is approximately 12 miles northeast of Little Rock, Arkansas. The landfill is situated immediately east of Rogers Road, one-tenth mile south of Graham Road. The southern portion of Rogers Road which adjoins the landfill is unpaved. Land records at the Pulaski County Courthouse describe the plot of land as the east half of the northeast quarter of Section 28, Township 3 North and Range 10 West (EPA, 1990). Less than one-half mile east of the Rogers Road Municipal Landfill Superfund Site is the Jacksonville Municipal Landfill Superfund Site (see Figure 1). Because of the proximity of the sites and the similarities in their features and characteristics, the Site characterization and remedial action activities for these Sites were carried out concurrently.

The Rogers Road Municipal Landfill Site is located within a residential and agricultural area. The area to the north, south, and east is wooded. Rogers Road adjoins the Site to the immediate west (see Figure 1); the property beyond Rogers Road to the west is agricultural. There is a fairly high population density within one-half mile radius of the Site (approximately 51 single-family homes); while areas further out are more sparsely populated. At the time of the ROD it was assumed that approximately 153 to 204 people lived within a one-half mile radius (EPA, 1990). The ROD also stated that the landfill was located in a predominantly agricultural area, that the area did not lend itself to commercial types of development, that there were no businesses or commercial areas located within one and one-half miles of the Site, and that the types of receptors were not expected to change in the foreseeable future. Observations during the June 2000 Site inspection (see Section 6) indicate this continues to be the case.

A residential well inventory was conducted as part of the Remedial Investigation (RI) and information was collected from residences near the landfill. The City of Jacksonville installed a

municipal water system which has served the residents in the area of Rogers Road since sometime prior to 1974 (EPA, 1990). Reportedly only one residence near the Rogers Road Landfill ever used groundwater, and that household stopped using the well when municipal water was made available. The other residences were reported to have used only the City water system.

The City of Jacksonville acquired the property on September 16, 1953. Approximately half of the Site was used intermittently as a municipal waste disposal facility, in conjunction with the Jacksonville Landfill (see Figure 1), until October 1974. The landfill was closed when the Arkansas Department of Pollution Control and Ecology (ADPC&E, now Arkansas Department of Environmental Quality (ADEQ)) refused to grant a landfill permit because of the high water table and poor drainage in the area.

Records indicate that open burning and trenching with bucket and dragline were the waste handling methods used until 1974, along with open dumping and landfilling. During the years that the facility operated, the Site was run as a typical sanitary landfill and not a permitted RCRA disposal facility. As a result, companies which hauled waste to the landfill were not required to provide the Site operator with detailed information regarding generators, waste types, or quantities. No detailed records indicating specific waste types or quantities are known to have been kept by the Site owner/operator, making identification of generators and operators difficult.

Wastes appear to have been disposed of in one long trench and in several surface piles, accompanied by open dumping in numerous areas around the Site, which appear to have been covered with a layer of soil. After the landfill was closed, local residents continued to use the Site as an open dump until the Site was fenced. To prevent unauthorized access, the City of Jacksonville fenced the portion of the facility used for burning and land disposal (a 300 by 237 foot area) in 1986. Wastes from the Vertac Superfund Site in Jacksonville, Arkansas, which produced numerous chemical products including dioxins, are believed to have been disposed of at the Rogers Road Site. An estimated 15 to 50 drums of dioxin contaminated herbicide-manufacturing waste were disposed at the landfill.

The Rogers Road Municipal Landfill was identified to EPA on May 10, 1983, through a citizen's complaint. At that time, EPA was conducting a Site inspection of the Jacksonville Landfill. After a field investigation, the Rogers Road Municipal Landfill was proposed for inclusion on the National Priorities List (NPL) of uncontrolled hazardous waste sites on January 22, 1987. The Site was added to the NPL on July 22, 1987.

A Remedial Investigation (RI) was conducted between November 1988 and March 1990, and a risk assessment was performed based on the analytical findings of the RI. The results of the RI and risk assessment and prior investigations are summarized in the RI Report (Peer and Resource Applications, Inc., 1990a). The Feasibility Study (FS) was also released at this time (Peer and Resource Applications, 1990b). Onsite soil and decaying drums were found to be contaminated with dioxin (2,3,7,8-tetrachlorodibenzo-p-dioxin [TCDD] equivalents), the herbicides 2,4-D and 2,4,5-T, and the pesticide dieldrin (EPA, 1996).

The investigations undertaken at the Rogers Road landfill revealed that contaminates in the soil comprised the principal threat posed by the Site. A remedy was chosen based on the following criteria:

- Remedy the contaminated soil using thermal treatment and soil cover to ensure it no longer presents a threat to human health or the environment.

- Eliminate the health risks due to ponded water onsite by filling in the existing Site trenches with clean fill.

- Establish a method of long term monitoring to ensure that the soil cover is properly maintained and the groundwater quality is adequately monitored. (EPA, 1990)

The remedial actions undertaken to meet these criteria are described in the following paragraphs.

# 4.0 Remedial Actions

The Remedial Action completed at the Rogers Road Municipal Landfill Superfund Site included removal and incineration at the nearby Vertac Superfund Site of materials containing concentrations of dioxin above 10 parts per billion (ppb), and backfilling and regrading of the affected areas. The remedy also included placement of soil cover over materials demonstrating concentrations of dioxin between 1 and 10 ppb, concentrations of dieldrin greater than 37 ppb, and dieldrin and herbicide contamination associated with a hazard index (HI) above 0.7. A total of 200 cubic yards and 76 drums of material were removed, treated, and disposed at Vertac.

Included in the following subsections is a description of the remedy selection process employed at the Rogers Road Municipal Landfill Superfund Site, the implementation of the remedy, the Operations and Maintenance (O&M), and the progress made at the Site since initiation of remedial action and construction completion.

## 4.1 Remedy Selection

The ROD for this Site was signed on September 27, 1990. The selected remedy included:

- Excavation of contaminated soil and debris containing greater than 10 ppb equivalent 2,3,7,8-TCDD and backfilling the excavated area.
- Transportation of the excavated material to the Vertac Superfund Site in Jacksonville, Arkansas.
- Incineration of the excavated contaminated material and disposal of residuals at Vertac.
- Steam-cleaning and disposal of large items of refuse removed from contaminated areas at the Rogers Road Site.
- Covering soil, debris and water meeting the criteria stated below with twelve inches of soil:
    - 2,3,7,8-TCDD concentrations between 1 and 10 ppb
    - Cumulative HI greater than 0.7 for 2,4,5-T; 2,4,5 TP and dieldrin, or
    - Dieldrin concentrations greater than 37 ppb.
- Backfilling the Site trench;
- Institutional controls such as fence maintenance and land-use restrictions limiting groundwater use on and immediately down gradient of the Site; and
- Groundwater monitoring.

On June 20, 1994, a Consent Decree (CD) between EPA and the City of Jacksonville regarding the Site was entered in United States District Court. This CD and the CD for the nearby Jacksonville Landfill Site were the first in the country between a municipality and EPA that utilized this type of mixed work settlement. Under the agreement, EPA performed the work that involved handling the hazardous substances, including excavation of the hot spots of contamination, transporting the material to Vertac, incineration, and decontamination. The City performed the non-hazardous work, including fencing, backfilling, grading, re-vegetating, inspection and maintenance, installation of additional groundwater wells, groundwater sampling and analysis, and land-use controls.

### 4.2 Remedy Implementation

On August 22, 1994, Ecology and Environment (E&E), the EPA Technical Assistance Team (TAT) and the Emergency Response Clean-up Service (ERCS) contractor, Reidel-Peterson, mobilized to begin remedial operations at the Site. After preliminary road work was completed, excavation of contaminated soil was initiated.

During the action, Reidel-Peterson re-containerized contaminated material that was in decaying drums and excavated soil. This material, along with investigation-derived waste such as contaminated personal protective equipment, was transported to the Vertac Superfund Site for treatment at the incinerator. Confirmation soil samples were collected after this initial excavation to verify the degree of contaminant removal and to determine the areas of moderate contamination (2,3,7,8-TCDD concentrations between 1 and 10 ppb and dieldrin concentrations greater than 37 ppb) which would later be covered with clean soil.

A total of 200 cubic yards of contaminated soil and 76 drums of hazardous materials (including 19 drums of investigation-derived wastes) were transported to Vertac and incinerated. This is a higher volume than the 130 cubic yards estimated in the ROD. Despite this increase in volume, remedial activities went smoothly. Incineration at Vertac began on October 20, 1994, and ended on December 4, 1994. The January 20, 1995, Technical Assistance Report for the Rogers Road

Municipal Landfill written by E&E (E&E, 1995), details the remedial action activities performed by EPA and its contractors.

The total cost for the action was $129,070.00 for the excavation, preliminary sampling, and transportation of the waste, and $1.07 million for the confirmatory sampling and incineration at Vertac.

During the fall of 1994, the City of Jacksonville continued regrading activities and installed three additional groundwater monitoring wells between the Jacksonville Landfill and the Rogers Road Landfill as required by the ROD and CD. The City demobilized in late October when heavy rains in the area made passage through the Site difficult. City activities recommenced in July 1995 when the Site was sufficiently dry for vehicles to pass. The City regrading activities were completed in September 1995.

### 4.3 Operations and Maintenance

The City of Jacksonville, as agreed upon in the CD and accompanying SOW and as detailed in the Remedial Action Work Plan (City of Jacksonville, 1994), has assumed all responsibility for O&M at the Rogers Road Site. O&M activities include routine Site inspections to ensure that positive drainage is occurring, and maintenance of perimeter fencing. These activities maintain the protectiveness of the remedy.

The ROD specified annual groundwater monitoring for up to thirty years to ensure that the remedy was effective and operating properly (with review every five years to determine continued necessity). ADEQ assumed responsibility for groundwater monitoring, and performed the monitoring for four annual events, from 1994 to 1997. Because no Contaminants of Concern (COCs) as defined by the ROD were detected during these four events, ADEQ recommended cessation of the groundwater monitoring after the 1997 event. The EPA agreed and groundwater monitoring was suspended. An explanation of significant differences (ESD) for the Site was issued in August 2009.

## 4.4 Progress Since Initiation of Remedial Action

All remedial action construction requirements have been completed. The Site is fenced and the City of Jacksonville is controlling access to the Site and Site groundwater. ADEQ required that restrictive covenants restricting groundwater use be in place before it could provide official concurrence for deleting the Site from the NPL (ADEQ, 1999a). These restrictive covenants are the type of institutional controls contemplated in the Site ROD (EPA, 1999a). The EPA and the City could not execute and record these restrictive covenants until legal issues associated with title to the remediated area were resolved (EPA, 2000; EPA, 2000a; City of Jacksonville, 2000; EPA, 2002; EPA, 2005; EPA 2008; City of Jacksonville, 2008). With the City Attorney's facilitation and assistance, EPA prevailed on an action to quiet title to the Site property in the Circuit Court of Pulaski County, Arkansas in the Fall of 2003, eliminating confusion over the ownership of the Site property. In August 2005, the EPA Region 6 attorney and the City Attorney, with support from the EPA Office of General Counsel, initiated serious discussions with the legal heir regarding the proper form of an instrument that would grant an easement and restrictive covenants to the City, while providing a right of enforcement in EPA as a third party beneficiary to the grant. This process was completed in February 2008 when a grant of easement and restrictive covenants were signed by the legal heir and recorded with the Site deed records with Pulaski County. In July 2008, ADEQ provided the letter of concurrence to proceed with the deletion of the Site from the NPL. An ESD for the Site was issued in August 2009.

Control of groundwater use immediately downgradient of the Site is not strictly enforceable, but residents are on municipal water supply. ADEQ requested that the solid waste regulatory authority be notified of the detection of low levels of non-site-related metals in the monitoring wells that may be caused by leaching from the municipal landfill. This notification has been provided.

O&M procedures appear to be adequate, with O&M frequency being maintained per the O&M plan instituted following construction completion (reporting to EPA is not required). As discussed previously, groundwater monitoring at the Site was discontinued due to the repeated lack of detection of COCs as defined in the ROD, indicating the achievement of cleanup goals

for groundwater. The EPA has agreed with this approach. The recording of restrictive covenants that control groundwater use for the Site property should ensure that there are no pathways available for human or livestock contact with, or consumption of, groundwater from the Site.

# 5.0 Five-Year Review Process

This Five-Year Review has been conducted using the concepts found in EPA's *Comprehensive Five-Year Review Guidance*, dated June 2001, and in accordance with the guidance contained in the existing final Five-Year Review guidance documents that are listed on page 1 of this report. The EPA will make information available to the public regarding the Five-Year Review through the Rogers Road Site status summary on EPA's Region 6 website, at http://www.epa.gov/earth1r6/6sf/pdffiles/rogersrd.pdf. It is EPA's intention to advertise the availability of the Five-Year Review report in a newspaper local to the Site and on the Site status summary website referenced above, and to provide a copy of the report to the Site information repositories. The Five-Year Review consisted of interviews with relevant parties, a Site inspection, and a review of applicable data and documentation covering the period of the review. The findings of the review are described in the following section.

# 6.0 Five-Year Review Findings

The information collected during the interviews, the Site inspection, and the data review are described in the following subsections.

## 6.1 Communication/ Interview

Since restrictive covenants were placed in February 2008 under Mayor Tommy Swain, there are no issues to discuss with the new mayor, Gary Fletcher. The only remaining issue is ensuring that O&M activities are carried out at both Sites by the Jacksonville City Engineer. The RPM

had a detailed discussion with the current City Engineer, James Whisker. Mr. Whisker reported that the Rogers Road landfill was visited by himself and his staff, Tracy Keck, for inspection of fencing and maintenance. The fencing was missing a twenty foot section. However, the vegetation around the Site was so thick that it would not let anyone pass. The next week, Mr. Whisker visited the Site with Hal Toney, the Street Superintendent. The gates leading to the landfill were intact. The monitoring wells were locked.

The City Engineer visits the area every other year. However, employees from Jacksonville monitor the area on a consistent basis. Mowing and maintenance are handled every year. The cost of mowing and maintenance is approximately $3000 per year and the City has spent this amount for the last five years. No community concerns have been expressed regarding this Site since the Second Five-Year Review, in September 2005.

### 6.2 Site Inspection

A Site O&M review was conducted by the EPA RPM, Shawn Ghose, communicating with the Jacksonville City Engineer, James Whisker, in April, 2010. Mr. Ghose made a Site inspection trip on May 6, 2010. Mr. Ghose was accompanied by State (ADEQ) representatives Dianna Kilburn, Annette Cusher and Jim Moseley. Before visiting the Rogers Road and Jacksonville Landfill Sites, EPA and ADEQ representatives met with Mayor Gary Fletcher at his office at City Hall. At this meeting Mr. Whisker informed the inspection team that the 20-foot break in the perimeter fence at Rogers Road was already fixed (shown in Attachment 4). The only question posed by Mayor Fletcher regarded the difference between a deleted Site (e.g. Jacksonville) and a Site that is in the process of deletion (e.g. Rogers Road). Mr. Ghose informed him that both require Five-Year Reviews. Mr. Oakley, the City Public Works Director, suggested that the City could petition EPA to allow cattle grazing in the 20-acre perimeter area. After the meeting, EPA, ADEQ, Mr. Whisker and Mr. Oakley visited the Rogers Road and Jacksonville Sites and found the remediated soil area fenced and locked. The surrounding area appeared to be in good shape, with the common monitoring wells well-marked and accessible. Outside of the Rogers Road Site Mr. Ghose found seven residences. Mr. Ghose talked to Mr.

Lloyd of 201 Rogers Road and Joseph Atwood of 203 Rogers Road. Both were not interested in how the land was used inside the perimeter fence. The O&M review record is provided in the City Manager's letter (Attachment 2), along with an inspection report provided by the State representatives (ADEQ) and associated photographs.

### 6.3 Standards Review

Applicable or Relevant and Appropriate Requirements (ARARs) for this Site were identified in the ROD dated September 27, 1990. The First Five-Year Review included identification and evaluation of changes in these ARARs to determine whether such changes may affect the protectiveness of the selected remedy.

The ROD identified the following ARARs as having an impact on the proposed remedy:

1. RCRA Land Disposal Restrictions (LDRs), as regulated under 40 CFR Part 268.

2. Transportation of hazardous wastes, as regulated under 40 CFR Part 263 and 49 CFR Parts 107 and 171–177.

3. The operational standards and monitoring requirements for hazardous waste incinerators, as regulated under 40 CFR Part 264 Subpart O.

4. Guidance for the closure of open dumps as regulated under 40 CFR 256.23.

5. The post-closure care and monitoring requirements for hazardous waste disposal facilities as regulated under 40 CFR 264.117(a)(1).

6. Requirements to evaluate the potential impacts to flood plains as regulated under the Executive Order on Floodplain Management, Executive Order No. 11988.

The Rogers Road Landfill ROD identified the following criteria as to be considered (TBCs) for the remedial action:

1. The Center For Disease Control's (CDC's) 2,3,7,8-TCDD concentration recommendations for residential settings of 1.0 ppb in surface soil and 10.0 ppb when covered by at least 12 inches of clean fill.

2. CERCLA section 104(d)(4), which allows EPA to treat noncontiguous facilities as one where those facilities are reasonably related on the basis of geography or threat.

3. 40 CFR Part 258 (Proposed), which contains the operating, design, closure, and post-closure criteria for municipal solid waste landfills.

4. 40 CFR Parts 260, 261, 264, and 270, which contain proposed standards for owners and operators of hazardous waste incinerators.

No state ARARs were identified in the ROD.

As noted in the First Five-Year Review, hazardous waste incineration is no longer occurring as part of the Site remedy, and the 40 CFR Part 264 Subpart O regulations no longer apply to the Site. This also applies to the regulations relating to hazardous waste incineration under 40 CFR Parts 260, 261, 264, and 270. In addition, since hazardous waste is no longer being transported at the Site, the regulations at 40 CFR Part 263 and 49 CFR Parts 107 and 171-177 are no longer applicable.

At the time of the First Five-Year Review, there had been no changes to the regulations under 40 CFR 256.23 (guidance for closure of open dumps), and there had been no changes to Executive Order No. 11988 (flood plains). In addition, there had been no changes to CERCLA section 104(d)(4) (noncontiguous facilities). No promulgated changes could be found in the CDC's concentration recommendations for 2,3,7,8-TCDD in the First Five-Year Review.

In addition, the First Five-Year Review noted there had been no changes to the regulatory requirements described under 40 CFR 264.117(a)(1). This regulation requires 30 years of post-closure care and monitoring, or for another period determined by the Regional Administrator. The EPA had determined previously, based on groundwater sampling results, that the groundwater is not impacted by the COCs and that continued monitoring would not be necessary once restrictive covenants are in place at this Site. The proposed regulations under 40 CFR Part 258 were promulgated on October 9, 1991 (56 FR 51016). However, the Rogers Road Landfill met the requirements for closure as a hazardous waste landfill under 40 CFR 264.117(a)(1), and the regulations of 40 CFR 258 did not apply.

The First Five-Year Review noted EPA had promulgated changes in the LDRs with regards to the classification of contaminated soil (40 CFR 268.49, 63 FR 28602–28622). The remedy satisfies these ARAR requirements.

Based on the standards review conducted during the First Five-Year Review, it appeared that no new laws or regulations have been promulgated or enacted that would call into question the effectiveness of the remedy at Rogers Road to protect human health and the environment. No additional standards review has been conducted for this Third Five-Year Review.

### 6.4 Data Review

Since the Second Five-Year Review (September 2005) there has been no change in the O&M procedures at the Site. Therefore, the only data to be reviewed is the proper maintenance of the cap, the maintenance of proper drainage and the maintenance of the Site fence, all of which have been adequately performed by the City of Jacksonville. For details of the data review for the First Five-Year Review, please consult the First Five-Year Review (September 2000).

During the remedial action, the confirmatory sampling involved a 14 x 14 grid around all the areas that were visibly contaminated or shown to be contaminated during the remedial investigation. Sample locations that did not meet remedial action goals and all adjacent grid

locations were then re-excavated, and the entire re-excavated area was re-sampled. This process was repeated until all grid locations met remedial action goals.

As per the ROD and the CD, areas where 2,3,7,8-TCDD equivalent concentrations were greater than or equal to 10 ppb were excavated and the material was transported to Vertac for incineration. In several areas, this involved excavation deeper than the one foot projected from previous investigations. A total of 200 cubic yards of waste material was removed. Final confirmatory sampling showed that removal of this quantity of material was sufficient to meet remedial action goals. The complete results of the confirmatory sampling are given in the Technical Assistance Report for the Rogers Road Municipal Landfill (E&E, 1995). The data contained in this report demonstrates that cleanup levels specified in the ROD were achieved. The Technical Assistance Report shows that clean soil was put over areas which were non detect at 0.01 ppb or 10 parts per trillion (ppt) dioxin. Thus, protectiveness meets the newly formulated Preliminary Remediation Goal (PRG) for dioxin of 72 ppt. Outside the drum storage area no dioxin was detected according to the Remedial Investigation (RI) report. Therefore, in all probability dioxin is not present above 10 ppt.

Groundwater monitoring at the Site was conducted concurrently with the groundwater monitoring of the Jacksonville Municipal Landfill Superfund Site between 1994 and 1997. Five wells were sampled annually (MWR-01, MWR-05, MWR-08, MWR-09, and MWR-10, see Figure 1) and submitted for analysis for dioxins, metals, volatiles, semivolatiles, and pesticides. None of the compounds of concern listed in the ROD (equivalents of 2,3,7,8-TCDD, chlorophenols, herbicides, and pesticides) were observed during the four sampling events (ADEQ, 1999).

During the groundwater monitoring period of 1994 to 1997, many wells exhibited metal concentrations. These metals are not COCs associated with the Superfund portion of the Site, and are possibly associated with the municipal waste portions of the landfill.

## 7.0 Assessment

Based on the communication/interview, the Site O&M review with the City Engineer of Jacksonville, and the data review, it appears that the remedy is functioning as intended by the ROD. The assumptions used at the time of the remedy selection are still valid, and no additional information has been identified that would call into question the protectiveness of the remedy. In fact, the Technical Assistance Report shows that in the excavated and new-soil-filled area, the Site was cleaned up to 10 ppt and meets the upgraded PRG of 72 ppt for dioxin. No erosion or standing water is evident at the Site, and onsite groundwater use is currently restricted by the City of Jacksonville through control of Site access by fencing.

No COCs had been detected in groundwater during previously conducted groundwater monitoring events. Accordingly, there has been no groundwater monitoring since 1997, based upon the ADEQ and EPA concurrence with this recommendation. As noted in section 4.4, implemention of restrictive covenants controlling groundwater use was delayed due to legal questions concerning property title; however, those questions were resolved in the Fall 2003 action to quiet title. A grant of an easement and restrictive covenants was signed by the legal heir in February 2008. This instrument was properly executed and recorded in the Pulaski County records. Additionally, an ESD was published on August 2009 to reflect the cessation of long term Site groundwater monitoring. Upon the completion of these actions, EPA initiated the Site NPL Deletion process in December 2009. The O&M process should allow the Site to continue to be protective of the human health and the environment.

## 8.0 Deficiencies

No deficiencies were noted.

## 9.0 Actions Completed:

Restrictive covenants prohibiting use of groundwater for human, livestock, and agricultural consumption or contact were granted in a finalized and properly executed instrument which was recorded in the Site deed records. An ESD was issued in August 2009 to reflect the early

attainment of groundwater cleanup goals and the consequent cessation of annual groundwater monitoring. The process of deleting the Site from the NPL was initiated in December 2009.

## 10.0 Protectiveness Statement

The restrictive covenants were properly recorded in February 2008, and an ESD was issued in August 2009. Therefore, this Site meets all Site completion requirements as specified in OSWER Directive 9320.2-3C, Procedures for Completion and Deletion of National Priorities List Sites and Update. Specifically, confirmatory sampling verified that the Site has achieved the ROD cleanup standards: all contaminated soil and debris containing greater than 10 ppb equivalent 2,3,7,8-TCDD were excavated and all soil and debris with 2,3,7,8-TCDD concentrations between 1.0 ppb and 10 ppb, or with a Cumulative HI greater than 0.7 for 2,4,5-T; 2,4,5 TP and dieldrin were either excavated or covered with one foot of clean soil. In addition, no soil was left onsite with a dieldrin concentration above 37 ppb, and the Site was backfilled with clean soil. The Technical Assistance Report shows that the Site meets the upgraded clean up criteria of 72 ppt for dioxin. Groundwater monitoring conducted after the remedial action was completed provides further assurance that implementation of the remedy eliminated the source of contamination at the Site. The soil cover has been maintained since completion of the remedial action.

Because the remedial actions at the Rogers Road Municipal Landfill Site are protective, the remedy for the Site is protective of human health and the environment.

## 11.0 Next Review

Since the Third Five-Year Review was completed during August 2010, the next Five-Year Review should be completed on or before September 2015. This review should follow the O&M procedure for the Site.

**FIGURE 1 – Site Map (Shows Both Rogers One and Jacksonville Sites)**

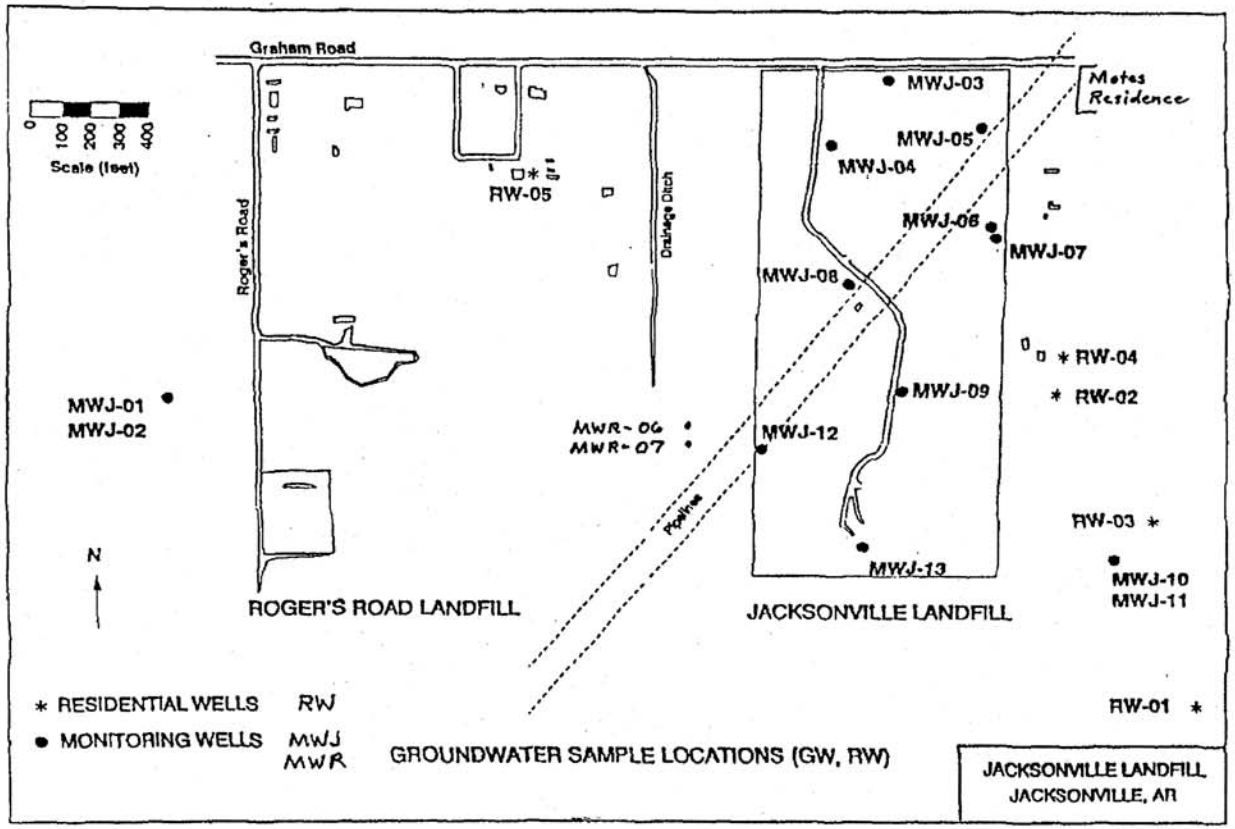


Figure 1: Site Map and Monitoring Well Network
Rogers Road and Jacksonville Municipal Landfills

Table 1
Chronology of Site Events

| Date | Event |
|---|---|
| May 10, 1983 | Site was identified to EPA by citizen complaint |
| July 22, 1987 | Site added to the NPL list with a score of 29.64 |
| November 1988- March 1990 | Remedial Investigation and Risk Assessment conducted |
| June 30, 1990 | Remedial Investigation/Feasibility Study report completed |
| September 27, 1990 | Record of Decision signed |
| August 1994 - September 1995 | Remedial Action activities conducted, start of review period |
| November 1994 | First annual groundwater monitoring event conducted. |
| November 1995 | Second annual groundwater monitoring event conducted. |
| November 1996 | Third annual groundwater monitoring event conducted. |
| November 1997 | Fourth annual groundwater monitoring event conducted; cessation of groundwater monitoring recommended due to lack of detections of site-related constituents. |
| September 2000 | First Five-Year Review Report Completed. |
| September 2005 | Second Five-Year Review Completed |
| February 2008 | Restrictive Covenants added to site deed records as IC |
| August 2009 | ESD issued for early cessation of GW monitoring |

## Attachment 1
## References


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City of Jacksonville, 2000. Letter from Robert Bamburg, City Attorney, City of Jacksonville, to James L. Turner, Senior Attorney, EPA, regarding "United States v. City of Jacksonville, United States Federal Court No. LR-C-94-196." Response to EPA's April 25, 2000, request for update regarding City of Jacksonville's progress toward establishing restrictive covenants at the Rogers Road property in support of the site's deletion from the NPL. May 3, 2000.

City of Jacksonville, 1994. *Remedial Action Work Plan for the Rogers Road Municipal Landfill Superfund Site.* September 1994.

Ecology and Environment (E&E), 1995. *Technical Assistance Report* (includes Remedial Action Sampling and Analysis Plan, Quality Assurance Project Plan, Health and Safety Plan, and Remedial Action Closeout Report). January 1995.

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U.S. Environmental Protection Agency (EPA), 1991. Structure and Components of Five-Year Reviews. Office of Solid Waste and Emergency Response (OSWER) Directive 9355.7-02. May 23, 1991.

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U. S. Environmental Protection Agency (EPA), 2000. Letter from James L. Turner, Senior Attorney, EPA, to Robert Bamburg, Attorney, City of Jacksonville, regarding "Rogers Road Landfill Superfund NPL Site". Summarizes telephone conversation regarding status of City's efforts toward establishing restrictive covenants at Rogers Road property in support of the site's deletion from the NPL. February 15, 2000.

U. S. Environmental Protection Agency (EPA), 2000a. Letter from James L. Turner, Senior Attorney, EPA, to Robert Bamburg, Attorney, City of Jacksonville, regarding "Rogers Road Landfill Superfund NPL Site". Requests update regarding City of Jacksonville's progress toward establishing restrictive covenants at the Rogers Road property in support of the site's deletion from the NPL. April 25, 2000.

U. S. Environmental Protection Agency (EPA), 2002. Letter from James L. Turner, Senior Attorney, EPA, to Robert Bamburg, Attorney, City of Jacksonville, regarding "Rogers Road Landfill Superfund NPL Site". Follow-up correspondence concerning the actions of the City of Jacksonville to quiet title on the Rogers Road property in pursuit of establishing restrictive covenants at the site in support of EPA efforts to delete it from the NPL. July 29, 2002.

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Arkansas Department of Environmental Quality (ADEQ), Ryan Benefield: Correspondence "ADEQ concurrence Regarding Deletion of Rogers Road Municipal Landfill Superfund Site From The National Priorities List". July 3, 2008

U. S. Environmental Protection Agency (EPA): Explanation of Significant Differences (ESD) for Rogers Road Municipal Landfill August 7, 2009

U. S. Environmental Protection Agency (EPA) : Public Notice by Shawn Ghose, RPM,US EPA in Jacksonville Times " Rogers Road Municipal Landfill Superfund Site Explanation of Significant Differences being issued. August 7, 2009

Peer Consultants, P. C., and Resource Applications, Inc., 1990a. Remedial Investigation Report for Rogers Road Landfill Site, Jacksonville, Arkansas. June 1990.

Peer Consultants, P. C., and Resource Applications, Inc., 1990b. Feasibility Study Report for Rogers Road Landfill Site, Jacksonville, Arkansas. June 1990.

Attachment 2

# Letter from City Engineer, Jacksonville

**CITY OF JACKSONVILLE, ARKANSAS**
www.cityofjacksonville.net

#1 Municipal Drive
Jacksonville, Arkansas 72076
ENGINEERING DEPARTMENT
Phone: (501) 982-6071 Fax: (501) 982-6439

April 16, 2010

Mr. Shawn Ghose
Environmental Protection Agency

Re: Jacksonville and Rogers Rd. Landfill

Dear Mr. Ghose,

The purpose of this letter is to convey the actions of the City of Jacksonville's actions at Rogers Road landfill and Jacksonville landfill. Tracy Keck and I inspected Rogers Road Landfill for fencing and maintenance of the area. The vegetation around the perimeter was still thick. The fencing was missing in one small area (approximately 20'), but the vegetation would not let anyone pass.

My next visit was the next week with Hal Toney the Street Superintendent. The gates leading into the landfill itself were still intact. The monitoring wells that were visited were all still locked. At the Jacksonville landfill the gates and fencing were still intact. The vegetation around the site was thick. All monitoring wells were intact with locks attached. The grass in the area had not been mowed this year. No problems were seen in the area.

In conclusion, although I have only logged a visit every other year, employees from Jacksonville monitor the sites by driving by on a consistent basis, and mowing and maintenance are handled every year. We continue to maintain the sites on a yearly basis. On average we spend 2 days mowing both sites and we do this twice during the growing season. We use 3 bush hogs to accomplish this task at a cost of $80.00 per bush hog and operator. Total cost is 2 x 16 x 80 = $2,560.00. There are other smaller projects like last year we changed a 24" drainage pipe.

If you should have any further questions please contact me at (501)-982-6071.

Sincerely,

James Whisker
City Engineer
City of Jacksonville

Attachment 3

# Interview Record Forms

| **Five-Year Review Interview Record**<br>Rogers Road Landfill<br>Pulaski County, Arkansas | | | **Interviewee: Jim Mosley**<br>Arkansas Department of Environmental Quality<br>Phone: (501) 682-0871 | | |
|---|---|---|---|---|---|
| **Site Name** | | **EPA ID No.** | | **Date of Interview** | **Interview Method** |
| Rogers Road Municipal Landfill | | EPA ID# ARD981055809 | | 5/6/2010 | via e-mail |
| **Interview Conducted by** | **Organization** | **Phone** | **Email** | **Address** | |
| Shawn Ghose | EPA Region 6 | (214) 665-6782 | ghose.shawn@epa.gov | 1445 Ross Avenue, Suite 1200<br>Mail Code: 6SF-AP<br>Dallas, Texas 75202-2733 | |

**Interview Questions and Responses**

1. What is your overall impression of the work conducted at each site since the Second Five-Year Review was completed in September 2005?

**Response:** The O&M for this site seems to be going well.

2 From your perspective, what effect have the ongoing presence of the sites had on the surrounding community? Are you aware of any ongoing community concerns or positive experiences?

**Response:** The City has not mentioned any community concerns

3. .Are you aware of any events, incidents, or activities that have occurred at either site, such as dumping, vandalism, trespassing, or anything that required emergency response from local authorities or a response from your office, since the completion of the Second Five-Year Review in September 2005? If so, please give details.

**Response:** No

4. Have there been routine communications or activities (site visits, inspections, reporting activities, etc.) conducted by your office regarding either site since the completion of the Second Five-Year Review in September 2005?

**Response:** No

5. Have there been any significant changes in the site status or maintenance requirements since completion of the Second Five-Year Review in September 2005? If so, do they affect the protectiveness or effectiveness of the remedy? Please describe changes and impacts.

**Response:** A Grant of Easement and Restrictive Covenant preventing use of site groundwater was placed on the property (Rogers' Road LF) in 2008. The Explanation of Significant Differences (ESD) was completed in August 2009, deleting the necessity of further groundwater monitoring at the Rogers' Road LF. The final deletion package has been submitted for approval. These changes verify the changes to the maintenance requirements since the Second Five Year Review. The protectiveness is increased by these changes.

6. Has groundwater use beyond the perimeter-fenced area of either site changed since completion of the Second Five-Year Review?

**Response:** ADEQ is not aware of any changes in groundwater use beyond the perimeter of the fenced area.

Attachment 4

# Site Inspection Record with Photographs

# ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY
**Official Photographic Log**

| | |
|---|---|
| **SITE NAME:** Rogers Road Superfund Site | **SITE LOCATION:** Jacksonville, AR |
| **EPA ID#:** ARD981055809 | **AFIN #:** 60-00759 |
| **PHOTOGRAPHER:** Jim Mosley | **DATE:** May 6, 2010 |

| | |
|---|---|
| **DIRECTION:** East | **SUBJECT:** Capped Landfill |

| | |
|---|---|
| **DIRECTION:** North | **SUBJECT:** Capped Landfill |

| | |
|---|---|
| **SITE NAME:** Rogers Road Superfund Site | **SITE LOCATION:** Jacksonville, AR |
| **EPA ID#:** ARD981055809 | **AFIN #:** 60-00759 |
| **PHOTOGRAPHER:** Jim Mosley | **DATE:** May 6, 2010 |

| | |
|---|---|
| **DIRECTION:** West | **SUBJECT:** Capped Landfill |

| | |
|---|---|
| **DIRECTION:** Southwest | **SUBJECT:** Capped Landfill |

| | |
|---|---|
| **SITE NAME:** Rogers Road Superfund Site | **SITE LOCATION:** Jacksonville, AR |
| **EPA ID#:** ARD981055809 | **AFIN #:** 60-00759 |
| **PHOTOGRAPHER:** Jim Mosley | **DATE:** May 6, 2010 |

| | |
|---|---|
| **DIRECTION:** South | **SUBJECT:** Southwestern MWs (MWR-1 back and MWR-2 fore) from outside fence |

| | |
|---|---|
| **DIRECTION:** East | **SUBJECT:** Low spot at North end of site |