U.S. EPA Region 6

Tar Creek Superfund Site

Ottawa County, Oklahoma

Community Involvement Plan Update

November 2014

Contents

Introduction

Under the federal Superfund program, the U.S. Environmental Protection Agency (EPA) has been conducting investigations and implementing cleanup actions at the Tar Creek Superfund Site in Ottawa County, Oklahoma for over three decades. The Superfund Community Involvement Program is committed to promoting communication between stakeholders, the public and the Agency. Having the public informed, engaged and involved are crucial to the success of any public project. This promotes effective participation and communication in the decision making process and a realistic expectation of the work that will be performed during the implementation of the remedy.

The goals of EPA's community involvement program at the Tar Creek Superfund Site are to:

- Inform stakeholders and the public about the nature of environmental issues associated with the site;
- Involve stakeholders and the public in the decision-making process by listening to their concerns and ideas, addressing them; and inviting them to help us solve major issues; and
- Keep the public informed of the progress being made to implement site remedies.

This plan also showcases results of efforts such as the reduction of blood lead levels from 21.5% in 1997 to 0% in 2013; chat sales to benefit the community; the use of job training for the community; and, work done with the stakeholders and the community to increase safer roads.

EPA had drawn on a wide variety of information sources to develop this CIP. Efforts included community interviews, discussions with stakeholders, the press, and historic site files. This latest CIP update will continue to promote communication between the stakeholders, public, and EPA and encourage community involvement in site activities. EPA will implement the community involvement activities outlined in this plan to ensure that stakeholders are continuously informed about site activities and provided opportunities to be involved in the decision-making process.

This CIP Update covers the following material:

1.1 Site Description

This section provides a brief description of the site and history, including key contamination issues and cleanup efforts completed or underway.

1.2 Community Background

The section presents a profile of the community, an in-depth look at the community's concerns about environmental issues and ways they prefer to learn about site activities and become involved in the decision-making process.

1.3 Community Involvement Action Plan

The action plan describes activities EPA will implement to engage and involve the community, tools and techniques to achieve community involvement goals and the schedule for community involvement activities.

1.4 Appendices

Located at the end of this document, the appendices include information on the Superfund Job Training Initiative (SuperJTI), the history of community involvement activities, community safety, key EPA and community contacts, and a glossary.

Site Description

2.1 Site Description and History

The Tar Creek Superfund Site is located in Ottawa County, Oklahoma. The site is the Oklahoma portion of the former Tri-State Mining Area which extended from northeast Oklahoma, through southeast Kansas, to Southwest Missouri (Figure 1).

The Tar Creek Superfund Site has no clearly defined boundaries, but consists of the areas of Ottawa County impacted by mining waste. The site covers approximately 40 square miles in Ottawa County and includes the towns of Miami, North Miami, Quapaw, and Commerce. The towns of Picher and Cardin also were part of the site, but were dissolved as part of a residential relocation and buyout effort, which is discussed in further detail in the Community Background section.

From the early 1900s through the late 1970s, Northeastern Oklahoma was mined extensively for lead and zinc ore. The milling process for these materials produced waste mine tailings, known locally as "chat." Over the years, the mining companies disposed of the chat by collecting it into large aboveground piles, and by dumping it into flotation or tailing ponds. Mine and mill wastes found at the site are typically located adjacent to the former mines concentrated near the former town of Picher, but are also scattered throughout the rest of Ottawa County.

Today, land uses include agriculture, residential, light industry, commercial activities or businesses, and recreational and tourism uses, with agriculture being the dominant land use.

Extensive lead and zinc mining began in the early 1900s. Mining ceased in the region by 1970. With few exceptions, the crude ore produced at the site was mined using underground mining methods. In order for the mines to operate, groundwater from the Boone aquifer was continually pumped out of the mines. When the mines closed and pumping stopped, the mines began refilling with groundwater. The metal bearing minerals, which had reacted with oxygen during mining, were more soluble than they had been. This led to the formation of highly mineralized acid mine water when groundwater returned to the previously pumped areas.

The Tar Creek site first came to the attention of the State of Oklahoma and EPA in 1979, when acid mine water began to discharge from mine shafts and bore holes to Tar Creek, a small stream that runs from Kansas through the Oklahoma mining area and the City of Miami, discharging into the Neosho River. Mine water discharges have severely impacted Tar Creek as an aquatic warm water habitat. The acid mine water has contaminated the shallow groundwater and surface water in the area with iron, sulfate, lead, and cadmium.

These problems and the potential for mine water contamination of the deeper Roubidoux aquifer, the area's public water supply, via abandoned un-plugged deep water supply wells prompted the formation in 1980 of Governor Frank Keating's Tar Creek Superfund Task Force to study the acid mine impacts. On July 27, 1981, EPA proposed to have the Site added to the Superfund National Priorities List (NPL) based on information from the Task Force's investigations. The NPL is a listing of sites with known or threatened releases of hazardous substances, pollutants, or containments throughout the United States and its territories that is compiled by EPA pursuant Section 105 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).

After completion of a remedial investigation/feasibility study (RI/FS) showed elevated concentrations of metals (cadmium, lead and zinc) in the mined areas of Ottawa County, the Site was added to the NPL on September 8, 1983.

For more than 30 years, EPA has been conducting investigations and implementing remedies to address contaminated soil, surface water, sediments and groundwater. Due to the complex nature of contamination

associated with the Site, remediation has been handled through various removal response actions and remedial actions (RAs). Cleanup activities are often focused into specific portions of the site or types of environmental media, referred to as Operable Units, or OUs. OU is a term for each of a number of separate activities undertaken as part of a Superfund site cleanup. The cleanup activities performed for the Tar Creek site include:

- Plugging abandoned wells and constructing dikes to reduce acid mine drainage to Tar Creek and protect the Roubidoux aquifer, a drinking water source, from contamination (OU1).
- Removing contaminated soils from more than 2,576 properties including residential yards, buyout properties, parks, schools, alleyways and driveways (OU2).
- Removing mining chemicals abandoned in a facility once owned by Eagle Picher, one of the mining companies that had operated in the area (OU3).
- Removing chat, a lead-contaminated byproduct of mining activities, from properties and facilitating the sale of marketable chat. Cleaning up mine and mill residue, smelter waste, and flotation ponds (OU4).
- Examining the nature and extent of contaminated sediments in Elm Creek and Tar Creek and their tributaries and other streams found within the Site (OU5).

2.2 Cleanup activities improve health and support local economy

Children playing on a chat pile at the Tar Creek site.

Public health and the local economy have directly benefitted from Superfund activities in Ottawa County.

Children's rapidly developing nervous systems are particularly sensitive to the effects of lead. Lead exposure can harm children's mental development. Blood lead tests conducted in August 1996 and September 1996 found that 38.3 percent (31 of 81) of the children tested in the community of Picher had blood lead concentrations exceeding 10 micrograms per deciliter (µg/dL), that 62.5 percent (10 of 16) of the children tested in Cardin had blood lead concentrations exceeding 10 µg/dL, and that 13.4 percent (9 of 67) of the children tested in Quapaw had blood lead levels which exceeded 10 µg/dL. EPA undertook immediate action to address contaminated soil in the residential yards, driveways and alleyways, schools, and parks that comprise OU2, and blood lead levels of children living on the site have decreased dramatically. A report by the Agency for Toxic Substances and Disease Registry (ATSDR) showed that children between the ages of 1 and 5 living at the Tar Creek site who had a blood lead level in excess of the 10µg/dL level decreased from 31.2% in l996 to 2.8% in 2003. By 2013, the levels had decreased to 0.6% which is below the CDC levels. More information on this accomplishment is contained in Appendix A.

Finally, to acknowledge the positive impact the OU2 cleanup has had on public health, EPA coordinated a Milestone Recognition Event on September 22, 2014. The event recognized the efforts of the cities, towns, groups and individuals who participated in the OU2 clean-up. More than 50 people attended, including members of local news media. The event received national news media coverage. Although clean-up work at OU2 is considered finished, EPA has transitioned the clean-up efforts to ODEQ for any remaining properties.

Along with improving children's health, EPA's cleanup efforts have benefitted the local economy through facilitation of chat sales and job creation. As part of the RA planning process for chat found in piles and bases on rural properties throughout the site, the chat is sampled and the results shared with potential chat buyers through a "chat sales website," and directly with known local chat purchasers. No property or owner details are shared by EPA with potential chat buyers either directly or through the website. If a potential chat buyer lets EPA know they have an interest in buying the chat, EPA notifies the owner with the potential chat buyer's contact information, and at that point it is up to the chat owner to negotiate a sale (EPA does not get involved in chat sales).

Once a sale is negotiated and remediation activities have begun at the property, EPA will transport locally the purchased chat to the buyer without charge. The remainder of the chat not sold and other source materials on the property are transported by EPA to the Central Mill Repository located on East 40 Road. Many factors are considered by chat purchasers when determining whether to buy chat, how much of the chat to buy, and what price to pay, including the results of a sieve analysis, specific gravity, lead content, and presence of vegetation or other debris in the chat. The characterization process was determined by EPA with input from chat purchasers to ensure they would have the information they need to make their decision. The chat buyer also typically has a representative onsite during the cleanup who will determine when to discontinue purchasing chat from the property (as the quality of the chat decreases toward the bottom of a pile or base).

Since the beginning of EPA's cleanup of chat piles and bases under OU4, over 280,000 tons of chat has been purchased by local chat purchasers and transported by EPA to their locations. Chat owners are paid directly by the chat purchasers for this chat.

Job creation is another component of this project's positive impact on the local economy. EPA worked with project contractors to plan and implement the Superfund Job Training Initiative (SuperJTI) in Northeast Oklahoma. SuperJTI provides job-readiness training and employment opportunities for underserved citizens living in communities affected by Superfund sites. The Tar Creek program generated 250 interested candidates of which 26 were selected for training. A number of graduates were hired by project contractors and others are awaiting the award of new contracts with hopes of being hired. For more information about the success of the SuperJTI program at the Tar Creek site see Appendix B.

The OU4 remedial action has provided economic benefits to the local community beyond the sales and marketing of chat. The local staff utilization on the project is over 75% of the construction labor, and over 98% of the construction subcontract awards have been made to small disadvantaged businesses that are local to the area. These workers are also helping the local economy by spending funds with local vendors.

Finally, EPA worked with local schools, public officials, other agencies, and the community to put forth a "Safety First" program for citizens to establish routes for truck traffic during construction phases of the project. This included signage and a campaign to ensure all citizens were aware of the routes. Please see Appendix C for more information on this program.

2.2.1 Memorandum of Understanding for Interagency Cooperation

A Memorandum of Understanding was signed in May 2003 between the EPA, the DOI, and the U.S. Army Corps of Engineers. The Memorandum provides for a coordinated response to environmental contamination, physical safety concerns (open mine shafts, subsidence, and flooding), and poor economic conditions at the Tar Creek area. Other participants include the U.S. Fish & Wildlife Service, the U.S. Geologic Survey, the U.S. Bureau of Indian Affairs, and the Tribes.

2.3 Cleanup Activities

After the site was added to the NPL, EPA and the State of Oklahoma initiated a number of remedial investigations (RI) and identified five Operable Units, or OUs, at the Tar Creek site. Under the National Contingency Plan, an OU is defined as a discrete action that comprises an incremental step towards

comprehensively addressing site problems. This discrete portion of a remedial response manages migration, or eliminates or mitigates a release, threat of release, or pathway of exposure. A site can be divided into a number of OUs, depending upon the complexity of problems at the site. OUs typically address a discrete geographical portion of the site, specific site problems, contaminated media and the initial phase or phases of action at a site.

The following five OUs have been designated at the Site:

- OU1 – surface water/groundwater
- OU2 – residential properties and high activity areas such as schools and parks
- OU3 – Eagle-Picher Complex – Abandoned Mining Chemicals
- OU4 – Chat piles, mine and mill residue, smelter waste, and flotation ponds
- OU5 – Sediments/Surface Water

The following are brief descriptions of the five OUs at the Site.

2.3.1 OU1: Surface Water/Ground Water

In 1984, EPA issued its first Site Record of Decision (ROD). The 1984 ROD addressed two concerns which are now referred to as OU1: 1) the surface water degradation of Tar Creek, a stream located on the Site, by the discharge of acid mine water; and 2) the threat of contamination to the Roubidoux Aquifer, a drinking water source. Pursuant to EPA's 1984 ROD, dikes were constructed to reduce the inflow of surface water to certain mine shafts on the Site, to reduce the outflow of acid mine drainage from the subsurface to Tar Creek. In addition, abandoned wells that went through the Boone Aquifer to the deeper Roubidoux formation were plugged to prevent contamination from the Boone from seeping through cracked well casings and reaching the Roubidoux, a drinking water source. Abandoned wells that could threaten the Roubidoux are still being discovered and plugged as part of the After Action Monitoring Program for OU1.

OU 1 - View of the Muncie site dike

OU 1 – Admiralty diversion dike

2.3.2 OU2: Residential Areas

In 1994, Indian Health Service test results concerning the blood lead levels of Indian children living on the Site indicated that approximately 35 percent of the Indian children tested had concentrations of lead in their blood exceeding 10 micrograms per deciliter (µg/dL). In August 1994, to address the threat of lead exposure to children, EPA began sampling soils at High Access Areas (HAAs) on the Site such as day cares, schoolyards, and other areas where children congregate. EPA sampled 28 HAAs between August 1994 and October 1994. The sampling detected significant concentrations of lead, cadmium, and other heavy metals in surface soils. In March 1995, EPA expanded its sampling activity to include all residences on the Site.

In 1995, EPA began to excavate contaminated soil at HAAs and at Site residences using its removal action authority. Concurrently, EPA began a Remedial Investigation/Feasibility Study for Site residential areas, referred to as Operable Unit 2 (OU2). In 1997, EPA issued a ROD to address contaminated soil in the residential areas of OU2. Under the removal actions and under the OU2 ROD, EPA has excavated lead-contaminated soil at more than 2,000 homes and properties. The remediation of the yards and the public areas and the education and outreach programs implemented by the Ottawa County Health Department are helping to protect the children's health. This is confirmed by the blood lead levels in Site children that have decreased dramatically.

EPA is conducting final work on residential properties and is obtaining access agreements to complete residential yard cleanup efforts. The main focus is on chat in driveways and alleyways located within Ottawa County.

OU2 – Town of Afton Driveway Excavation

OU2 – City of Miami Restored Alleyway

In May 2004, the State of Oklahoma implemented a relocation program for families with children under the age of seven. At the request of U.S. Senator James Inhofe, the U.S. Army Corps of Engineers conducted a study that found that a third or more of the homes in the area have varying degrees of collapse potential due to extensive historic mining under the towns of Picher, Cardin, and Hockerville. A public Trust established by the State of Oklahoma implemented a voluntary relocation for properties in Cardin, Picher, and Hockerville that are impacted by potential subsidence. The Trust offered residents to voluntarily apply for relocation under conditions established by the State Legislature in May 2006. This effort has been completed and a Closeout Report was completed by the Oklahoma Department of Environmental Quality (ODEQ) on November 23, 2011.

Drawings done by local children to thank workers for cleaning up their family's yard.

2.3.3 OU3: Eagle-Picher Office Complex

OU3 consisted of an emergency removal from the Eagle-Picher field offices and workshop in Cardin, Oklahoma. The Bureau of Indian Affairs (BIA), along with the Quapaw Tribe, requested and received assistance from EPA for the removal action. EPA removed 117 containers filled with numerous laboratory chemicals. The removal action was completed in 2000.

2.3.4 OU4: Mine and Mill Waste, and Smelter Waste

On December 9, 2003, the EPA signed an Administrative Order on Consent (AOC) with three Potentially Responsible Parties (PRPs), including the Department of the Interior (DOI), Blue Tee Corporation, and Gold Fields Mining Corporation, to conduct the Remedial Investigation/Feasibility Study (Remedial Investigation/Feasibility Study) for OU4. Under the terms of the AOC, the EPA prepared the risk assessments for OU4 based on data collected by the PRPs and EPA.

A three-phased Site Reconnaissance was conducted from March 29 to April 28, 2005. During the Site Reconnaissance, field characterization of the mine and source materials was conducted and sampling sites for the Remedial Investigation were selected with concurrence of EPA, the ODEQ, the Quapaw Tribe and other participating organizations. Field sampling and investigations were conducted in May and concluded in October 2005.

During the course of the investigation, EPA performed a pilot of several field studies regarding sub-aqueous chat and fine disposal, to supplement the Feasibility Study efforts. Under this pilot, EPA injected the source material into flooded mine cavities to determine whether this could be a cost-effective disposal technique. In another pilot under the Remedial Investigation/Feasibility Study, DOI, with the cooperation of the Quapaw Tribe, is promoting responsible chat sales, using Best Management Practices to reduce the volume

of millions of tons of mining waste. Both pilots, Indian-owned chat sales and the disposal of chat in mine cavities, were response action alternatives considered in the Feasibility Study.

The OU4 ROD, which was signed in February 2008, addresses the source materials, rural residential yard contamination, transition zone soil contamination, and contamination in water drawn from rural residential wells. The selected remedy also includes relocation, which will continue to be implemented by the Lead Impacted Communities Relocation Assistance Trust (LICRAT), and chat sales. Though EPA does not own any chat and does not purchase or sell chat, it will assist chat sales participants as part of EPA's CERCLA remedy.

EPA issued an Explanation of Significant Differences to the OU4 remedy in February 2010 that included residential and business properties in Treece, Kansas, in the voluntary buyout.

The remedial action for Operable Unit 4 is well underway. The removal of mine and mill waste in distal areas, where access has been granted, started in January 2010. Removing and reducing the footprints of this waste is enabling property owners to increase the use of their land. Also, working in the distal areas allows chat sales within the core area to continue and contribute to the reduction of the footprint of chat. To date, over 250,000 tons of contaminated material has been removed and more than 500 acres reclaimed for reuse.

OU4 – Distal 7 South property during cleanup

OU4 – Distal 7 South property after cleanup

The demolition of the homes purchased in the towns of Picher, Cardin, and the Hockerville began on January 24, 2011, and has been completed. ODEQ described this work in a Closeout Report issued November 23, 2011.

2.3.5 OU5: Sediments

To address the concerns of the State and the Tribes for the sediment and surface water downstream of the central mining area, OU5 is examining the nature and extent of contaminated sediment in Elm Creek and Tar Creek starting at the confluence of Tar Creek and Lytle Creek to the Neosho River down to the point where it flows into Grand Lake. EPA Region 6 is working with EPA Region 7 as part of a multi-state effort to characterize sediment and surface water throughout the spring and Neosho River basins.

2.3.6 Quapaw Tribe Performing Catholic 40 Cleanup

On October 1, 2012, a Cooperative Agreement was signed between EPA and the Quapaw Tribe of Oklahoma to perform remedial action work at the "Catholic 40". The Catholic 40 is a 40-acre tract of land owned by the Quapaw Tribe that has cultural and historical significance.

Historical structures include remnants of a Catholic Church and school constructed in 1893. The remedial action will involve the excavation, hauling, and disposal of approximately 107,000 tons of source material or chat.

Extra precautions have been taken during these activities in the areas near the historical structures to prevent damage. The remedial action will also include restoration (for example, contouring, seeding) of the Site and bank stabilization of Beaver Creek to ensure the integrity of the remedy. Beaver Creek also has cultural and historical significance to the Quapaw Tribe.

The completion of the remedial action by the Quapaw Tribe in accordance with the Record of Decision for OU 4 will enhance the Tribe's technical capacity to perform work under the Superfund program. Other Tribes may express an interest in performing work similar to the remedial action work being performed by the Quapaw Tribe at the Catholic 40 property.

2.4 Five-year reviews

Under the statutory requirements of Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and its implementing regulation 40 CFR § 300.430(f)(4)(ii), every five years, EPA is required to review sites it has addressed under Superfund where hazardous substances remain on-site above concentration levels that allow for unrestricted use and unrestricted exposure. Three five-year reviews have been performed at the Tar Creek Site. The first was completed in April 1994, the second five-year review was completed in April 2000, the third review was completed in September 2005, and the fourth review was completed in September 2010. The most recent Five-Year Review Report is available online at http://www.epa.gov/region6/6sf/oklahoma/tar_creek/ok_tar_creek_4th-5yr_review.pdf

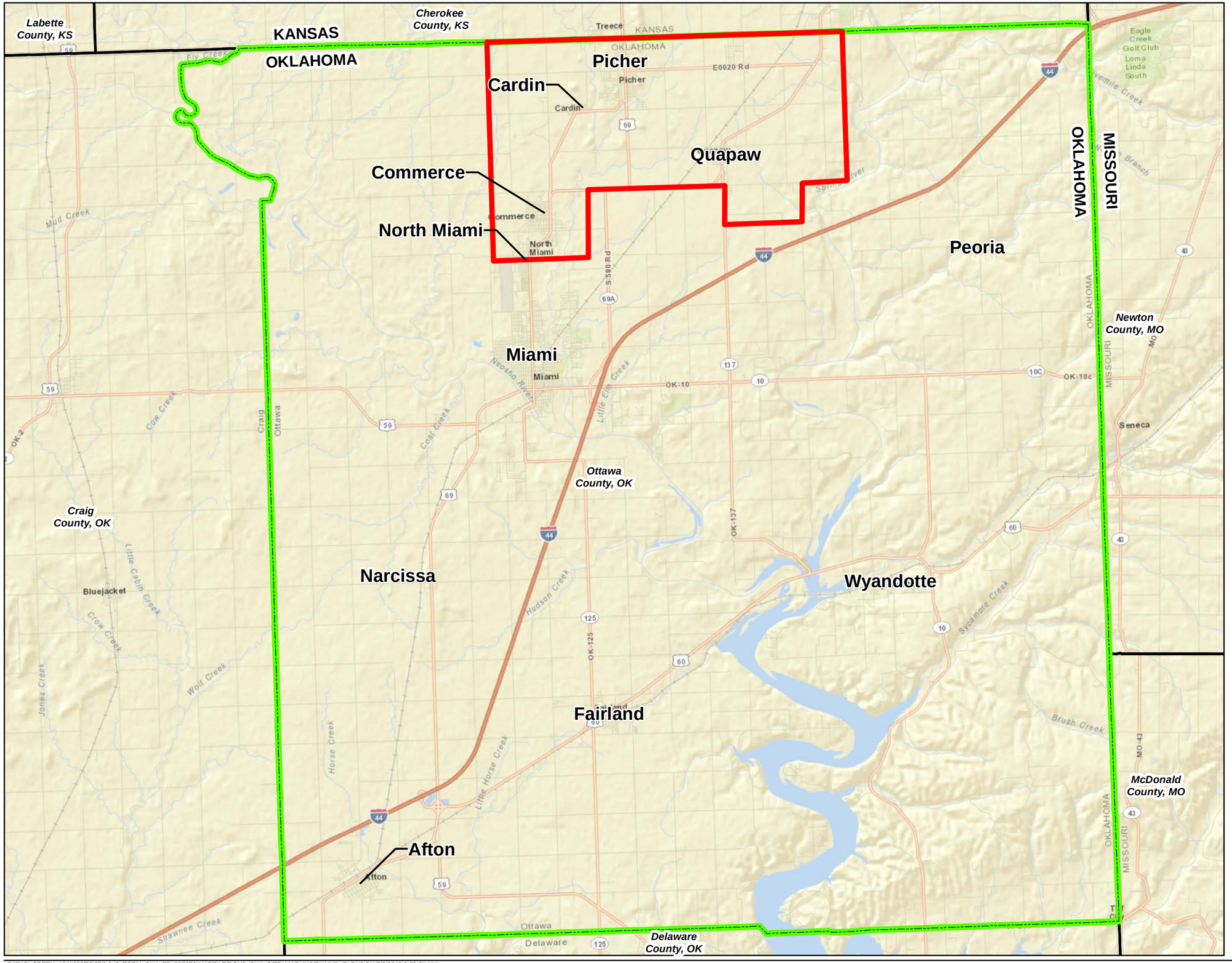

Figure 1
Site Location Map
Tar Creek Superfund Site
Ottawa County, Oklahoma

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Community Background

3.1 Community Profile

The population of Ottawa County is 32,236 according to the U.S. Census population estimates for 2013. However, only a portion of the county is included in the area designated as the Tar Creek Superfund Site. The primary communities that have been affected are Commerce, Quapaw, North Miami, Picher, Cardin, and Hockerville. Picher, Cardin and Hockerville were part of the voluntary buyout of properties and are currently uninhabited. The county seat, Miami, population 13,737, is on the southern edge of the site.

Land ownership in the area is private, government, or Indian owned. On Bureau of Indian Affairs (BIA) maps from 1959, approximately 20% of the overall site was owned by Indians. However, a higher percentage, 50%, of land with mining wastes on the surface is Indian-owned.

Almost 30 percent of the land in Ottawa County is undeveloped. Primary land use is agricultural including crop farming, mushroom nurseries, and pasture grazing. Industrial activity includes plastics manufacturing, animal feed production, and boat and motor home production. Commercial activity is composed primarily of small businesses. Residential areas include privately owned housing, government housing, and tribal housing.

Recreation in the area includes hunting, fishing, golf, softball, and soccer. There are a number of school and community recreational ball fields located in the area. Commerce is widely known as the boyhood home of baseball Hall of Fame player, Mickey Mantle. The Grand Lake of the Cherokees is located in the southeastern portion of Ottawa County. This lake is a widely used recreational area with swimming, boating, and other outdoor activities.

The population of the area is culturally diverse. A number of Indian Tribes are represented in the population. According to U.S. Census data, 19 percent of Ottawa County's population as being American Indian. Tribal headquarters for several tribes, including the Quapaw, Ottawa, Peoria, Seneca, Wyandotte, and Modoc Tribes are located in the area. For some tribal members, English is a second language. Pow Wows and other Tribal activities are important community aspects for Tribal members.

The Northeaster Tribal Health System maintains a medical facility that serves Tribes in the area in Miami. The facility's medical/nursing department provides medical services for Tribal members that include general examinations, routine checkups, health screenings, health education, and care of common medical conditions.

Ottawa County is economically depressed when compared to other areas in the State. According to the U.S. Census Bureau American Community Survey 2008 – 2012, 21.2 percent of the population of Ottawa County is below the poverty level. Median household income was $36,280 per year. Poverty levels and median income for the State of Oklahoma are 16.6 percent and $44,891.

The top five major manufacturers in the area include J-M Farms, Inc. and J-M Foods, Inc., Tracker Marine Group, 4-Satellite Mushroom Farms, and Newell Coach Corporation. The top five non-manufacturing employers are the Downstream Casino & Resort, Integris Baptist Regional Health Center, the Eastern Shawnee Tribe, the Peoria Tribe and Wal-Mart, Inc.

3.2 History of Community Involvement

Throughout the history of the Tar Creek Superfund Site, EPA, in coordination with the Oklahoma Department of Environmental Quality (ODEQ), the Quapaw Tribe, and other tribal, local, state and federal government agencies, has kept the community, public, governmental entities, citizen advisory groups and

interested parties informed of Superfund response actions, and involved these groups in the decision-making process.

The EPA uses a variety of methods to inform communities about site activities at the Tar Creek Site, and to seek their participation in the Superfund process. Activities have included:

- Sending fact sheets to individuals on the site mailing list. The mailing list includes residents and business owners, local, state and federal officials, and other interested parties who have requested information or who have attended public meetings. Fact sheets are also posted on the Tar Creek Site website. See Appendix D for an example of a fact sheet about chat removal activities and EPA's outreach to property owners at OU4. EPA Region 6 staff shared the fact sheet with property owners who had questions about removal work done on their land and with Oklahoma U.S. Senator Tom Coburn, U.S. Senator James M. Inhofe and U.S. Representative Markwayne Mullin (Congressional District 2).
- Holding a Chat Users Workshop in August 2008 and a Chat Marketing Workshop in June 2010 in Asphalt Contractors from the Four State regions attended these one-day workshops to learn about new opportunities for purchasing Chat for use in asphalt mix. Leaders from the industry, State officials and the U.S. EPA answered questions and discussed the beneficial use of Chat, managing chat use to be protective of public health and the environment, and approaches to purchasing and using chat. Legal issues about the use of chat was also discussed with the participants.
- Publishing public notices in the *Miami News Record*, and *Joplin Globe*, if needed. Notices also were provided to stakeholders, including the Quapaw Tribe and LEAD Agency, for posting on websites and social media sites.
- Participating in informal community meetings and open houses, public meetings, and workshops
- Individual outreach through EPA's toll free number, door-to-door visits with property owners
- Providing information on all aspects of the cleanup of the Tar Creek Site via EPA's and stakeholders' websites and social media sites

Community involvement activities have been underway at the site for more than 30 years. Appendix E provides a detailed look at the community involvement efforts that have been conducted at this site since the CIP was last updated in 2007.

3.3 Key Community Concerns

As part of the research for this CIP, EPA staff have discussed community issues, concerns and information needs related to the Tar Creek Superfund site during on-going contacts with many residents, tribal officials, public officials, community leaders, business people, and other members of the community. Most recently, in October 2014, EPA's Community Involvement Coordinator conducted telephone interviews with tribal officials, ODEQ staff, community leaders and site workers. For the 4th Five-Year Review, EPA conducted interviews with members of the community who are knowledgeable about the cleanup activities at the site.

These interviews provided community members with opportunities to ask questions, voice their opinions and concerns about site activities and issues, and learn more about the Superfund program. Feedback from these community members provided the foundation for the community involvement activities and tools presented in Section 4 – Community Action Plan.

The following summarizes the results of information obtained from these interviews combined with feedback from meeting participants and ongoing contacts with community members.

Historically, concerns focused primarily on the effect of high blood lead levels on the health of residents, especially young children; potential impacts to the community' water supply; the dangers of subsidence caused by abandoned underground mines, and issues surrounding the relocation of residents of Picher, Cardin and Hockerville.

More recently concerns include:

- Exposure to site contaminants in surface water, possibly at Commerce, due to mine water discharges.
- The potential for site contaminants to affect groundwater quality in the area
- The length of time required to clean up the site
- Children playing on chat piles and the potential for subsidence on or near the Commerce High School grounds.
- Signage is needed to warn visitors and local residents not to swim and fish in the waters, play on the chat piles, or eat vegetables grown near chat bases and other contaminated areas.
- Traffic safety issues from large haul trucks traveling on local roads during construction activities for the OU4 cleanup
- Availability of funding to continue cleanup work, especially on restricted properties
- Funding to continue blood lead monitoring of local children by the Ottawa County Health Department
- Potential liabilities associated with chat sales and compliance with the Chat Rule
- Potential impacts to groundwater and streams from the injection of mine waste (tailings) <I'm not sure exactly what this means
- Continuing the SuperJTI program that provides jobs for local residents
-

3.4 Response to Community Concerns

In response to community concerns, EPA will continue to communicate information about the site, investigation results, remedial actions, and proposed actions to the public using a variety of methods that include:

- Public meetings and, availability sessions to update residents on the progress of cleanup activity and address community concerns in a timely manner
- Fact sheets, information bulletins, websites, social media, and news media releases to local newspapers and radio and television
- Public comment periods and public notices
- Toll-free Superfund information line
- Email and postal mail lists
- Information Repositories

A detailed description and chronology of public outreach efforts since the CIP was last updated can be found in Appendix E.

EPA's Community Involvement Program

The overall goal of EPA's community involvement program is to promote two-way communication between citizens and the EPA and to provide opportunities for meaningful and active involvement by the community in the cleanup process. It is important to maintain open communications among ODEQ, EPA, the tribes and those who live near the site, as well as local, state, and federal government agencies and officials, community leaders and other interested individuals or groups. This will ensure that the community members have ample opportunity to voice opinions and receive answers to their questions. The following plan is based on the results of the community interviews described earlier; it addresses issues that were identified as being important to the community.

4.1 The Plan

EPA has continued the Community Involvement Program throughout the Superfund process at the Tar Creek Superfund site. The program addresses concerns and issues of importance to community members and fosters communication between the agency and those interested in the site. The Superfund program emphasizes the importance of community involvement, and the Community Involvement Program ensures that citizens have ample opportunity to voice opinions and receive answers to their questions.

4.1.1 Community Involvement Objectives

The objectives of EPA's Community Involvement Program are to:

- Maintain open communication between EPA and residents, tribal leaders, community leaders, business leaders, environmentalists, local, state and Federal government agencies and officials, and other interested persons or groups. This communication was established early in the Superfund process, and is being maintained during the duration of the cleanup.
- Provide residents, tribal interests, agencies, local officials, civic leaders, media, and other interested persons or groups with accurate, timely information about the Superfund process, the progress of the cleanup, and other crucial technical and administrative matters. This gives community members the tools they need to provide meaningful input into the decision-making process.

The following activities will be implemented to achieve EPA's community involvement objectives.

4.1.2 Ongoing Interaction with Community Members

While remedial activities at the site progress, EPA staff will maintain regular contact with members of the community by phone and in person. EPA staff can participate at local community events, such as the annual Tar Creek conference hosted by the LEAD Agency, and provide periodic briefings for elected officials, and other tribal, community, and civic leaders to keep them abreast of ongoing site activity. Contact information for EPA Region 6 personnel for the Tar Creek Superfund Site can be found in Appendix F.

EPA Region 6 has designated a CIC to handle site inquiries and serve as a point of contact for community members. The CIC serves as a primary liaison between the community and the EPA to ensure prompt, accurate, and consistent responses and information dissemination about the site. Currently Janetta Coats is the EPA CIC assigned to the site. She works closely with Ursula Lennox, Robert Sullivan, Rafael Casanova, and Katrina Higgins-Coltrain, EPA's Remedial Project Managers for the site.

4.1.3 Public Meetings and Community/Stakeholders meetings

EPA will conduct informal community meetings as needed and when requested by interested parties. More formal public meetings will be conducted, if needed, to announce proposed plans and obtain public comments. The meetings will provide residents, agencies, local officials, civic leaders and media with accurate, timely information about the technical and administrative aspects of the cleanup and provide opportunities for community members to provide meaningful input into the decision-making process. EPA

technical and community involvement staff will attend to provide information, address concerns, and answer questions. Contact for tribal and local, state and federal officials can be found in Appendix F.

Meetings have been held at the Miami Civic Center, Quapaw Tribal Complex, Picher-Cardin High School, Commerce High School, Picher Housing Authority, the Ottawa County Courthouse, and the First National Bank Community Room in Miami. Invitations to public meetings are sent to the mailing list, published in the local newspapers as advertisements, and promoted from the EPA Public Affairs division.

4.1.4 Fact Sheets

EPA will develop fact sheets as needed to provide citizens with current, accurate, easy-to-read, easy-to-understand information about the Tar Creek Superfund site. Fact Sheets are mailed to everyone on the Tar Creek Superfund Site mailing list. The mailing list includes residents and business owners, local, state and federal officials, and other interested parties who have requested information or who have attended public meetings. Fact sheets produced since 2007 also are posted on the Tar Creek Site website.

4.1.5 Toll Free Superfund Hotline

EPA's Superfund Hotline is available 24-hours a day to enable citizens to get the latest information available when they want it, rather than having to wait for a meeting or a fact sheet. The toll-free number is 1-800-533-3508. It is publicized on all community outreach materials.

4.1.6 Mailing List

EPA maintains a mailing list for the site that contains 1,080 entries. The mailing list includes residents and other individuals or groups interested in or affected by the site. EPA updates the mailing list periodically and adds new contacts via fact sheets, newspaper articles, and community meetings. Stakeholders who prefer electronic delivery receive their documents via email.

4.1.7 Information Repositories

Information repositories for the Tar Creek Superfund site are maintained at the following locations:

Miami Public Library
200 N. Main
Miami, OK 74354
(918)541-2292

Oklahoma Department of Environmental Quality
Land Protection Division
707 North Robinson
Oklahoma City, OK 73101
(405)702-5100
(405)702-5101 fax

U.S. Environmental Protection Agency
1445 Ross Avenue
Dallas, Texas 75202-2733
(214) 665 6427/1-800-533-3508 (Please call for an appointment if you desire to review the file)

4.1.8 Site and Superfund information on the Internet

Resources for information about Superfund and hazardous waste issues and the ASL site in particular can be found on the internet at these EPA websites:

Information about the Tar Creek Superfund site can be found at the following links:

- Site Status Summary: http://www.epa.gov/region6/6sf/pdffiles/tar-creek-ok.pdf

- Project Background, important documents, including Proposed Plans, Records of Decision, and five-year review reports, and other information about EPA activities at the site:

  http://www.epa.gov/Region6/6sf/oklahoma/tar_creek/index.htm

Information about EPA and Superfund can be found at:

- EPA Headquarters: http://www.epa.gov
- EPA Region 6: http://www.epa.gov/earth1r6
- EPA Region 6 Superfund Division: http://www.epa.gov/earth1r6/6sf/6sf.htm

4.1.9 Establish and maintain the Administrative Record

EPA maintains two sets of the Administrative Record for the site, one in the EPA Region 6 offices located at 1445 Ross Avenue, Dallas, Texas and one located at the ODEQ Information Repository. The Administrative Record contains all information EPA used to make decisions on the selection of response actions under the Superfund program.

4.1.10 Public Comment Period

EPA will provide community members with opportunities to review and comment on various EPA documents, especially Proposed Plans. This provides the citizens with meaningful involvement in the process and also provides the site Team with valuable information for use in making decisions. Comment periods will be announced, if needed. A comment period is required in conjunction with the announcement of a Proposed Plan or Amendment to a Record of Decision and will last a minimum of 30 days.

4.1.11 Public Notices

Public notices will be published as display advertisements in a news section of the *Miami News Record* and, if needed, the *Joplin Globe* to announce important information including public comment periods, invitations to meetings, holiday work schedules and haul routes for construction vehicles.

4.1.12 Responsiveness Summary

If needed, EPA will prepare a Responsiveness Summary as a section of a Proposed Plan or an amended Record of Decision. The Responsiveness Summary will include four sections: 1. Overview; 2. Background on Community Involvement; 3. Summary of comments received and Agency responses; 4. Remedial Design/Remedial Action concerns. All information, both technical and non-technical, will be conveyed in a manner that is easily understood. The Responsiveness Summary serves to summarize comments received during comment periods, to document how the EPA has considered those comments during the decision-making process, and to provide responses to major comments.

4.1.13 Technical Assistance Grant

TAGs are awarded by EPA to community groups affected by NPL sites or sites proposed for the NPL where a response action is underway. EPA awards these grants for community groups to obtain independent technical experts to help in interpreting technical site information, including public health, redevelopment, and site reuse options.

TAGs are available at any time during the Superfund process. Only one TAG at a time can be awarded per site. Therefore, EPA encourages community groups to form a coalition to apply for a grant so that the group best represents the diversity of community interests. Initial awards of up to $50,000 per site are available. EPA's TAG Web site is at http://www.epa.gov/superfund/community/tag/

4.1.14 Schedule of Community Involvement Activities

ACTIVITY	TIME FRAME
Ongoing Contact with Community Members	Ongoing
Designate an EPA Community Involvement Coordinator (CIC)	Immediately/completed
Public Meetings and Community/Stakeholders meetings	As needed
Fact Sheets	As needed for major project milestones, to keep stakeholders updated about site activities
Provide a toll-free "800 number" for the community to contact EPA	Currently in operation
Maintain a mailing list for the site	Ongoing
Establish and maintain Information Repositories	Established, update as needed
Provide site and Superfund information on the Internet	Currently available; update as needed
Establish and maintain the Administrative Record	Established, update as needed
Solicit comments during a Public Comment Period	As needed and required
Public Notices in local newspapers	To announce public comment periods, inform stakeholders about important site-related information
Prepare and issue a Responsiveness Summary	Following public comment periods
Technical Assistance Grant	Any time during remedial activities
Revise the Community Involvement Plan (CIP)	As needed, at least every 3 years

4.1.15 Revision of the Community Involvement Plan

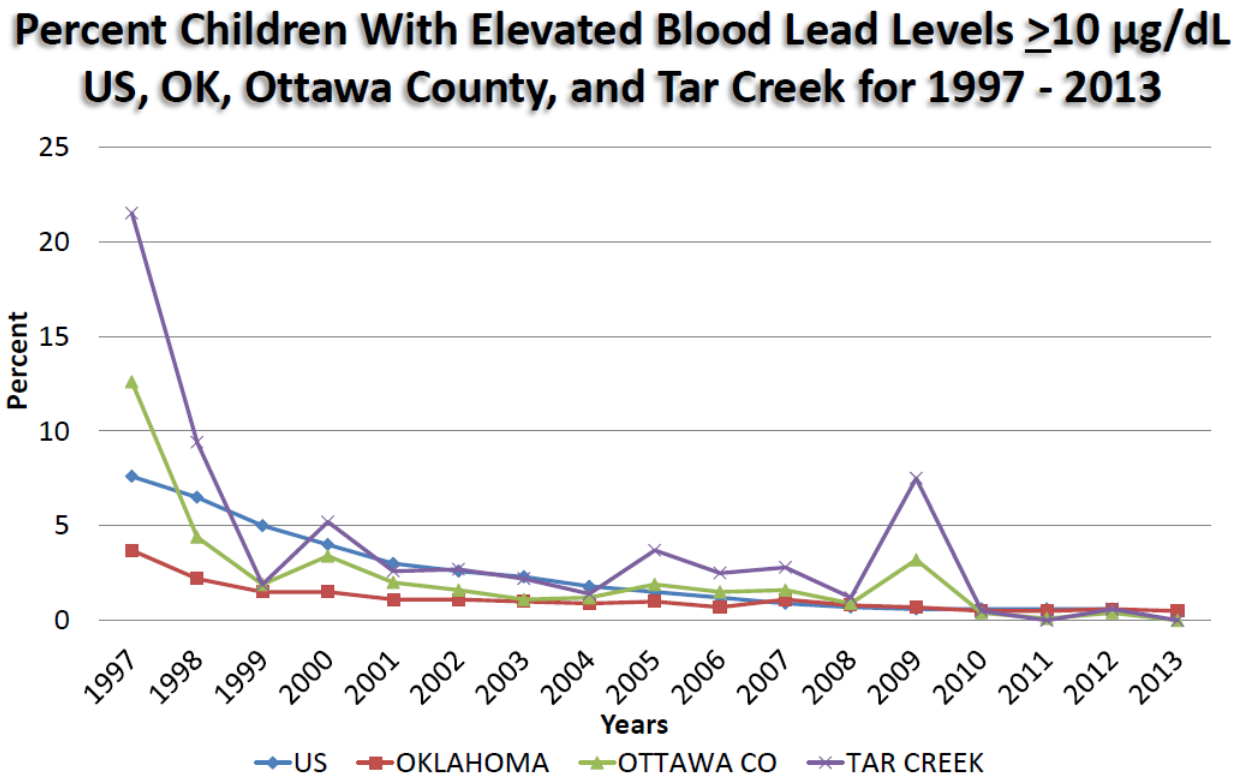
EPA will update the information presented in this version of the CIP to address changes in community concerns and information needs as the Superfund process progresses. The CIP will be revised as community concern warrants or at least every three years until the site is closed out.

Appendices

Appendix A
Blood Lead Level Reductions in Ottawa County Children

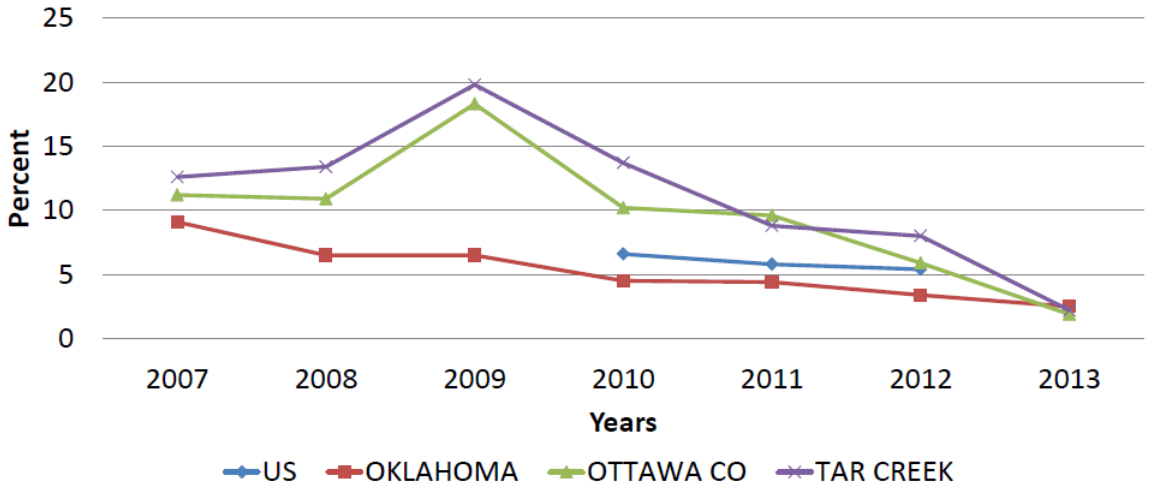
Children's Blood Lead Levels in Tar Creek and Ottawa County Markedly Decline from 1997 to 2013

Cleanup activities carried out under Operational Unit 2 Residential Properties Remedial Action of the Tar Creek Superfund Site since 1997 have been major contributors to creating a healthier environment and protecting human health in Tar Creek and Ottawa County. Approximately 2,887 residential yards and public properties in Ottawa County have been remediated since the inception of cleanup activities under the Residential Properties Remedial Action. With funding from EPA, initially through ATSDR in 1998 and more recently through the Oklahoma Department of Environmental Quality, the Ottawa County Health Department has provided ongoing community health education to families and the public on childhood lead poisoning prevention and blood lead screening of children from 6 months to 6 years of age residing in Tar Creek and Ottawa County. During this time period, significant reductions have occurred in blood lead levels of children residing in Tar Creek and Ottawa County.



For Tar Creek, the percentage of children screened with elevated blood lead levels (≥10 µg/dL) declined from 21.5% in 1997 to 0% in 2013. For Ottawa County, the percentage of children screened with elevated blood lead levels (≥10 µg/dL) declined from 12.61% in 1997 to 0% in 2013. By comparison, the percentage of children screened with elevated blood lead levels (≥10 µg/dL) for the State of Oklahoma ranged from 3.7% in 1997 to 0.5% in 2013 and for the United States ranged from 7.6% in 1997 to 0.6% in 2012 (most recent year reported).

Percent Children With Elevated Blood Lead Levels ≥5 µg/dL US, OK, Ottawa County, and Tar Creek for 2007 - 2013



In May 2012, the Centers for Disease Control and Prevention (CDC) established 5µg/dL as the reference level for children with an elevated blood lead level. Based on a retrospective analysis of Oklahoma's blood lead surveillance data, the percentage of children screened residing in Tar Creek with elevated blood lead levels (≥5µg/dL) declined from 12.6% in 2007 to 2.2% in 2013. For Ottawa County, the percentage of children screened with elevated blood lead levels (≥5 µg/dL) declined from 11.2% in 2007 to 1.9% in 2013. By comparison, the percentage of children screened with elevated blood lead levels (≥5 µg/dL) for the State of Oklahoma declined from 9.1% in 2007 to 2.5% in 2013. Nationally, the percentage of children screened with elevated blood lead levels (≥5 µg/dL) declined from 6.6% in 2010 to 5.4% in 2012.

While much has been accomplished since 1997 to make the Tar Creek Superfund Site and Ottawa County a healthier environment for children and families through cleanup efforts under Residential Areas Operable Unit 2 and, more recently through Operable Unit 4 (Chat Piles, Other Mine and Mill Wastes, Smelter Wastes), almost 2% of children screened in Ottawa County for lead poisoning in 2013 continue to have elevated blood lead levels based on the current reference level. In order to sustain the improvements achieved through these cleanup efforts and further reduce the risk of childhood lead poisoning in Tar Creek and Ottawa County, it is important that current initiatives to provide community health education on prevention of childhood lead poisoning and enhanced opportunities for blood lead screening of children be maintained.

Oklahoma Childhood Lead Poisoning Prevention Program
1000 NE 10th Street, Room 711
Oklahoma City, OK 73117-1299
Phone: 405.271.6617
Email: oklppp@health.ok.gov

Source: CDC's National Childhood Blood Lead Surveillance Data 1997 – 2012 Oklahoma State Department of Health Childhood Blood Lead Surveillance Data 1997 - 2013

Appendix B
Superfund Job Training Initiative (Super JTI)

Where Can I Learn More About The SuperJTI Program?

For more detailed information, please visit the SuperJTI website at:

www.epa.gov/superfund/community/sfjti

Or contact the SuperJTI Program Managers:

EPA Regions 1-5
Melissa Friedland
(703) 603-8864
friedland.melissa@epa.gov

EPA Regions 6-10
Viola Cooper
(415) 972-3243
cooper.viola@epa.gov

Additional EPA Resources

EPA Home:
www.epa.gov

EPA Community Involvement Program:
www.epa.gov/superfund/community

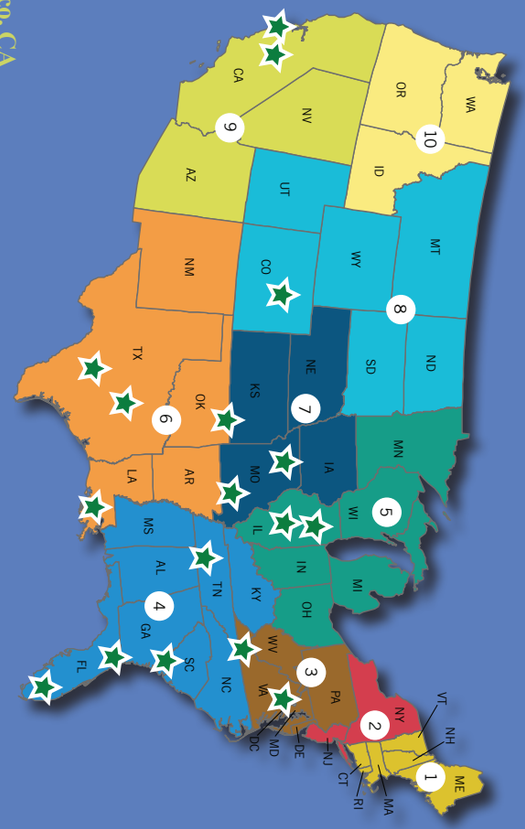
EPA Community Advisory Groups (CAGs):
www.epa.gov/superfund/community/cag

EPA Technical Assistance Grants (TAGs):
www.epa.gov/superfund/community/tag

EPA Technical Assistance Services for Communities (TASC) Contract:
www.epa.gov/superfund/community/tasc

Successful SuperJTI Sites

ABEX Corp., Portsmouth, VA
Agriculture Street Landfill, New Orleans, LA
Douglas Roads, Mishawaka, MO
Dutch Boy, Chicago, IL
Fort Ord, Monterey, CA
Jacksonville Ash, Jacksonville, FL
Kerr-McGee, Chicago, IL
Many Diversified Interests, Inc., Houston, TX
North Denver, Denver, CO
RSR Smelter, Dallas, TX
Savannah River Site, Aiken and Allendale, SC
Tar Creek, Miami, OK
Taracorp, Granite City, MO
Tennessee Products, Chattanooga, TN
Washington Navy Yard, Washington D.C.
Young Community Developers, Inc., San Francisco, CA



EPA 540-FS-09-00

EPA
United States
Environmental Protection
Agency

The Superfund Job Training Initiative

Does your community need jobs and job training?

If so, the Environmental Protection Agency's Superfund Job Training Initiative can help!

U.S. Environmental Protection Agency
Superfund Job Training Initiative

EPA

www.epa.gov

THE SUPERFUND JOB TRAINING INITIATIVE

Making a *Difference* in Communities




What Is The Superfund Job Training Initiative?

The Superfund Job Training Initiative (SuperJTI) is an environmental remediation job readiness program that provides free training and employment opportunities for citizens living in communities affected by Superfund sites.

The Superfund program uses its experience working with communities to create partnerships with local businesses, universities, labor unions, community and social service organizations, and other federal agencies to address local workforce issues. EPA's goal is to help communities develop job opportunities and partnerships that remain long after a Superfund site is cleaned up.

EPA offers SuperJTI training through its Technical Assistance Services for Communities (TASC) contract, which provides independent educational and technical assistance to communities affected by Superfund sites.

How Can SuperJTI Benefit My Community?

Through the SuperJTI program, EPA and its partners can make the most of resources and expertise to help citizens living in communities affected by Superfund sites.

SuperJTI benefits communities by:

- Increasing understanding of site conditions and cleanup efforts.
- Providing individuals with marketable skills that enhance employment potential.
- Enabling community members to play active roles in the protection and restoration of their neighborhoods.
- Providing assistance with job placement.

SuperJTI combines classroom instruction with hands-on training exercises for each participant. SuperJTI graduates have the technical skills to work on a broad range of projects in environmental remediation and construction as well as the cleanup of Superfund sites.

What Are SuperJTI's Accomplishments?

Approximately 400 trainees nationwide have participated in SuperJTI. Graduates of SuperJTI have been placed in a variety of jobs.

- Dump truck drivers
- Environmental technicians
- General production operators
- Heavy equipment operators
- Material handlers
- Radiological control inspectors

Approximately 80 percent of trainees from previous SuperJTI programs have been placed into jobs.

Visit the SuperJTI website at: www.epa.gov/superfund/community/sfjti

Appendix C
Traffic Safety Outreach in the Community

Tar Creek Superfund Site
Ottawa County, Oklahoma
EPA Enhances Safety with *NEW* Truck Haul Route

April 18, 2012

In early February 2012, the U.S. Environmental Protection Agency (EPA) and its contractors began cleaning up mining wastes–commonly known as chat – from five locations about two miles east of Quapaw, in the vicinity of the intersection of East 50 Road and 630 Road. Cleanup involves excavating chat and hauling it in large trucks to a repository on East 40 Road.

Safety is first and foremost for us. As part of our commitment to your safety, the route loaded trucks take when leaving the excavation areas will be changed to reduce the likelihood of accidents. Beginning in mid-April 2012, loaded trucks delivering waste to the repository will exit the excavation areas on East 50 Road at Highway 69A. Trucks will travel west on Highway 69A to 560 Road and travel north to 565 Road, where they will travel NE to East 40 Road. At the intersection of 565 Road and East 40 Road, trucks will travel east to the repository. ***The route for empty trucks returning to the excavation areas from the repository will not change.***

Please be aware of the potential to encounter large trucks on roadways and drive cautiously.

One of the haul trucks that drivers may encounter on Ottawa County roads.

The map on the inside pages of this flyer show the location of the chat removal areas and the truck routes to and from the repository.

All haul trucks working on our projects will have speed restrictions for dump trucks lower than posted speed limits, roadside warning signs, and lighted/flashing signs at critical intersections.

A lighted message board warns motorists about truck traffic on local roadways.

If you witness unsafe driving by any project trucks on these routes, please call 918.674.1164 with the time, location, and the name of the company that is located on the door of the trucks. Your feedback is appreciated.

For more information about construction activities and traffic safety, contact the Tar Creek Project Office at 918.674.1164.

Additional information about cleanup efforts at the Tar Creek Superfund Site can be found online at *http://www.epa.gov/region6/6sf/oklahoma/tar_creek/index.htm*

Legend

- Approved Haul Route from Distal 6 Site to the Repository
- Approved Return route from the Repository to Distal 6
- Railroad
- Road
- Creek
- Chat Removal Area (Distal 6)
- Haul Route Intersects RR
- Stop Sign Installed
- Trees Obstruct View
- Truck Crossing
- Trucks Entering

N

0 1,250 2,500 5,000 Feet

Haul Route for Current Removal Area (Distal 6)

Tar Creek Superfund Site
Operable Unit No. 4
Ottawa County, Oklahoma

CH2MHILL

HOU \\HOLLISTER\PROJ\TAR_CREEK\R6R2-043_TCSM_OU4_FR_395950\MAPFILES\HAUL_RD_ROUTE_DISTAL_6_SAFETY_FLYER.MXD FLONDON 4/17/2012 4:08:58 PM

Electronic warning signs placed at dangerous intersections to warn motorists about heavy truck traffic on the roadways.

Tar Creek Superfund Site – Operable Unit 4
Ottawa County, Oklahoma
EPA Announces Truck Haul Routes for Work at New Locations East of Quapaw
June 2013

The U.S. Environmental Protection Agency (EPA) and its contractors are continuing the cleanup of mining wastes–commonly known as chat. Cleanup involves excavating chat and hauling it in large trucks to a repository on South 40 Road. Work will begin soon on three parcels of land located east of Quapaw. Two parcels, called "Distal 7 South", are located on East 620 Road between South 620 Road and South 630 Road. The third parcel, called "Distal 7 North," is located on South 630 Road between South 40 Road and South 50 Road.

***Safety is our top priority*.** Beginning in late-June 2013, loaded trucks will use the following routes to deliver waste to the repository and return to the chat removal areas:

Distal 7 Haul Route

To Repository (located on East 40 Road):

- South on 630 or 620 Road to West on 50 Road
- West on 50 Road to Scale
- West on East 50 Road to Hwy 69A
- West on 69A/50 Road to North on 560 Road
- North on 560 Road to North on 565 Road
- North on 565 Road to East on 40 Road
- East on East 40 Road to Repository

Return Trip to Sites:

- Repository to East 40 Road
- East on East 40 Road to Hwy 69
- North on Hwy 69 to East 20 Road
- East on East 20 Road to 610 Road
- South on 610 Road to East 40 Road
- East on East 40 Road to 620 Road (or 630 Road for Distal 7 North)
- South on 620 Road (or 630 Road for Distal 7 North)

Please be aware of the potential to encounter large trucks on roadways and drive cautiously. Trucks may be traveling on Ottawa County roads Monday through Friday from 7 a.m. until 5:30 p.m. and possibly on some weekend days. All haul trucks working on our projects will have speed restrictions for dump trucks lower than posted speed limits, roadside warning signs, and lighted/flashing signs at critical intersections. ***Please comply with the warning signs, for your safety and the safety of others.***

If you witness unsafe driving by any project trucks on these routes, please call 918.674.1164 with the time, location, and the name of the company that is located on the door of the trucks. Your feedback is appreciated.

For more information about construction activities and traffic safety, contact the Tar Creek Project Office at 918.674.1164. Additional information about cleanup efforts at the Tar Creek Superfund Site can be found online at ***http://www.epa.gov/region6/6sf/oklahoma/tar_creek/index.htm***

We thank you, the school superintendent, the school bus drivers, and the community for your continued support throughout the year as we work together to clean up Tar Creek site wastes and improve the community.

Newspaper advertisement published in the Miami News Record

UPDATED!

Tar Creek Superfund Site Safety Notice
EPA Announces *NEW* Truck Haul Route for Chat Removal
April 18, 2012

In early February 2012, the U.S. Environmental Protection Agency (EPA) and its contractors began cleaning up mining wastes–commonly known as chat – from five locations about two miles east of Quapaw, in the vicinity of the intersection of East 50 Road and 630 Road. Cleanup involves excavating chat and hauling it in large trucks to a repository on East 40 Road.

Safety is first and foremost for us. As part of our commitment to your safety, the route loaded trucks take when leaving the excavation areas will be changed to reduce the likelihood of accidents. Beginning in mid-April 2012, loaded trucks delivering waste to the repository will exit the excavation areas on East 50 Road at Highway 69A. Trucks will travel west on Highway 69A to 560 Road and travel north to 565 Road, where they will travel NE to East 40 Road. At the intersection of 565 Road and East 40 Road, trucks will travel east to the repository. **This new route information is updated from the previous postcard dated April 12, 2012.**

The route for empty trucks returning to the excavation areas from the repository will not change. **Please be aware of the potential to encounter large trucks on roadways and drive cautiously.**

All haul trucks working on our projects will have speed restrictions for dump trucks lower than posted speed limits, roadside warning signs, and lighted/flashing signs at critical intersections.

Placards will be placed on all project trucks and vehicles listing the project office number to call to report unsafe driving. If you witness unsafe driving by any project trucks on these routes, please call 918.674.1164 with the time, location, and the name of the company that is located on the door of the trucks. Your feedback is appreciated. For more information about construction activities and traffic safety, contact the Tar Creek Project Office at 918.674.1164.

In the near future, a full color map - including the new truck route - will be distributed to the Tar Creek site mailing list and be available online at:
http://www.epa.gov/region6/6sf/oklahoma/tar_creek/index.htm

EPA
United States
Environmental Protection
Agency

Region 6
1445 Ross Ave. (6SF-VO)
Dallas, TX 75202

Postcard sent to 1,100 people on the Tar Creek Mailing List

Appendix D
Chat Activities Removal Fact Sheet

U.S. EPA Region 6
Tar Creek Superfund Site – Operable Unit 4
Project Update for Property Owners – Cleanup Process Overview
May 2013

The U.S. Environmental Protection Agency (EPA) signed a Record of Decision (ROD) in 2008 to address contamination from historical mining operations which include chat piles, mine and mill wastes, and smelter wastes. One of the components of the ROD outlined a remedy to address source materials. "Source material" means mine and mill waste including chat, fine tailings, overburden, development rock, smelter waste, and other tailings. These materials originated from the mining of lead and zinc deposits found in the lower to middle intervals of the Boone Formation, which is comprised of limestone, dolomite and chert, along with lesser quantities of sandstone and shale. The native soil in the area sometimes includes significant quantities of chert and other rock fragments originating from the bedrock.

Source material is generally found on the ground surface in chat piles, chat bases (the area once occupied by a chat pile), smelter wastes, and tailings ponds. EPA's primary concern is the contaminants these wastes contain, specifically lead, zinc, and cadmium. These metals are identified in the ROD as "contaminants of concern" or COCs.

In January 2010, EPA began cleaning up source materials from properties throughout Ottawa County. This project update describes the typical excavation, removal, disposition, and restoration activities performed at each property where chat and contaminated soil is cleaned up. It also contains information on activities not included in the cleanup process.

Before Cleanup Begins

Once EPA has identified a property requiring cleanup and the owner, or owners, if there is more than one owner, have provided access, a number of activities are implemented, that include the following:

- Samples of chat are collected and analyzed to evaluate the potential for the chat to be reused.
- A property inspection is performed to physically locate areas of source materials, subsidence features, mine shafts, cased borings, historically or culturally significant items or areas, other features (for example, existing ponds, wells), and other remnants of mining activities.
- The property is surveyed to document the existing terrain of the ground surface and source materials present on the property to better define the quantities of materials to be cleaned up in accordance with the ROD. Property boundary and surveys of significant features such as mine features, fields or pastures, and forested areas are also performed to confirm property lines and to quantify the areas that will be affected by the cleanup effort.
- Other types of surveys may be performed as needed to support the cleanup effort.
- Health and safety-related hazards and potential engineering controls are also evaluated in regards to access, excavation, and safe transport to the designated destination in accordance with federal, state, and local government agency requirements to ensure project compliance.

Typical Removal and Disposal Activities

The cleanup of a given property typically includes the excavation and removal of all source materials identified within its boundaries. The exception to this is in cases where mine features present at the property pose risk of being a nuisance or safety hazard during remediation. Such features would include mine shafts, borings, cased borings, and subsidence features. For larger features, such as shafts and subsidence features, source materials from the property (almost exclusively chat and development rock) may be used to backfill the areas to grade rather than removing the source material from the property, with the property owner's permission. These backfilled features are then covered with an earthen cap, surveyed at an approved frequency for subsidence settlement, and monitored. Cased borings that are identified during construction are plugged in accordance with the procedure approved by the EPA. Occasionally, certain cased borings that are connected to the mine room are kept open and accessible if they are identified to be used for water monitoring.

Haul roads into and out of the property are routed based upon an agreement between the property owner and EPA's cleanup contractor. If a road currently exists on the property and can be used successfully

during remediation, the road will be used. If not, new limestone haul roads are constructed to provide for equipment access to the source material areas on each property. In cases where existing chat roads are used, they are the last source material removed from the property.

If the property owner desires, the constructed limestone roads can either be removed once the cleanup is complete, or left in place if the owner desires. Existing gates, fencing, or any other items may be left in place or temporarily removed to perform the work. Once work is completed, these items are reinstalled in the same quantity, length, and so forth. Any items damaged during site activities are repaired.

Prior to removal, chat processors in the area determine whether they would like to purchase the material. If so, the processor engages directly with the property owner to establish a sales agreement. If not, the material is disposed in the repository or, if appropriate, on the property of origin to backfill subsidence or mine features.

Transition zone (TZ) soil, fine tailings, chat, and development rock piles are typically loaded directly to the haul trucks using an excavator or front-end loader. In instances of extremely large piles, a dozer is often used to move chat to the excavator/loader to maintain a fixed excavation and load-out point at the property. The excavated source material is transported to the repository, or to a chat processor if a sales agreement has been signed for the material.

Once the soil below the source materials has been exposed, the surface terrain is surveyed to develop a baseline for subsequent soil excavation. The soil below and adjacent to where the source materials were located is sampled in approximate 1-acre grids to determine whether or not remediation goals (RGs) for the COCs lead, zinc, and cadmium are exceeded in the first 12 inches below existing ground surface. Based on the sample results, soil below and adjacent to the source materials may be removed to either 6 or 12 inches below ground surface if the test results indicate that the COC level is above the RG value. If the test results indicate that the COC level is below the RG value, the soil is not excavated. The excavated contaminated soil is transported by truck to the repository. After removal of the soil, another survey is conducted to confirm that the correct amount of material, both horizontally and vertically, was excavated. Quality control inspection checks and documentation are in place to confirm that the remediation was performed as required. Likewise, health and safety-related requirements are evaluated and implemented at all times to ensure that the project is operating safely.

Typical Restoration Activities

Upon successful completion of excavation, a property restoration plan is developed, first in a conceptual format for approval of the property owner and EPA, and then a final, detailed plan for delivery and implementation. Where minimal soil excavation has occurred, and sufficient soil is present above bedrock, the property can usually be regraded to promote surface water drainage by slight modification of the surrounding land. In other instances, and with the prior approval of the property owner and EPA, an onsite borrow pond may be designed elsewhere on the property to provide a source of backfill materials to achieve the native grade of the property to the extent possible. If a borrow pond is constructed, the material from that pond used to backfill and grade the property is likely to be mostly clay, and low in organic content because of the nature of the soil present in Ottawa County. Prior to use, EPA's contractor collects a sample of the soil for agricultural analysis by Oklahoma State University (OSU). OSU then provides recommendations for adding organic amendments to that soil to establish grasses. Following addition of those organics to the top of the graded soil, several grass seed mixtures are discussed with the property owner prior to placement on graded and capped areas (including filled mine shafts, filled subsidences, and source material consolidation areas). For vegetated areas, the OSU Extension Service typically recommends an initial application of 4 tons of mushroom compost per acre, but because the topsoils in Ottawa County tend to be shallow (6- to 8-inches deep), if the topsoils are excavated to remove contamination, this initial organic amendment application must be followed with annual applications of organic soil amendments by the property owner for several years to help restore the vegetation capacity of the subsoils remaining.

After Construction and Site Restoration

Upon completion of construction and site restoration, a prefinal inspection is held with the property owner, EPA, and other stakeholders. A list of items that need to be completed (a punch list) may be generated during the prefinal inspection, as applicable. Once the punch list items (if any) have been corrected or addressed, a final inspection is held with the property owner(s), EPA, and other stakeholders. During the inspection

process, the property owner(s) is also briefed on the work completed on the property such as the quantity of materials removed or consolidated onsite, number of features addressed, and any institutional controls that will be put in place, with accompanying maps and postconstruction maintenance recommendations. Once all punch list items are addressed, the property owner signs off on the work that was completed and resumes responsibility for maintaining their property.

At any location where source materials have been placed or consolidated and capped, including in mine shafts or subsidences, EPA monitors the site for settlement and the condition of the cover vegetation for the first year following the construction completion, at which time EPA determines if the remedial action is operational and functional (O&F). In areas where source material is capped in place, institutional controls designed to protect the caps are established through deed notices. EPA and the Oklahoma Department of Environmental Quality (ODEQ) work with the property owner throughout the process to ensure protective measures are maintained.

Every 5 years, EPA reviews conditions at each property where source materials have been placed or consolidated and capped. If conditions are not found to be protective of human health or the environment, appropriate actions are taken. The property owner can use the capped areas within certain restrictions (institutional controls) confirmed by EPA at construction completion (these restrictions may include not tilling below 6 or 12 inches below grade [depth to be determined based on final cap thickness], protecting the capped area from digging, and/or not driving over the capped areas during wet conditions when ruts might cause damage to the cap). ODEQ will file a deed notice on such properties to assure current and future property owners are aware of the applicable restrictions. After the first year, the site specific conditions and repairs are the responsibility of the property owner(s).

What is Not Included in Property Restoration

As captured in the ROD, excavated areas will not be backfilled with offsite borrow soil. However, regrading of excavated areas may be performed using available soil on the property.

Surface water and ground water are not addressed under Operable Unit 4, except indirectly by eliminating some of the sources of surface water and ground water contamination.

Site conditions, including the presence of chat, unstable structures, and subsidence features, determine whether or not EPA removes reinforced structures (for example, concrete mill foundations). Typically, buildings and reinforced structures are not removed.

Property Restoration Notes

The Taloka silt loam is the most common soil series present at the site. Soil typically found just below the existing surface in northeast Oklahoma is very low in organic content. Chert and other rock fragments may also be present in significant quantities. During site restoration, this clayey soil is likely to be present at the surface following final grading activities. EPA's contractor amends the soil one time, based upon OSU Extension Service recommendations (typically with 4 tons per acre of mushroom compost), at the initial seeding to introduce organic matter to the soil and to establish grasses. The property owner(s) needs to amend the soil from that point forward to slowly build up organic content. Spreading compost and manure or decaying grass are ways for the property owner to get organic matter to increase. When grass grows, then dies and decays, this increases the organic matter naturally. If grass or crops are removed (for example, for use as hay) then little organic matter is produced. The property owner should continue to apply organic matter over the years and leave as much residue behind as possible to build organic content.

This soil may also be high in salts, so the future use of the soil will benefit from rain events. The more rain received, the more salts leach out of the soil. In this case, turning the soil is not recommended. Bermuda is typically the best grass type because it can tolerate this type of soil better than other grasses.

Healthy pasture land vegetation is not established immediately after installation. Rather, it takes time, and years of active maintenance and care to obtain the desired cover. To fulfill and maximize the return on the above investments, the property owner must provide annual maintenance. This includes timely applications of fertilizers and weed control, as well as additional soil testing to evaluate the effectiveness of the program. Also, mowing or brush hogging should be performed on a routine basis, especially if grazing by cattle or other farm animals is not occurring. This is necessary to help control plant growth, prevent weeds, and allow beneficial plants access to adequate sunlight.

For More Information

If you have questions about the cleanup taking place at your property, contact Ursula Lennox, Operable Unit 4 Remedial Project Manager at 214-665-6743 or 1-800-533-3508 (toll-free). Additional information about the Tar Creek Superfund site can be found on the Internet at: http://www.epa.gov/region6/6sf/oklahoma/tar_creek/index.htm.

Appendix E
History of Community Involvement

History of Community Involvement

EPA has conducted a variety of community outreach activities in response to the community's specific information needs.

Below are community involvement activities that have been conducted since the CIP was last updated in 2007.

Tar Creek Operable Unit 2 Community Outreach – 2007 through 2013		
Community Outreach Activity	**Date**	**Outreach Details**
Congressional Delegation Updates	Ongoing	Periodic contacts to keep Oklahoma's U.S. Senators and Congressman apprised of work underway and progress being made at OU2.
OU2 Milestone Recognition Event	September 22, 2014	Event recognized the cities, towns, groups, and individuals in Ottawa County that participated in cleanup efforts. Media packages and a media advisory were developed and provided to the local radio, newspaper and television stations. Key stakeholders received commemorative plaques, and all attendees received a bookmark containing event details.
Progress report on remedial action activities	September 2014	Update stakeholders on the progress of remedial activities at OU2 and OU4.
Christmas/New Year's Holiday Schedule	December 2013	Notification, combined with OU4, of reduced work schedule for the Christmas and New Year's holidays. Published in the *Miami News Record* December 19, 2013. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
Thanksgiving Holiday Schedule	November 2013	Notification, combined with OU4, of reduced work schedule for the Thanksgiving holiday. Published in the *Miami News Record* November 24, 2013. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
Update on OU 2 Activities – PowerPoint Presentation	September 19, 2013	Presentation by EPA Remedial Project Manager at the 15th National Tar Creek Conference
Updated flyer for Worker Notification	March 2013	Updated previous flyer used to inform residents when workers will be working on their yards/alleyways.
Updated flyer for Alleyway Cleanup	March 2013	Updated previous flyer that informs residents about the yard remediation and provides information on who they can contact for more information, get signed up for sampling and websites.
Christmas/New Year's Holiday Schedule	December 2012	Notification, combined with OU4, of reduced work schedule for the Christmas and New Year's holidays. Published in the *Miami News Record* December 21,

		2012. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
Availability Session	December 4, 2012 and December 6, 2012	Two sessions, combined with OU4. Notification fliers sent to mailing list on November 21, notice published *in Miami News Record* on November 21, 2012. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media. Work done under TO 008-Remedial Multi-Sites CI.
Thanksgiving Holiday Schedule	November 2012	Notification, combined with OU4, of reduced work schedule for the Thanksgiving holiday. Published in the *Miami News Record* November 18, 2012. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
City of Miami Status Presentation	February 6, 2012	
Alleyway cleanup flyer to leave at properties undergoing cleanup to provide detailed schedule for the work	Begin November 2011	Used for the duration of the project.
Certified Mailings to property owners seeking access	October 2010 through June 2012	Three mailings to 135 property owners. 14 access agreements were obtained and three properties denied access.
Do Not Enter Job Site Safety Mailer	September 2011	Outreach to mailing list warning residents not to go onto job site. Combined with OU4 field work. Also provided information on how to inquire about employment, as some of the entry issues involved local residents seeking work.
"Expect Workers in Your Neighborhood" flier	August 2011	Distributed in work areas, alerting property owners to upcoming work and safety precautions they should take Used for duration of project
Availability Session held at the Miami Civic Center.	August 16, 2011	Invitations sent to 1,100+ mailing list. Posted on EPA, City of Miami, and Quapaw Tribe websites.
Fact sheet to update stakeholders on the progress of the project and provide information on how to participate	July 2011	Mailed to 1,100+ mailing list. Posted on EPA, City of Miami, and Quapaw Tribe websites
Poster announcing final opportunity to participate in yard remediation program	January 2011	Poster was displayed in local municipal offices, the project field office, and the graphic was used to illustrate other outreach materials.
Fact sheet announcing final opportunity to participate in yard remediation program	October 2010	Mailed to 1,100+ stakeholders on the mailing list. Posted on EPA, City of Miami, and Quapaw Tribe websites

Newspaper notice announcing final opportunity to participate in yard remediation program	October 2010	Published in the: • Miami News Record – October 24, 2010 • Afton-Fairland American – November 11, 2010 • Green County Weekly – November 10, 2010 • Joplin Globe – October 24, 2010
Property Owner letter announcing that EPA will go door-to-door seeking access agreements for the work	October 2010	
LEAD Agency Facebook page	Beginning October 2010	Provided contact information for those interested in participating in the program.
EPA Tri-State Mining Waste Fact Sheet (EPA530-F-07-016B)	June 2007	Distributed to the site mailing list, at public meetings, and on EPA's website
Residential Yard Maintenance Flyer	April 2007	Instructions to property owners on how to maintain their remediated yard.
Residential Property Soil Sampling Instructions	January 2007, reissued April 2007	"Do It Yourself" instructions for residents to take soil samples on their properties.
Tar Creek Operable Unit 4 Chat Removal and Sales Community Outreach – 2007 to 2013		
Community Outreach Activity	**Date**	**Outreach Details**
Congressional Delegation Updates	Ongoing	Periodic contacts to keep Oklahoma's U.S. Senators and Congressman apprised of work underway and progress being made at OU4.
Progress report on remedial action activities	September 2014	Update stakeholders on the progress of remedial activities at OU2 and OU4.
Christmas/New Year's Holiday Schedule	December 2013	Notification, combined with OU2, of reduced work schedule for the Christmas and New Year's holidays. Published in the *Miami News Record* December 19, 2013. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
Thanksgiving Holiday Schedule	November 2013	Notification, combined with OU2, of reduced work schedule for the Thanksgiving holiday. Published in the *Miami News Record* November 24, 2013. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
Availability Sessions	September 17 and 18, 2013	Meeting with property owners to discuss status of cleanup. Attendees notified through mailing to individual property owners.

Meet the Teacher Day at Quapaw Elementary School	August 14, 2013	EPA contractor staffed a table at the school's entrance and passed out information on haul routes for construction trucks and discussed traffic safety with parents/guardians/school children.
Christmas/New Year's Holiday Schedule	December 21, 2012	Public notice published in the *Miami News Record* and distributed (PDF) external stakeholders, including the LEAD Agency and Quapaw Tribe for posting on websites, social media.
Availability Sessions	December 4, 2012 and December 6, 2012	Two sessions, combined with OU4. Notification fliers sent to mailing list on November 21, notice published in *Miami News Record* on November 21, 2012. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
Thanksgiving Holiday Schedule	November 2012	Notification, combined with OU2, of reduced work schedule for the Thanksgiving holiday. Published in the *Miami News Record* November 18, 2012. Electronic copies shared with LEAD, Quapaw Tribe for posting on websites, social media.
Work Slowdown	June 2012	Postcard and public notice to stakeholders to assure them that work was continuing, but cost considerations may slow down the pace of the work.
Do Not Enter Job Site/Safety	March 2012 September 2011	Outreach to mailing list warning residents not to go onto job site, ask for photo ID from anyone claiming to be representing the agency. Sometimes combined with OU2 field work. Also provided information on how to inquire about employment, as some of the entry issues involved local residents seeking work.
Truck Hauling Safety Outreach for chat removal construction activities	December 2011 through current	Fliers with written and visual description of routes, public notices with descriptions of routes published in Miami News Record, meetings with school bus drivers and parents. Ongoing communication with schools.
Availability Session	April 12, 2011	Presentation to community members and opportunities to meet one-on-one with EPA staff and learn about the remedial action including, sampling efforts and the access agreement process.
Fact Sheets/Information Bulletins	January 2012, July 2011, March 2011, April 2010, January 2010	Distributed to mailing list, provided to field crews, pdfs shared with stakeholder for posting on websites, social media
Business Card Magnet	June 2010	Contact number for EPA, ODEQ, BIA and Quapaw Tribe. Distributed in the community, at meetings.

Chat Marketing Workshop	June 2010	Outreach included invitations mailers, public notices. Packets to attendees included a CD with all program materials.
Chat Use Workshop	August 2008	Outreach included postcard invitations, public notice, information bulletin
Explanation of Significant Differences	February-March 2010	Public notices were published in the *Miami News Record*, *Pittsburg Morning Sun*, *Baxter Springs News* and *Joplin Globe*, fact sheet, public meeting
Remedial Action	January 2010	Fact sheet update announcing beginning of remedial action distributed to mailing list, information repositories
Remedial Design	April 2009	Fact sheet update on status of remedial design distributed to mailing list, information repositories
Record of Decision	February 2008	Public notices published in *Miami News Record*, fact sheet
Proposed Plan	July 2007 – February 2008	Public notice published in *Miami News Record,* fact sheet distributed to mailing list and at public meeting, coordination meeting held with tribal representatives to explain details of proposed plan

Appendix F
Points of Contact

EPA Regional Contacts

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Appendix G
Superfund Glossary

Superfund Glossary

CERCLA: The Comprehensive Environmental Response, Compensation and Liability Act, commonly called Superfund, as amended in 1986.

Community Involvement Plan (CIP): A document developed from community interviews and EPA guidelines that outline Agency efforts to establish communication with the public. The CIP is designed to create understanding of EPA programs and related actions, to assure public input into the decision-making process in an affected community, and to make certain that the Agency is aware of and responsive to public concerns. Specific community involvement activities are required during Superfund remedial actions.

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA): A Federal law passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act. CERCLA created a special tax that went into a Trust Fund, also known as Superfund, to support investigation and cleanup of abandoned or uncontrolled hazardous waste sites. Under the program, EPA can either:

- Perform site cleanup when parties responsible for the contamination cannot be located or are unwilling or unable to perform the work; or

- Take legal action to force parties responsible for Site contamination to clean up the site or pay back the Federal government for the cost of the cleanup.

Community Involvement Coordinator (CIC): The EPA or State official responsible for overseeing and directing public involvement activities for a site.

Ground water: Water found beneath the earth's surface that fills cracks and pores in layers of sand, soil, and rock. When ground water occurs in sufficient quantities, it can be used as source of water for drinking, irrigation, and other purposes.

Hazard Ranking System (HRS): A model used to evaluate potential risks to public health and the environment from releases or threatened releases of hazardous substances.

Heavy Metals: Metallic elements such as lead, arsenic and cadmium that can damage living things at relatively low concentrations and tend to accumulate in the food chain.

Information Repository: A file containing current information, technical reports, and reference documents regarding a Superfund site. The information repository is usually in a public building that is convenient for local residents, such as a public school, city hall, or library.

National Oil and Hazardous Substances Pollution Contingency Plan (NCP): The Federal regulation that provides a blueprint for Superfund program operations.

National Priorities List (NPL): EPA's list of the most serious uncontrolled or abandoned hazardous waste sites identified for possible long-term remedial response using money from the Trust Fund. The list is based primarily on the score a site receives from the Hazard Ranking System. EPA updates the list at least once a year.

On-Scene Coordinator: The EPA or State official who directs operations at the scene of a removal action.

Remedial Project Manager: The EPA or State official responsible for overseeing remedial response activities for a site.

Remedial Investigation/Feasibility Study (RI/FS): Two distinct but related studies. They often are performed at the same time and together referred to as the "RI/FS." These studies are intended to:

- Gather the information necessary to determine the type and extent of contamination at a Superfund site;
- Establish criteria for a site remedy;
- Identify and screen alternatives for remedial action, and analyze in detail the technology and costs of the alternatives.

Superfund: The common name used for the Comprehensive Environmental Response, Compensation, and Liability Act.