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# Superfund Evaluation: The Families of Tar Creek

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**SUPERFUND EVALUATION:  
THE FAMILIES OF TAR CREEK**

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THE FAMILIES OF TAR CREEK

A dissertation submitted in partial fulfillment  
of the requirements for the degree of Doctor  
of Philosophy in Public Policy

By

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## **ABSTRACT**

The Tar Creek Superfund Site is located in far northeastern Oklahoma near the Oklahoma/Kansas border in Ottawa County. Following Superfund designation, families in the Tar Creek area had to decide whether to accept or reject buy-out offers. This project explored the decision-making processes employed by families in response to these buy-out offers.

Twenty families participated in in-depth interviews which were designed to give voice to the residents. Two groups chose to reject the buy-out offer and remain in their homes within the Tar Creek area. The other two groups accepted the buy-out offer and relocated to other communities, but all remained within ten miles of the Tar Creek Superfund site.

The interviews provided individual interpretations, experiences, and understandings of the lived-experiences of the participants within the defined context of the Tar Creek Superfund site. During the interviews, denial of harm emerged as an especially salient theme, exemplified by the apparent conflict between experiential knowledge and expert knowledge. The interviewees relied heavily on experiential knowledge while exhibiting feelings of rootedness and nostalgia that appeared to overshadow rational settling, in favor of what seems reasonable to them. For the interviewees, place attachment, or rootedness, overwhelmingly trumped expert advice regarding health hazards. The majority of the interviewees indicated no feelings of urgency with regard to the need to relocate; the majority also reported doubts about the Superfund designation, in general, and the associated health hazards.

The current findings emphasized the importance of the early engagement of community members in these situations. The interviewees for the Tar Creek project reported feelings of exclusion from the processes that were taking place in their community. To stay was easier; to go was much more difficult.

This dissertation is approved for recommendation  
to the Graduate Council.

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## **ACKNOWLEDGMENTS**

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## **DEDICATION**

This dissertation is dedicated to the families of Tar Creek. I am indebted to them for their willingness to share stories and their perseverance through the crisis.

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## **CHAPTER ONE**

### **INTRODUCTION**

#### **Superfund Evaluation: The Families of Tar Creek, Oklahoma**

##### **Purpose**

In 1983, the Environmental Protection Agency (EPA) listed the Tar Creek Superfund Site on the National Priorities List, making it subject to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, 42 U.S.C. §9601 et seq.). CERCLA establishes procedures for cleanup of a site and for reimbursement of clean up by collecting from responsible parties once the site is a CERCLA or Superfund listing. The process involves eight steps. The steps are as follows:

1. Site Discovery: Initially a site is identified as potentially hazardous. The Superfund cleanup process begins with site discovery or notification to the EPA of possible release of toxic materials. Discovery may be the result of reports from a combination of various parties including citizens, State Agencies, and EPA Regional offices. Once discovered, sites are entered into the CERCLA, EPA's computerized inventory of potential hazardous substance release sites. EPA then evaluates the potential for release of hazardous substances from the site through these steps in the Superfund cleanup process.
2. Preliminary Assessment and Site Inspection: The Preliminary Assessment (PA) and Site Inspection (SI) are used by EPA to evaluate the potential for a release of hazardous

- substances from a site. The PA evaluates information about a site and its surrounding area and determines whether a site poses little or no threat to human health and the environment. If a threat is ascertained, the PA determines whether the threat requires further investigation. A PA investigation collects readily available information about a site and its surrounding area. The PA is designed to distinguish, based on limited data, between sites that pose little or no threat to human health and the environment and sites that may pose a threat and require further investigation. The PA also identifies sites requiring assessment for possible response actions. If the PA results in a recommendation for further investigation, a SI is performed.
4. Hazard Ranking System and National Priorities List: The Hazard Ranking System (HRS) is the principal mechanism EPA uses to place uncontrolled waste sites on the National Priorities List (NPL). It is a numerically based screening system that uses information from initial, limited investigations - the PA and SI – to assess the relative potential of sites to pose a threat to human health or the environment. The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation.
  5. Remedial Investigation and Feasibility Study: After a site is listed on the NPL, a remedial investigation/feasibility study (RI/FS) is performed at the site. The RI serves as the mechanism for collecting data to characterize site conditions, determine the nature of the waste, assess risk to human health and the environment, and conduct treatability testing to evaluate the potential performance and cost of the treatment technologies that

are being considered. The FS is the mechanism for the development, screening, and detailed evaluation of alternative remedial actions. The RI and FS are conducted concurrently; data collected in the RI influence the development of remedial alternatives in the FS, which in turn affect the data needs and scope of treatability studies and additional field investigations. This phased approach encourages the continual scoping of the site characterization effort, which minimizes the collection of unnecessary data and maximizes data quality.

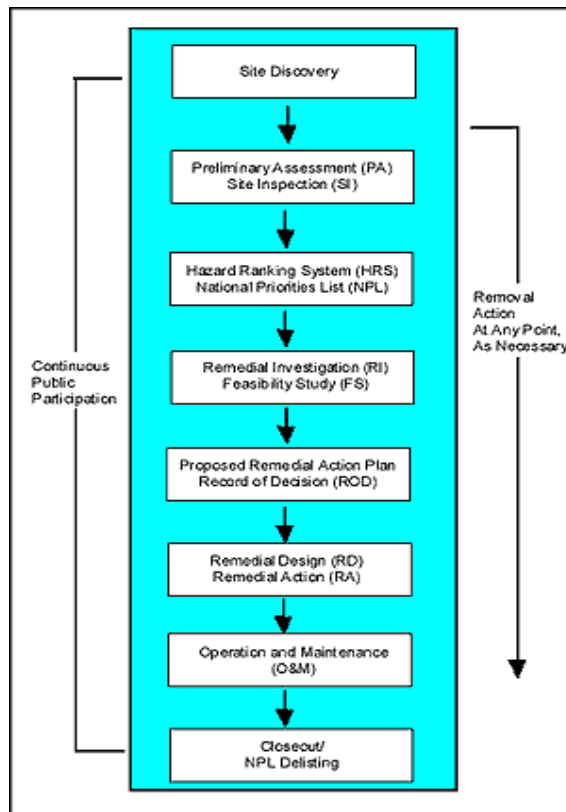
6. Record of Decision: The Record of Decision (ROD) is a public document that explains which cleanup alternatives will be used to clean up a Superfund site. The ROD for sites listed on the NPL is created from information generated during the RI/FS. The ROD contains site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, scope and role of response action, and the remedy selected for cleanup.
7. Remedial Design and Remedial Action: Remedial Design (RD) is the phase in Superfund site cleanup where the technical specifications for cleanup remedies and technologies are designed. Remedial Action (RA) follows the RD phase and involves the actual construction or implementation phase of Superfund site cleanup. The RD/RA is based on the specifications described in the ROD.
8. Operation and Maintenance: Operation and Maintenance (O&M) is an important component of a Superfund response to ensure that the remedy performs as intended. Actions range from maintaining engineering containment structures (e.g., landfill covers) to operating ground water remediation systems. Generally, O&M is the responsibility of the Potentially Responsible Parties, States, or other Federal agencies. EPA is responsible

for ensuring that the work is adequately performed. EPA also retains funding and operating responsibility for Fund-financed ground water restoration systems for up to 10 years (called Long Term Response Actions) prior to transferring these systems to the States for O&M.

9. Closeout and National Priorities List De-listing: The final step, Closeout / NPL Delisting involves a report submitted by the Remedial Program Manager (RPM) verifying that the conditions of the site comply with the ROD findings and design specifications and that activities performed at the site are sufficient to achieve protection of public health and the environment.

Figure 1 (below) presents the sequence of events related to Superfund sites.

**Figure 1 -- Superfund Flowchart**



The Tar Creek effort is currently in the Operation & Maintenance stage. Thirty years after the designation of the Tar Creek area as a Superfund Site, and following many years of widely known dangers to humans from the remnants of two and a half centuries of lead and zinc mining in the area, some 150 residents remain in Tar Creek. This represents 14% of the population at the time of the Superfund designation thirty years ago (Environmental Protection Agency, 2011). The central questions for this research are:

1. Why have residents chosen to remain in Tar Creek after many warnings about the health risks and access to several programs that would have subsidized their relocation?
2. Why did the current residents hold out for so long?
3. How did the first and second waves of relocation transpire?
4. What is different about the remaining families?
5. How did the decision-making process develop within families in both groups?

The purpose of this project is to explore the responses of the families currently residing in the Tar Creek area to the Superfund designation and subsequent clean-up effort and to provide a context for the current Tar Creek conditions. The project also explores the history of the Tar Creek region and its residents from the boom-town era to the present ghost-town condition.

## **Hypotheses**

1. Greater levels of place attachment will be associated with decreased levels of risk perception regarding the SF designation -- i.e., does place attachment trump expert advice regarding health hazards?
2. The risk perceived by Tar Creek residents lacks the urgency of that in other affected communities because the effects of the toxins are gradual and lack the immediate observable health effects of other toxins associated with other sites.



## **Significance of the Current Study**

This study provides EPA officials charged with implementing remedial action following a Superfund designation with information regarding the perspective of the local residents affected by the Superfund designation. A better understanding of decision-making processes employed by families and individual members of families in the face of crises should enhance the efficacy of the EPA remedial action protocols in future situations that require such action.

This study provides families affected by the Superfund designation with the opportunity to voice their points-of-view including reactions to the initial designation and experiential knowledge as they processed the situation and made important decisions for their families. This study also benefits future families affected by environmental disasters that lead to Superfund designation as they transition through a time of crisis.

## **Unit of Analysis: Family**

This study will explore the impact of the disaster and the subsequent SF designation on the families that reside in the Tar Creek area. Ethnographic information on the original settlers and those drawn to the area by the mining operation helps provide a clearer understanding of the values and traditions of the current residents. Population data reveal a demographic shift (decline in population) post-mining boom, which left an impoverished area surrounded by a brewing environmental disaster (Governor's Task Force, 2006).

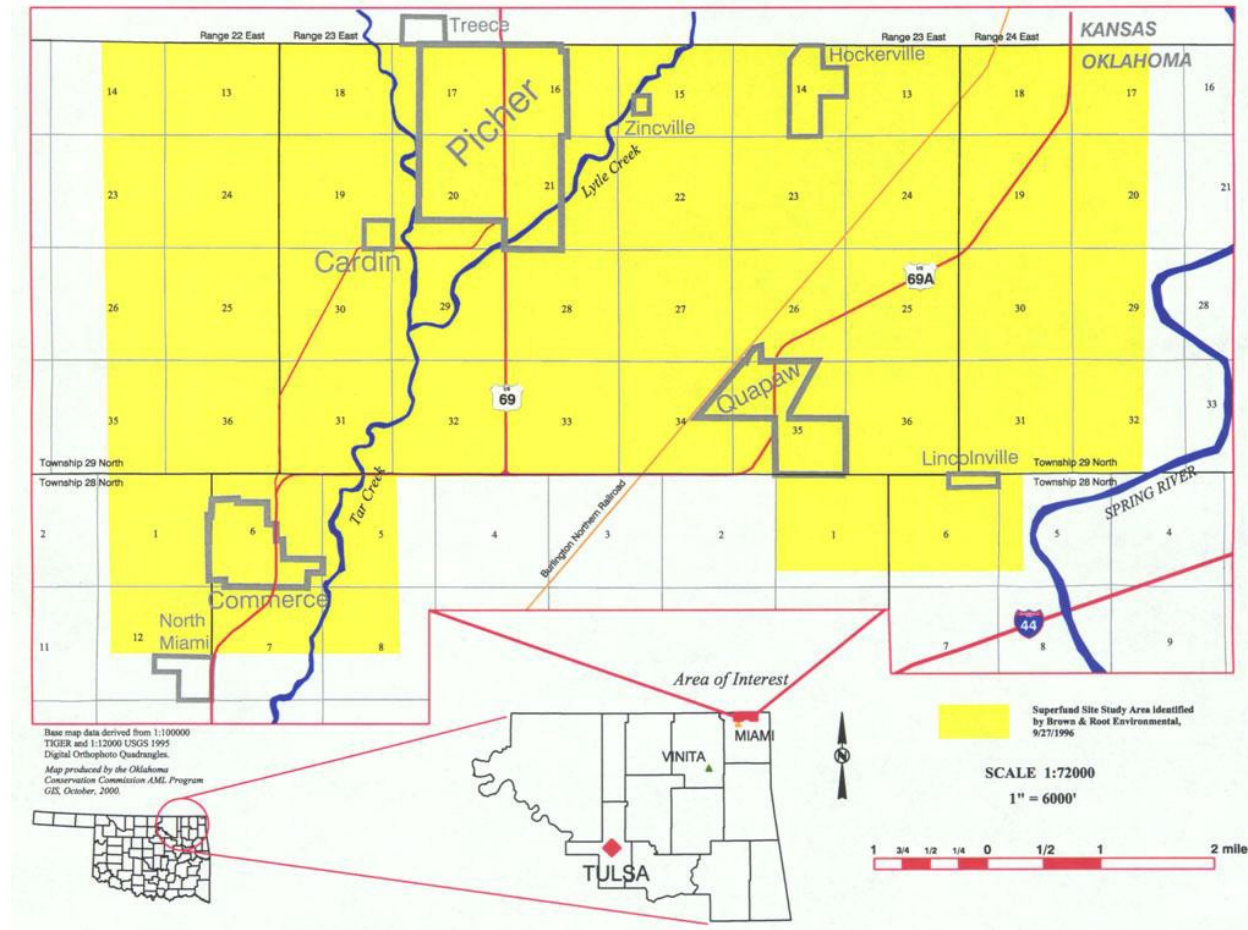
After Superfund designation, families in the Tar Creek area were confronted with a "Should I stay, or should I go?" dilemma. Thirty years later the remaining residents are still trying to resolve the dilemma. The EPA has now determined that the community is not safe for

habitation. The water supply is contaminated. The air is toxic. The town's infrastructure has fallen apart due to decreased tax revenues and subsequent lack of maintenance. The school closed at the end of the 2010 term. And, property appraisals through the buy-out program have fallen short of the promised funding that would have allowed families who chose to do so to relocate to comparable housing in neighboring communities (2008, Kennedy).

### **Tar Creek Superfund Site – Background**

The Tar Creek Superfund Site is located in far northeastern Oklahoma near the Oklahoma/Kansas border in Ottawa County. Exhibit 1- (below) presents a map of the Tar Creek Region prepared by the Oklahoma Office of the Secretary of Environment (Oklahoma EPA, 2012). The Site generally consists of a forty-square-mile area which is also part of the larger Tri-State Mining District that includes areas of Kansas and Missouri. The Site includes parts of five communities: Picher, Cardin, Quapaw, North Miami, and Commerce in Oklahoma. It also includes Treece, Kansas, and affects a total population of roughly 30,000 residents. A substantial amount of the land in the mining area is owned by the Quapaw Tribe and its members and is held in trust by the U.S. Department of the Interior (Governor's Task Force, 2006).

## Exhibit 1 – Map of Tar Creek Region



Beginning in the early 1900s and continuing to some degree as late as the 1970s, the Site was extensively mined for lead and zinc ore. Most mines had their own mill; in many cases, Oklahoma mills served as central mills for mines operating in Kansas and Missouri. Milling the lead and zinc ore resulted in a substantial amount of waste in the form of gravel, dust and debris. The milling process, however, also resulted in mine tailings. Mine tailings are large piles of crushed rock that are left over after the metals of interest (such as lead, zinc,

copper, silver, gold and others) have been extracted from the mineral rocks that contained them. The mineral separation process, is only partially efficient, especially in older mining operations. As a result, after the crushing and grinding processes, some of the metal-containing minerals are left behind as small tailings particles (United States Geological Survey, 2008). The mine tailings (known to locals as “chat”) were collected in above ground piles or in water-filled pits called flotation tailings ponds. Tailing ponds (known to locals as bottomless pits) are areas of mining tailings where the water borne refuse material is pumped into a pond to allow the sedimentation or separation of solid particles from the water (USGS, 2008). Some of the piles are as high as 200 feet and contain elevated levels of lead and other heavy metals. Exhibit 2 (below) provides an aerial view of one deposit of mine tailings and a tailings pond.

The tailings have been sold and marketed as a construction product, similar to limestone gravel, for many years. The tailings piles are either owned privately or held in trust by the U.S. Department of the Interior for members of the Quapaw Tribe (Governor’s Task Force, 2006).

## **Exhibit 2**

### **Aerial views of a mine tailings deposit (chat pile) and a tailing pond (bottomless pit)**



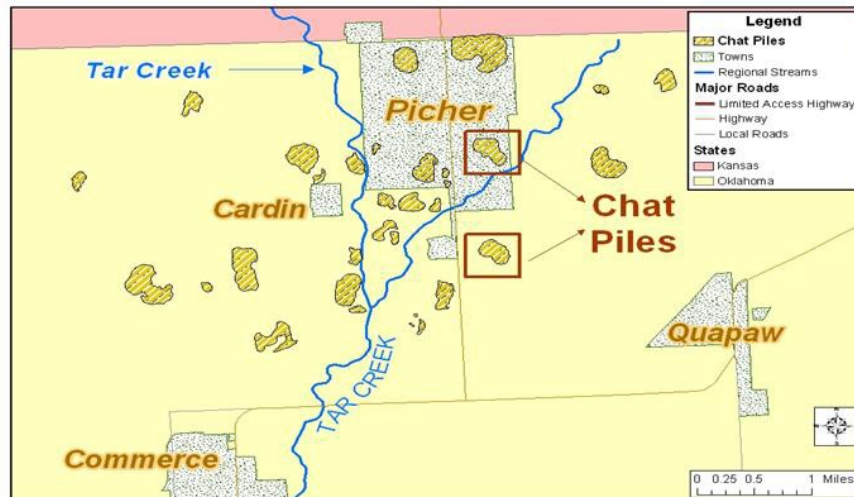
Tailing Deposit (chat pile)



Tailing Pond (bottomless pit)

The USGS (2008) and the U.S. Army Corps of Engineers (2008) have estimated that the Site generally contains 75 million tons of above ground piles of tailings and an additional unquantified amount of tailings in ponds. Exhibit 3 (below) presents a detailed map of mine tailings piles throughout the Tar Creek Region. In addition to above ground tailings piles and ponds, the Environmental Protection Agency and Oklahoma state agencies (2004, EPA) have determined that the mining and milling of lead and zinc ore left miles of underground tunnels, open mine shafts, and drill holes that present a physical hazard as well as an environmental hazard. The clean-up effort in process is designed to locate and map mine hazards and utilize mine tailings (chat) to fill and seal the hazardous locations (EPA, 2004).

**Exhibit 3 – Map of Mine Tailings Piles in Tar Creek Region**  
 Locations of Chat Piles within Tar Creek Superfund Site



In 1984, the EPA began work on its first Operable Unit (OU1) in the Site. As described in Figure 1, each OU is a portion of a remedial response, and the clean-up of a Superfund site can be divided into a number of OUs. OUs may be organized by geographical portions of a site or specific site problems to be re-mediated. Since its listing in 1983, EPA has designated four different OUs within the Site. The first OU was designated to address surface water

contamination in Tar Creek resulting from the discharge of mine water and the threat of contamination resulting from open, abandoned wells of the Roubidoux Aquifer beneath the Site. The term “Roubidoux Aquifer” describes a geologic region in northeastern Oklahoma in which deep wells were drilled. The Roubidoux Formation is a distinct geologic unit in the subsurface of Arkansas, Missouri, Kansas, and Oklahoma, and on the surface in Missouri. The Roubidoux Aquifer in northeastern Oklahoma is used extensively as a source of water for public supplies, commerce, industry, and rural water districts. The water in the abandoned zinc and lead mines contains high concentrations of calcium, copper, iron, lead, manganese, nickel, and zinc. Water from the abandoned mines is a potential source of contamination to the Roubidoux Aquifer and to the wells completed and in current use in the Roubidoux Aquifer (USGS, 2008).

Testing of water samples from public supply wells in the Roubidoux Aquifer within the Tar Creek area indicated that some 70% of public supply wells in the district are contaminated by mine water. The mines were sealed during mining operations but later filled with water after the mines closed for business and pumping ceased. The EPA conducted work from 1984 to 1986 to build dikes, plug eighty-three abandoned wells, and divert surface water around abandoned mines and four collapsed mine shafts. The result of the work of OU1 was mixed (USGS, 2008). Surface water quality was not significantly improved. The dike and diversion remedial action was at best only partially effective, and there was insufficient data to evaluate the effectiveness of the well plugging operations (USGS, 2008). Concentrations of most constituents in the mine water discharges decreased; however, that may have occurred naturally, and the volume of the mine water discharged to Tar Creek was not significantly affected by the remedial action. Some well plugging continues, and the Oklahoma Department of Environmental Quality

(ODEQ) continues water monitoring. EPA and ODEQ expenditures totaled just under \$10 million for the OU1 work (USGS, 2008).

The second designated OU occurred in 1995. It began as a result of information obtained from the Indian Health Service (IHS) concerning the concentration levels of lead in the blood of children living in the area. IHS indicated that approximately 35 percent of the children tested showed concentrations of lead in their blood that exceeded the level considered elevated by the Centers for Disease Control and Prevention. Subsequent, county-wide testing showed that more than 30 percent of children had elevated blood lead levels. EPA found that tailings were located throughout residential properties in the Site. EPA noted that chat was commonly moved to use for fill and to cover driveways, alleyways, roadbeds, yards and home playgrounds (USGS, 2008). EPA also found that the foundations of area homes and business where local children regularly played were built on mine tailings. In response, the EPA began sampling area soils and subsequently began the yard remediation activities that occurred from 1995 through 2003 (USGS, 2008). The remediation process removed the lead-tainted soil and replaced it with clean dirt from outside the area. Remediation of yards typically involved digging out 18 inches of dirt around homes or in playground "hot spots" with high lead concentration (USGS, 2008). The EPA reports that more than 2,000 residential properties, day care centers, schools, parks, and business properties in the five-city mining area were remediated through this work. The EPA reports that it spent more than \$100 million to complete this work. Testing has shown a reduction in the percentage of children with elevated blood lead levels (USGS, 2008). This reduction has been attributed to a combination of the remediation and extensive public education campaigns on the dangers of lead and how to reduce exposures. The third designated OU began in 1989 and

ended in 1999. Pursuant to the request of the Quapaw Tribe, the EPA investigated the abandoned Eagle Picher Industries mining laboratory located in the now abandoned town of Cardin, Oklahoma. The EPA disposed of 120 deteriorating containers of toxic chemicals at the laboratory. The EPA estimated the cost of the OU3 work at \$55,000 (USGS, 2008).

In 2006 as funding ran low, the trust halted offers to those interested in a buyout. Oklahoma Senator James Inhofe remedied this problem with the automatic funding provided by a revised EPA plan. The revised plan grew out of a provision the Senator inserted into a major water resources bill that essentially changed the rules for EPA. The revised provision addressed one of Superfund's failures to ensure that America's toxic waste dumps are being cleaned up (Governor's Task Force, 2006). According to Inhofe, "This is an example of a government program created for a specific purpose and then dissolves after the job is completed. This is how government should work" (Gillham, 2010, p. 2).

On April 15, 2010, the EPA announced it had approved a modification of the cleanup plan for the Tar Creek Superfund site in Oklahoma. The modification provided for the relocation of residents in Treece, Kansas, the town directly north of the initial Tar Creek site which had been excluded from the original Superfund designation because of the state line. After several senior EPA officials visited Treece in 2009, EPA Administrator, Lisa Jackson, determined that Treece residents faced a threat from the pollution-related effects of lead mining in their community similar to that of their neighbors in Picher, Oklahoma (EPA, 2010). On October 29, 2009, Congress provided EPA with an exemption from the Uniform Relocation Act, thereby allowing for the relocation of Treece residents. As a result, the EPA identified relocation as the primary option for Treece residents due to environmental challenges similar to those faced by immediately adjacent Oklahoma residents (EPA, 2010). The program offered voluntary relocation assistance administered by the Kansas Department of Health and Environment.



Seventy-seven residential and business properties were eligible for the voluntary relocation program (EPA, 2010).

Relocation efforts are expected to be completed in 2012 and will be followed by the demolition of all remaining homes and businesses except those owned by residents who rejected the buyout offer. Current plans include seeding and restoring vacant land to native grasses and converting the land into a wildlife area (EPA, 2012).

The following chapter presents a review of the literature as it applies to the situation in the Tar Creek region with particular emphasis on the reactions to the Superfund designation of the families living in the region.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### **Introduction.**

This review of the literature includes a discussion of Phenomenology (of Family, of Community), Ecological and Geographic Phenomenology, Family Systems Theory, Bounded Rationality, and Faces of Power. This review of the relevant literature also includes an examination of how each theory applies or is related to the situation in the Tar Creek area. In addition it explores the research questions (presented in Chapter 1). Why have residents chosen to remain in Tar Creek after many warnings about the health risks and access to several programs that would have subsidized their relocation? Why did the current residents hold out for so long? How did the first and second waves of relocation transpire? What is different about the remaining families? Consideration of the literature provides a foundation for all of these questions. Each theory is introduced and explored in some detail.

#### **Phenomenology.**

The phenomenological perspective helps explain the situation in Tar Creek from the perspective of the residents. They have lived the experience. The phenomenological lens offers insight regarding family and community experiences from a geographical and ecological perspective and heightens awareness of locality, community, and place. Phenomenological ecology is concerned with residents of a community as they work and behave as ecological units. The focus of this approach is on what Relph (1976) referred to as “rootedness.” According to Relph, “Rootedness in a place leads to stability (or perceived stability)” (p. 27).

Phenomenological geography attempts to capture the everyday lives of residents of a community as they [the lives] are lived. From a phenomenological perspective, place determines our experience, but attachment to place is more than just a mere preference. It goes much deeper and is so significant to the individual that it becomes an important part of being human (Katz, 2002).

From the phenomenological perspective, decision-making involves an immediate need to address the question: What am I trying to do? The decision-making process includes three steps: a path of action, a line of interpretation, and an emotional process. The path of action assesses distinctive and practical requirements for successfully addressing the issue at hand. The line of interpretation explores unique ways of understanding how one is and will be seen by others. The emotional process is driven by seductions (wants) and compulsions (needs) that have special dynamics. The final decision makes comprehensible the minutia of experiential details in the phenomenal foreground and explains the general conditions that are most commonly found in the social backgrounds of the decision-makers (Katz, 2002). Consistent with a phenomenological perspective, the richest account of the experiences of the Tar Creek residents comes directly from the individuals in the form of an undistorted, relatively uncomplicated, first-hand account of lived experiences.

In his book *Nature's Economy* (1994), Donald Worster suggested that ecology is as much a world view as a science and that emphasis must be placed on studies of environmental wholes as they are affected by interconnections and relationships. Worster concluded that “special qualities emerge out of interactions and collectivities” and that “wholes are different from the sum of their environmental parts” p. 22). David Seamon (2007) offered a similar observation in *Interconnections, Relationships, and Environmental Wholes: A Phenomenological Ecology of Natural and Built Worlds*; Seamon suggested that “phenomenological ecology must consider all

lived relationships and interconnections to address how worlds come together to make environmental wholes” (p. 53).

Individual accounts of the lived experience in Tar Creek consistently refer to “family” as a foundational mechanism that takes priority over most other concerns. The Tar Creek residents mentioned (see Chapter 4) their family connections and familial relationships as significant priorities that reside in the forefront of their phenomenological experiences. With that in mind, attention is directed to the theoretical literature on the subject of “family.”

### **Family and Family Systems Theory.**

Family has been defined as a set of interacting individuals who are related by blood, marriage, cohabitation, or adoption and who interdependently perform relevant functions through their individual roles. Talcott Parsons (1943) described the development of the family by using generic family definitions that apply to all members of society. According to Parsons, one is born into the biological family, or one's family of origin. If the individual is raised in this family, it becomes their family of orientation. However, if the initial arrangement (marriage, cohabitation, single-parent, etc.) dissolves, or if the child is given up for adoption, the new family of which the individual is part becomes the family of orientation. By leaving the family of orientation to marry or cohabit, for example, the individual becomes part of the family of procreation (Parsons, 1943). This description of family is somewhat dated because in several types of relationships such as childless or gay and lesbian relationships, procreation may not be a significant part of the relationship.

W.J. Goode (1964) described the family as, "a basic unit of social structure, the exact definition of which can vary greatly from time to time and from culture to culture" ( p. 3). He

suggested that society defines family as a primary group, asking family members to perform a variety of different functions (Goode, 1964). Historically households have been viewed as a single unit, making decisions on behalf of the unit. This view traditionally maximized the head of household's preferences and assumed that those preferences reflected the entire household, or it allowed the head of household to impose his or her preferences on the entire household. This view failed to account for an interdependence among members of households that ultimately results in multiple functions among the various members of the household (Lundberg, 1996).

Daly suggested that, "by foregrounding the processes, negotiations and shared meanings in families, rather than focusing on individuals within families or aggregate patterns in family behavior, we can centralize the dynamics of 'family' in our family theory" (2003, p. 772). This approach is likely to result in a view of the family as a unit that is heavily influenced by only one or two members of the group rather than the collective (Day, 2003).

Skolnick (2007) promotes the idea that family is part of our everyday experiences and that we tend to take it for granted, viewing family as natural, without questioning the how and why of family life. Economists question the single-unit definition of household in favor of an intra-household dynamic and allocation of resources (Lundberg, 1996). Recent public discourse on the issue of family involves a variety of issues, leading to uncertainty with regard to a definition of the concept. The nuclear family is obviously not a universal. In the United States, the percentage of households consisting of a nuclear family declined from 45% in 1960 to 21% in 2010 (U.S. Census Bureau, 2010). The arrangements of the families of Tar Creek are consistent with the census data with arrangements other than the traditional nuclear family in place but regardless of the particular arrangement, family is a major actor in the decision-making process in the face of the Tar Creek Superfund designation.

Family Systems Theory provides additional insight on the topic of family. Family Systems Theory was originally influenced by the early systems theorists who attempted to find a general systems theory in an effort to explain all systems in all fields of science. In his 1968 work *General System Theory: Foundations, Development, Applications*, Ludwig von Bertalanffy brought together under one heading all of his observations as a biologist. The word "system" was used to describe all principles common to systems in general. Bertalanffy suggested that,

there exist models, principles, and laws that apply to generalized systems or their subclasses, irrespective of their particular kind, the nature of their component elements, and the relationships or forces between them. It seems legitimate to ask for a theory, not of systems of a more or less special kind, but of universal principles applying to systems in general. (1968, p. 39-40)

Proponents of Family Systems Theory include Murray Bowen and Michael Kerr. Bowen described family “as an emotional unit involved in complex interactions” (1978, p. 282). Both authors stress the importance of connectedness and reactivity among family members and the resulting interdependence. Principles of the theory suggest a cycle within families. If individuals fail to recognize and resolve patterns of negative behavior passed down from previous generations, then that negative behavior is likely to be repeated within their own families. Family Systems Theory emphasizes a multigenerational approach to the family, or system, rather than conventional psychological theories that focus specifically on the individual (Kerr, 1988). Bowen introduced Family Systems Theory in 1974, based on the contention that the family is defined as a set of interacting individuals who are related by blood, marriage, cohabitation, or adoption and who interdependently perform relevant functions through their individual roles (Kerr, 1988). In Family Systems Theory, behaviors and the responses of family members influence family patterns and family life. Bowen stressed the uniqueness of individual families with regard to culture, value, structure and history (Kerr, 1988).

Family Systems Theory highlights differentiation among individuals but emphasizes the importance of togetherness. Each member of the family grows to be an emotionally separate person capable of thinking, feeling, and acting for him/herself, but remains connected and operating in harmony with the family as a unit. The challenge for the individual member of the system is to maintain balance between individuality and the group's harmony. Most members seek individuality but resist giving up togetherness to achieve it (Kerr, 1988).

With concerns for family always in the back of their minds but, at the same time, in the phenomenal foreground, the residents of Tar Creek were confronted with the need to make a decision. The results of those decisions reflect several considerations, but overwhelmingly reveal a perception of very limited options in the face of a crisis. The following perspectives lend insight into the processes that resulted in decisions to reject the buyout offers and remain in place or to accept the buyout offers and move out of the Tar Creek area.

### **Bounded Rationality.**

Exchange theory, particularly rationality theories, may apply to the Tar Creek situation. Herbert Simon's theory of Bounded Rationality proposes that actors will opt for a course of action in which they settle for an option that seems to be "good enough," rather than exploring more complicated alternatives that may have more benefits. Simon (1983) suggested that this situation results because the actors lack complete information or because of the complex nature of the situation they are facing and the seemingly impossible positive outcome. Simon coined the term "satisficing" to describe such situations. The concept combines "satisfy" and "suffice" to describe a decision-making strategy that results in adequacy (good enough), rather than an optimal solution. According to Simon, "Human beings lack the cognitive resources to maximize:

we usually do not know the relevant probabilities of outcomes, we rarely evaluate all outcomes with sufficient precision, and our memories are weak and unreliable" ( p. 145). Simon suggested that bounded rationality is a more realistic approach to decision-making. The residents of Tar Creek seem to have employed a form of bounded rationality in their decision-making processes - settling for "good enough" rather than "optimal." Lack of awareness of possible alternatives may best explain the satisficing processes that took place in Tar Creek.

### **Faces of Power.**

The Faces of Power (Lukes, 2005) literature may offer significant insight into the situation at Tar Creek. John Gaventa (1980) examined the oppressive and desperate situation of Appalachian coal miners under the autocratic power of absentee land-owners, local elites, and corrupt union leaders. Middlesborough, a once quiet rural community, had experienced an economic boom and grown into an industrial mining center. Millions of dollars were pumped into the area by foreign investors, but the mountain people, themselves, did not experience the benefits. As the mining company acquired acres of mineral-rich land, the agricultural lifestyle of the people was transformed from an independent group of farmers to a group of coal miners dependent upon the Company for a salary. According to Gaventa, "the acquisition of land is the first step in the process of economic development and the establishment of power" (1980, p. 53). Middlesborough developed into a Company Town and the people who had once been independent were now required to work as miners. Gaventa's observation concerning the development of the situation in the Appalachia Valley case has similarities to the events at Tar Creek. The working conditions were horrid and living conditions even worse, but the people did not challenge authority. The Appalachia residents were influenced by powers over which they



perceived they had no control to accept their situation. Some of the Tar Creek residents seem to have reacted in a similar fashion to the Superfund designation and subsequent implementation of programs designed to address the crisis in the region.

In his 1980 work *Power and Powerlessness: Quiescence and Rebellion in an Appalachia Valley*, John Gaventa suggested that “In situations of inequality, the political response of the deprived group or class may be seen as a function of power relationships, such that power serves for the development and maintenance of the quiescence of the non-elite” ( p. 4). Gaventa used the Appalachia Valley case to ultimately explore the nature of power. He questioned, “how power and powerlessness affect the political actions and conceptions of a non-elite” ( p. 4). Gaventa found evidence to support his hypothesis that, “ while each dimension of power has its mechanisms, it is only through the interrelationship of the dimensions and the reinforcing effect of each dimension on the other that the total impact of power upon the actions and conceptions of the powerless may be fully understood” ( p. 256).

The Faces of Power literature suggests three distinct dimensions, or faces, of power: power-over, power-to and power-with. The first dimension (face), power-over, is the ability to make and implement decisions. The second dimension (face), power-to, involves setting and limiting agendas. This includes ignoring or delaying processes and introducing burdensome bureaucracy that negatively affects weaker players. Power-with is the ability of a collectivity to work together toward a common goal. The third dimension (face) also involves the shaping of ideology to persuade the weak that they want things that may or may not be in their best interest (Lukes, 2005). Power’s third face has a somewhat elusive nature and is understood as a product of preventing conflict from arising in the first place. Power-holders shape consciousness and awareness of issues through processes of socialization, secrecy and information control

(Gaventa, 1980).

Powerlessness and lack of participation come mainly from the barriers that lead to a lack of awareness, of critical consciousness and of access to information. This atmosphere leads to an internalized oppression in which people begin to blame themselves for the situation (Gaventa, 1980). Gaventa observed this type of behavior among the Appalachia residents, and some of the Tar Creek residents exhibited similar attitudes in the interviews conducted for this study (see Chapter 4). The Superfund designation for Tar Creek was approved in 1983. The initial reaction to the designation was mixed. Some Tar Creek residents reacted positively to the information and chose to move out of the area while others resisted the warnings and chose to remain in place. The residents described in the current study represent both points of view but circumstances prevented immediate relocation on the part of the residents who received the information in a positive way. They delayed relocation but eventually accepted the buyout offer and moved out of the Tar Creek area.

The rationale behind the reactions to the warnings about the elevated lead levels requires consideration of the processes involved in decision making among the residents of Tar Creek. Some received the information and acted upon it by making changes to living arrangements. Others rejected the warnings and chose to remain in place. The literature reviewed on the topics of decision-making and power offers additional insight into the processes employed by the Tar Creek residents after the Superfund designation.

### **Decision-Making and Power.**

The 1983 Superfund designation and subsequent warnings regarding elevated lead levels created a situation for the residents of Tar Creek that forced them to make critical decisions with

regard to living arrangements. The initial warning caused some families to move out of the region but others ignored or dismissed the warnings.

As discussed in Chapter 1, the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, 42 U.S.C. §9601 et seq.), also known as Superfund listing, establishes procedures under that law for cleanup of a listed site and reimbursement for such clean up by collecting from responsible parties. The Tar Creek Superfund designation was approved in 1983; at that time Tar Creek was placed on the National Priority List (NPL). The NPL is the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the EPA in determining which sites warrant further investigation (EPA, 1983).

Superfund designation is clearly an example of a “top down” theory of a policy implementation decision. Community actors may or may not have much influence on the decision that will affect major changes in their communities. Pressman and Wildavsky (in Hill & Hupe, 2005) determined that successful policy implementation, Superfund in this study, depends on linkages between different organizations and departments at the local level

In their work *Unhealthy Places* (2000), Fitzpatrick and LaGory suggested that timing, accidents, and being in the wrong place are functions of the social structure. They point out that successful health interventions require an acknowledgement of the social factors that produce disease patterns. Higher risk health situations are typically concentrated among low-income, under-employed groups. Ironically, protection from harm (such as access to health care and supportive social networks) is typically inversely related to risk and high-risk places, reflecting a system of social inequality that may or may not necessarily be related to income

(Fitzpatrick & LaGory, 2000).

As suggested in the literature on Family and Family Systems Theory, in situations in which the goal is subsistence, “the “husband” [sic] may dominate most family decisions but there is little opposition from other members of the household” (Lundberg & Pollack, 1996, p. 139). Interdependence is likely to be high as all members strive together to meet the goal – survival. When subsistence is not the immediate goal, new economic opportunities often create a need for a reorganization of the household. In such situations, the economic and social power of the husband may be undermined by other household members resulting in a change in the decision-making process (Lundberg & Pollack, 1996). Social pressure is directed toward the head of household who must meet responsibilities or face the loss of social status. The power of the social pressure typically depends upon the particular religion and/or ethnic group. Historically, women have been subjected to a greater degree of social pressure than men (Lundberg & Pollack, 1996). The interviews with Tar Creek residents for the current study reveal that traditional gender roles prevailed. Among the families in which there is a male head of household, that individual overwhelmingly served as decision-maker with regard to what to do in the face of the Superfund designation (see Chapter 4).

Durkheim's observation that "not everything in the contract is contractual," (Durkheim, 1893) promotes the idea that rational exchange is not likely the source of a morally regulated social order. As human beings we often make decisions that may seem to others to be quite irrational. According to Robert Dahl (1961) in his work *Who Governs?*, “Power is exercised when A is successful in getting B to do something that he or she otherwise would not do” (, p. 128). In the 1980s, the residents of Tar Creek were all confronted with information regarding the situation in the region. Some chose to leave; some chose to stay. In the 1990s and 2000s, the

remaining residents were forced to make a decision to stay or go: go, with monetary support from the government to assist with relocation, or, stay, with the awareness that there would be no support from the government. The decision to stay also required a realization that there would be major changes with regard to infrastructure in the region including loss of public utilities that had been in place for decades, which would leave residents fending for themselves with regard to essentials such as water and electricity.

David Waguespack (1998) focused his dissertation on decision-making processes associated with Superfund designations from the perspective of EPA officials charged with the implementation of Superfund programs. The conclusions drawn suggest that increased levels of participation in the processes on the part of stakeholders -- members of the affected community - - influence the response by EPA officials in favor of the at-risk population (Waguespack, 1998).

Bachrach and Baratz (1970) suggested with regard to power that, “to the extent that A succeeds in doing this, B is prevented, for all practical purposes, from bringing to the fore any issues that might in their resolution be seriously detrimental to A’s set of preferences” (p. 170). In the Tar Creek situation, A is the government and B the residents of the region. “A” designated Tar Creek as a Superfund site and successfully implemented the Superfund policy. “B” was unsuccessful in promoting its agenda which favored preservation of a community that had existed for over a century. “A” won the power struggle.

The following chapter presents a mixed-method exploration of the impact of the Superfund designation on the families residing in the Tar Creek area.

## CHAPTER 3

### METHODS

#### Introduction

Designation of Superfund status for the Tar Creek area led to the subsequent implementation of clean-up and buy-out plans. In an attempt to gain an understanding of the decision-making processes that led to immediate relocation, delayed relocation or the decision not to relocate, particular emphasis was given to the impact of the Superfund designation on the families residing in the Tar Creek area.

The following methodological approach was employed in this effort to gain insight into the processes associated with the Superfund designation and the impact of subsequent implementation of the program on Tar Creek families.

- 1 In-depth interviews were conducted with residents who remain in Tar Creek with emphasis on decision-making processes employed by the families facing the choice to relocate or to remain in place in the Tar Creek area.
- 2 In-depth interviews were conducted with former residents with emphasis on decision-making processes employed by families that resulted in relocation.
- 3 Transcriptions – naturalized transcriptions of each interview provide verbatim accounts of the interview conversations.
- 4 Coding – codes were assigned to specific keywords, themes, topics, phrases, terms, concepts and ideas.
- 5 Data Analysis – an inductive analysis of the data identified emerging themes that were common across all of the interview conversations.

### **Institutional Review Board.**

Application for Institutional Review Board (IRB) approval of the Tar Creek project was submitted on May 9, 2011. The form appears as Appendix A of this document. IRB approval for *Tar Creek Superfund Site: Family and Community Impact Analysis* was received May 18, 2011 (Protocol # 11-04-623). The project was designated as “exempt.” The approval form is included as Appendix B of this document. The approved start time for the project was May 18, 2011, with an expiration date of August 1, 2012.

### **Instruction Letter to Participants / Voluntary Consent Form.**

Prior to the start of the interview, each interview subject was provided with a letter containing detailed information regarding the Tar Creek project, the planned format of the interview, and University of Arkansas IRB approval information. A copy of the letter is included as Appendix C of this document. Each interview subject was also provided with a voluntary consent form designed to elicit implied consent for participation in the project. The letter explains that granting the interview implies consent to participate in the project. The consent form is included as Appendix D of this document.

### **In-depth Interview and Interview Protocol.**

In preparation for the in-depth interviews, the researcher prepared a set of open-ended questions carefully worded and arranged for the purpose of minimizing variation in the questions posed to the interviewees. This method helped to guide the conversations and allowed for probing when the conversation called for it.

In-depth interviews were the primary means of data collection for the Tar Creek project. An interview protocol was developed (see Appendix E). The protocol provided structure to each interview while effort was made to conduct each interview as a conversation. According to Patton (2001), “One way to provide more structure than in the completely unstructured, informal conversational interview, while maintaining a relatively high degree of flexibility is to use the interview guide strategy” (as cited in Rubin & Babbie, p. 407). The aim of the interview protocol was to help participants reconstruct individual interpretations, experiences, and understandings of their lived-experience within the defined context of the Tar Creek Superfund site. The interview questions guided the conversation in the open-ended format. The goal of the questions was to encourage the participants to express individual opinions and experiences related to the subject matter. Each question was asked in an open-ended format. The participants controlled the pace and direction of the conversations. As a result, the participants assumed the role of expert, revealing experiences, interpretations, and understandings of their experiences as residents of Tar Creek.

The first twelve interview questions were designed to ease into the conversation about the Superfund designation for the Tar Creek area by asking the interviewees for some background information specific to their family and community arrangements. Questions 1 – 12 are listed below.

1. How long have you lived / did you live in the Tar Creek region?
2. Why did you purchase a home in the Tar Creek region?
3. Can you tell me what you consider to be the most important feature of the Tar Creek region?
4. Are there other names for the neighborhoods within the Tar Creek region?



5. How would you describe the area to a friend who has never been here?
6. What do you like most about the area?
7. What do you like least about the area?
8. Have there been pleasures living here that you did not anticipate when you first purchased your home?
9. What is / was it like to live in your neighborhood on a daily basis?
10. Is / was the neighborhood important to your daily activities? How?
11. Other than inside your home, where is / was your favorite place in the neighborhood?  
Why?
12. Is there anything that we have not talked about that you think may have contributed to your feelings about the Tar Creek region?

After discussing the background information, Question 13 shifts the interview focus to the Superfund. Questions 13 – 22 are specific to the Superfund designation. Questions 13 – 22 are listed below.

13. What was your initial reaction to the Superfund designation?
14. Did you attend the town hall meetings to learn more about possible remedies?
15. What was your reaction to the proposed buy-out plan?
16. If you reacted in a positive way to the proposed buy-out plan – why?
17. If you reacted in a negative way to the proposed buy-out plan – why?
18. If you accepted the proposed buy-out offer, how did you arrive at your decision?  
How many members of your family were included in the decision-making process?  
Did any members of your family oppose the buy-out offer? If so, when and why did

- they change their minds? Or, do they still oppose the decision?
19. If you accepted the buy-out offer, what was the most difficult part of making the decision? What was the easiest part of making the decision?
  20. If you rejected the proposed buy-out offer, how did you arrive at your decision?  
How many members of your family were included in the decision-making process?  
Did any members of your family want to accept the buy-out offer?  
If so, when and why did they change their minds? Or, do they still disagree with the decision to reject the offer?
  21. If you rejected the buy-out offer, what was the most difficult part of making the decision? What was the easiest part of making the decision for you?
  22. Are you happy with your decision to accept or reject the buy-out offer?

### **Pilot Study.**

The initial in-depth interview was conducted at 9:00 a.m., on Wednesday, September 7, 2011, at a casual restaurant in a small town in southeast Kansas. The interviewee agreed to participate in the project and indicated a willingness to act as a liaison in the collection of data for the Tar Creek project. By recommending other families as interview subjects for the project, the liaison assisted with implementation of a snowball sampling of the population. The initial interview also served as a pilot study for the Tar Creek project. After an analysis of the initial interview, strengths and weaknesses of the interview questions and procedures were identified, followed by minimal revisions to the interview script.

The revised interview script was used for subsequent interviews. The next four potential interviewees were identified through recommendations from the liaison and the liaison's family members. The goal of the project was to obtain an exponential non-

discriminative snowball sample.

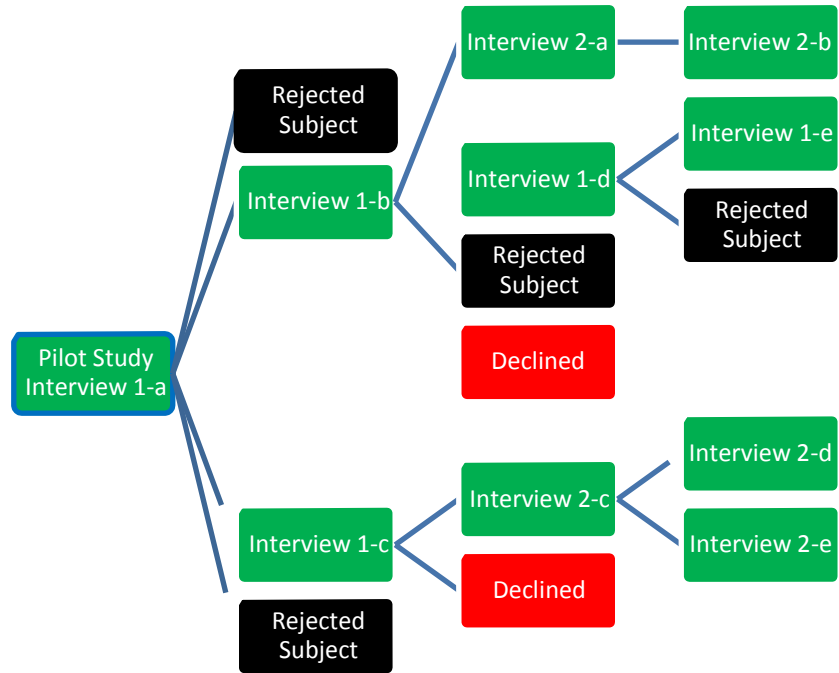
### **Sample.**

The first interviewee recommended four possible contacts as potential interviewees. All four contacts agreed to participate in the study. Two of the contacts were rejected as potential interviewees due to their status as extended family of the other interviewees. This decision was made in an effort to obtain a more diverse sample. The sample for the Oklahoma interviews grew from this initial process. All of the Oklahoma interviews may be traced back to the initial interviewee. Figure 2 (below) illustrates the process of obtaining the snowball sample for the Oklahoma interviews.

Two separate clusters of interviewees comprised the sample for the Kansas interviews. The initial contact for the Kansas interviews recommended three potential interviewees. Two of them agreed to participate in the study. The other contact declined to participate in the study citing time constraints. Two more interviews resulted from this process, but there were no additional interviews associated with the first group. A second group of Kansas interviewees resulted from contact with an individual unaffiliated with the first Kansas group. The interviewee recommended two potential interviewees and the remainder of the Kansas sample emerged from that process. It should be noted that the two Kansas groups represent different positions in the process. The members of the first Kansas group did not accept the buy-out offer and remained in their homes in Treece, Kansas. The members of the second Kansas group accepted the buy-out offer and moved out of Treece, Kansas. Figure 3 (below) illustrates the process of the snowball sample for the Kansas interviews.

**Figure 2**

**Snowball Sample – Oklahoma Interviews – 1 Cluster**



Legend:

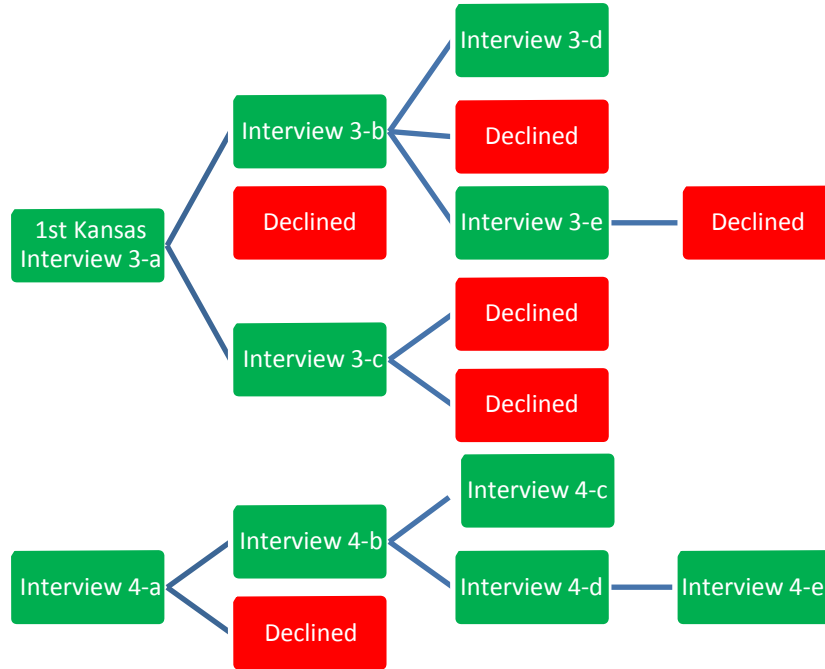
**Interviewee (green)** agreed to participate in the project

**Interviewee (red)** declined to participate in the project

**Interviewee** was determined to be ineligible for the project

**Figure 3**

**Snowball Sample – Kansas Interviews – 2 Clusters**



Legend:

**Interviewee (green)** agreed to participate in the project

**Interviewee (red)** declined to participate in the project

**Interviewee** was determined to be ineligible for the project

**Demographic Characteristics of Participants.**

Thirty-three individuals representing twenty household/family units participated in the twenty standardized open-ended interviews that were conducted for the Tar Creek project. Each of the interviews represented a household or family unit. The age range of the participants in the Tar Creek project was 28 to 83. Seventeen females and sixteen males participated in the interviews. Two widows and two widowers participated in the interviews. Nine married couples participated in the interviews. Four cohabitating couples participated in the interviews. Two

divorcees and one single parent participated in the interviews. Table 1 describes the demographic characteristics of the interview participants.

**Table 1**  
**Demographic Characteristics of Participants**

Group 1: Oklahoma			
Decision: Stay	Age	Gender	Household
Interview A	83	M	Widow
Interview B	52, 48	M, F	Married
Interview C	66	M	Divorced
Interview D	82, 79	M, F	Married
Interview E	68, 66	M, F	Married

Group 2: Kansas			
Decision: Stay	Age	Gender	Household
Interview A	62	F	Divorced
Interview B	85, 83	M, F	Married
Interview C	48, 46	M,F	Cohabiting
Interview D	80	M	Widow
Interview E	51, 50	M, F	Married

Group 3: Oklahoma			
Decision: Go	Age	Gender	Household
Interview A	54, 54	M, F	Married
Interview B	38, 36	M, F	Cohabiting
Interview C	59, 54	M, F	Married
Interview D	52, 51	M, F	Married
Interview E	62, 59	M, F	Married

Group 4: Kansas			
Decision: Go	Age	Gender	Household
Interview A	28	F	Single-Parent
Interview B	58, 57	M, F	Married
Interview C	48, 46	M, F	Cohabiting
Interview D	44	F	Divorced
Interview E	79	F	Widow

## **Interviews.**

For the Tar Creek project, interviews were conducted with residents who remain in the region. The interviews explored decision-making processes employed by families facing the need to relocate. Interviews were conducted with former residents with emphasis on decision-making processes employed by families that resulted in relocation. A total of twenty in-depth interviews were conducted. The interviewees represent four different situations or positions in the Tar Creek arrangement. Five of the interviewees remained in place in the Tar Creek area in Oklahoma. They did not accept the buy-out offer. Five of the interviewees remained in place in southeast Kansas. They did not accept the buy-out offer to provide for the relocation of residents in southeast Kansas that was approved by the EPA in 2010. The area is directly north of the initial Tar Creek site, but it was excluded from the original Superfund designation because it is north of the Kansas state line. Five of the interviewees are former residents of the Tar Creek area in Oklahoma. They accepted the buy-out offer and relocated to other communities, but none more than ten miles from their original home. Five of the interviewees are former residents of southeast Kansas. They accepted the buy-out offer that was implemented in 2010 and relocated to other communities, but none more than ten miles from their original home. The four groups, with five interviewees per group, were labeled as follows:

1. Stay OK (Oklahoma)
2. Stay KS (Kansas)
3. Go OK (Oklahoma)
4. Go KS (Kansas).

Since there are no longer any public spaces within the Tar Creek area, the interviews were conducted in two local restaurants in communities near the Tar Creek area. The Oklahoma interviews were conducted in a small town in northeast Oklahoma, some four miles outside the Tar Creek area. The Kansas interviews were conducted in a small town in southeast Kansas, some four miles outside the Tar Creek area. The two small towns and surrounding communities represent the most popular choices for relocation for Tar Creek residents participating in the buy-out plan. The towns are frequented by the residents remaining in the Tar Creek area for essentials such as groceries and other supplies. A total of thirty-three individuals, representing twenty families/household units, participated in the interview conversations. They represented five different family structures: nuclear family with two adult heads of household, widow/widower, divorced, single-parent, and cohabitating couple.

The interviewees seemed to be familiar with the local restaurants and appeared to be comfortable within the surroundings. The interviewees were offered soft drinks for refreshment during the interview conversations. The interviews were recorded using an Olympus VN-8100PC digital voice recorder. All tapes and transcription files are stored in a locked file in the researcher's office, and all data file-names were encrypted. All data collected that can be associated with a subject/respondent is confidential. In an effort to ensure confidentiality, no names or identifiable information of participants was transcribed from the audio tapes. The list of participants is known only to the primary researcher and faculty advisor. The interviews presented very minimal risk to the interviewees. Minimal risk is defined in IRB Protocol as risks of harm not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests.



The IRB Protocol appears as Appendix A of this document.

### **Transcriptions.**

The transcripts reflect verbatim depictions of speech with as much detail as possible given to the content of the conversations. The interviews were transcribed using the naturalized transcription approach. The naturalized approach allowed more opportunity to identify themes as they emerged from the specific interviews. The naturalized approach includes every word, every utterance, and is transcribed in great detail because the language represents the real world of the interviewees (Cameron, 2001). The goal in naturalized transcription is for the words of the interviewee to be presented exactly as they are spoken by the participant with nothing filtered by the transcriptionist. According to Schegloff, “When we attempt to stay true to the actual speech, we privilege participants’ words and avoid a priori assumptions...because it is the orientations, meanings, interpretations, understandings, etc., of the participants it is those characterizations which are privileged in the constitution of social-interactional reality, and therefore have a prima facie claim to being privileged” (1997, pp. 166-167).

### **Codes.**

The coding process involved combing the data for emerging themes, categories, and ideas. Relevant items were assigned a code label for later retrieval for comparison and analysis. The data codes helped to organize the information and provided the opportunity to identify patterns. The codes were based on specific keywords, themes, topics, phrases, terms, and ideas. Each code describes a concept that is meaningful for the Tar Creek project. Nine codes emerged

during the transcription process: nostalgia, experiential knowledge v. expert knowledge, acknowledgement of stigma, connection v. isolation, monetary value v. rootedness, insider /outsider status, mining company responsibilities, chat piles as identity markers, and buyout as a joke. The coding process for the Tar Creek project may be best described as non-hierarchical or flat coding. This approach does not involve any sub-code levels. No code is more important than other codes. Each of the codes represents an important issue that serves to describe the experiences and perceptions of the Tar Creek residents. A detailed codebook is presented as Appendix G of this document.

### **Data Analysis.**

Analysis of interview transcripts involved an inductive approach intended to identify patterns in the data through thematic codes. According to Patton (1980), “Inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analysis” p. 306). Inductive analysis involves reasoning from the specific to the general. This effort attempts to identify significant categories in order to understand the relationships among them. The data may ultimately be used to build a theory. Inductive reasoning is a bottom-up approach to understanding the situation.

Deductive analysis, on the other hand, reasons from general to specific. The deductive approach begins with theory, generates a hypothesis, and collects data to support or refute the hypothesis. Deductive reasoning is a top-down approach. Inductive and deductive reasoning were both useful approaches in the analysis of the data from the Tar Creek interviews. Some of

the interview questions called for inductive reasoning in order to interpret the data while others called for a deductive approach in order to interpret the data.

### **Summary.**

This chapter provided details regarding the methodological approach employed for this project to gain insight into the processes associated with the Superfund designation and the impact of subsequent implementation of the program on Tar Creek families. After obtaining IRB approval, in-depth interviews were conducted with twenty families representing four different situations in the Tar Creek area. Two groups of families chose to remain in their homes within the Tar Creek area. The other two groups of families accepted the buy-out offer and relocated to other communities, but all remained within ten miles of the Tar Creek Superfund site.

The following chapter presents a detailed description of the results of the Tar Creek project. In an effort to preserve confidentiality, the interviewees are not identified. Direct quotes from the interviews are used to illustrate the significance of the content of the interviews in answering the research questions:

1. Why have residents chosen to remain in Tar Creek after many warnings about the health risks and access to several programs that would have subsidized their relocation?
2. Why did the current residents hold out for so long?
3. How did the first and second waves of relocation transpire?
4. What is different about the remaining families?
5. How did the decision-making process develop within families in both groups?

## CHAPTER 4

### FINDINGS

#### **Introduction.**

The ultimate goal of this research was to understand why residents chose to stay in or leave the Tar Creek area. Recall from Chapter One the hypotheses guiding this project:

1. Greater levels of place attachment will be associated with decreased levels of risk perception regarding the SF designation -- i.e., does place attachment trump expert advice regarding health hazards?
2. The risk perceived by Tar Creek residents lacks the urgency of that in other affected communities because the effects of the toxins are gradual and lack the immediate observable health effects of other toxins associated with other sites.

As discussed in Chapter 3, this project involved a qualitative approach to understanding the decision-making processes that led to immediate relocation, delayed relocation, and refusal to relocate. The thirty-three individuals interviewed for this study represent twenty household/family units. The family structures varied, represented by a nuclear family with two heads of household, widow/widower, divorced, single-parent, and cohabitating couple.

This chapter presents the reconstructed individual interpretations, experiences, and understandings of the lived-experiences within the defined context of the Tar Creek Superfund site. The interview participants for the Tar Creek project reported symptoms of satisficing that reflect various forms of bounded rationality. From a phenomenological perspective, which emphasizes attachment to place or rootedness as significant enough to the individual to become an important part of being human, the interviewees relied heavily on experiential knowledge and exhibited feelings of rootedness and nostalgia that appear to overshadow rational settling in favor of what seems reasonable to them. The interviewees reported experiences and feelings that both

support and refute the Faces of Power literature. They seemed to feel intimidated in certain cases by the so-called experts, but they also behaved defiantly toward the proposals that were suggested by those experts and other government officials.

The following sections discuss in some detail the issues of satisficing guided by Bounded Rationality, reliance on Experiential Knowledge, and the power of Rootedness and Nostalgia. Direct quotes from the Tar Creek interviews are presented to preserve the integrity of the information as it emerged during the interview process. Quotes are identified as “Stay” or “Go” to explain the position of the interviewee with regard to the buyout program. The three aforementioned categories emerged from the coding process after the interviews and seem to represent the most powerful guiding forces of the decision-making processes employed by the interviewees for the Tar Creek project.

### **Power Relations and Satisficing.**

Herbert Simon's theory of Bounded Rationality proposes that actors will opt for a course of action in which they settle for an option that seems to be "good enough," rather than exploring more complicated alternatives that may have more benefits. Simon coined the term "satisficing" to describe such situations. The concept combines "satisfy" and "suffice" to describe a decision-making strategy that results in adequacy (good enough), rather than an optimal solution (Simon, 1983). The interviewees for the Tar Creek project seem to have employed a form of bounded rationality in their decision-making processes -- settling for “good enough” rather than “optimal” (Simon, 1983). Lack of awareness of possible alternatives may best explain the satisficing processes that took place in Tar Creek. Most of the residents appear to have made decisions that were reasonable to them, though not necessarily rational. This is evidenced by the following

quotes from the Tar Creek interviews:

It's just home. We always been here and don't know any other place.  
(Stay-OK-4-d, line 28)

We moved to the place on the highway in '56 and it's home. I don't want to live no place else. It's pretty quiet around here now and that's fine with me. (Stay-OK-4-d, lines 27-28)

Can't do anything else. It's all about the money. (Stay-OK-3-c, line 73)

Well since the appraisal was so low, I couldn't take it. I'm not going to take out a mortgage at this age on a new house. I'm satisfied with the old house. It's good enough for me. (Stay-OK-3-c, lines 55-57)

I was mostly concerned about getting ripped off. And I did.  
(Stay-OK-3-c, lines 53-54)

Like I said, I'm not one of those who "loves" Treece so I guess it was easier for me to leave. I think we should have got more for the trailer and the lot – it was nice – but that's how it goes. (Go-KS-4-a, lines 65-66)

I couldn't have sold that house so it seemed like the only option really. Even though they low-balled me on the appraisal, I'm still not happy about it but what choice did I have? It was better than nothing.  
(Go-OK-2-b, lines 80-81)

I knew that I would take it. I didn't like the offer but I just knew I had to take it. You kinda knew that Treece was going down so I thought the offer was better than nothing. (Go-KS-4-a, lines 83-84)

While both categories, "Stay" and "Go," are represented by the quotes, it is interesting to note that all of the interviewees used negative language to describe their situations. They appear to be dissatisfied with some aspect of the process even though they claim to be satisfied with their outcomes. This supports Simon's assertion that satisficing results from decision-making processes that employ forms of bounded rationality to arrive at a "good enough" rather than "optimal" solution (Simon, 1983).

The Tar Creek area's problems are directly connected to the mining operations that ceased in the 1970s. The companies that operated the mines closed the mines and left the area. They left behind the greatest environmental disaster in U.S. history (EPA, 2010). To date the mining companies have not been involved in the clean-up effort in the Tar Creek area. The companies have refused to contribute to the clean-up of the site. Some of the companies have declared bankruptcy, making it difficult to collect money from them. Asarco Inc., Blue Tee Corp., Goldfields Mining Corp., NL Industries, Childress Royalty Co. and Doe Run Resources Corp. were the defendants of an unsuccessful class-action suit filed by residents of the Picher-Cardin area, the city of Picher, and the Picher School District (Case 4:03-cv-00327-GKF-PJC Document 290, 2009). None of the interviewees for the Tar Creek project participated in the failed class-action lawsuit. Six of the interviewees reported that members of their extended families participated in the class-action lawsuit. The interviewees may have been affected by the outcome of the failed class-action lawsuit, but none of them mentioned it as a specific factor in their decision-making processes. Several of the interviewees indicated that they feel that the mining companies bear some responsibility for the clean-up effort. The following quotes from the interviews illustrate the points-of-view of some residents regarding the mining companies' responsibility. Note that only one quote is from an interviewee in the "Stay" category, and three quotes are from interviewees in the "Go" category:

I do think that the mining companies should have cleaned up a little more. They bailed out and didn't clean up their mess. (Stay-OK-1-a, lines 18-19)

I think the mining companies need to be forced to clean up some of the mess. There's never any talk about them coming in and cleaning up. I don't get it. They made the mess and then they just left out. It's not right. Somebody needs to pay for all of that (Go-KS-4-a, lines 97-98)

I would tell them that it's a ghost town and that the mining companies left a big mess. I think they should be the ones cleaning it up, not the government. (Go-KS-3-c, lines 22-26)

I thought it was about time they decided to do something about all of the mess that was left. (Go-OK-3-c, lines 50-52)

The failed class action lawsuit may have convinced Tar Creek residents that efforts to hold the mining companies accountable for the situation they left behind in Tar Creek were futile. This realization may have contributed to the satisficing behavior that was employed by the residents in decision-making processes. Since it was apparent that the mining companies would not be involved in the cleanup effort, it may have seemed rational to settle for the buyout offers implemented through the Superfund designation. The buyout offers were better than nothing.

As previously discussed in Chapter 2, the Faces of Power literature suggests three distinct dimensions, or faces, of power: power-over, power-to and power-with. The first dimension (face), power-over, is the ability to make and implement decisions. The second dimension (face), power-to, involves setting and limiting agendas. This includes ignoring or delaying processes and introducing burdensome bureaucracy that negatively affects weaker players. Power-with is the ability of a collectivity to work together toward a common goal. The third dimension (face) also involves the shaping of ideology to persuade the weak that they want things that may or may not be in their best interest (Lukes, 2005). Gaventa suggested that "In situations of inequality, the political response of the deprived group or class may be seen as a function of power relationships, such that power serves for the development and maintenance of the quiescence of the non-elite" (1980, p. 4).

The Appalachia residents that Gaventa studied were influenced to accept their situation



by powers over which they perceived they had no control. The interviewees for the Tar Creek project acted in ways that were both similar to and different from the Appalachia residents. Gaventa suggested that power-holders shape consciousness and awareness of issues through processes of socialization, secrecy, and information control, but the prevalence of defiance against the elites in the Tar Creek situation seems to indicate that the elites were unsuccessful in implementing power's third face. The third face of power involves the creation and maintenance of ideology. This effort seems to have failed because the Tar Creek interviewees were affected by the presence of the elites, both so-called experts and government officials, but ultimately those forces were not fundamental in the decision-making processes that the interviewees employed. They appear to have relied more heavily upon their own experiential knowledge and doubts about the warnings that were issued regarding potential health hazards associated with residence in the Tar Creek area than upon the information provided by the experts.

### **Experiential Knowledge: Denial and Stigma.**

Rubin (2001) suggested that experiential knowledge depends on memory and recognition to make sense of situations. It provides effective and actionable judgments regarding situations that are ambiguous. Experiential knowledge may be informed by theoretical knowledge but does not necessarily depend on it. Baumeister and Newman (1995) suggested that experiential knowledge takes on the form of a narrative by allowing people to explain their experiences by constructing them in story form. From these stories individuals sometimes infer or deduce generalizations about the experiences.

For some residents of Tar Creek, experiential knowledge seems to conflict with expert knowledge presented by government officials, EPA representatives, and Harvard researchers.

The expert knowledge resulted from research conducted in the Tar Creek area following the Superfund designation in 1983 that recommended relocation due to concerns regarding physical safety and the health of Tar Creek residents. The defiant attitude of the Tar Creek interviewees indicates that denial of harm was an especially salient theme. The conflict between experiential knowledge and expert knowledge is illustrated by the following quotes from the Tar Creek interviews:

I lived here my whole life and I'm not sick. I played on chat piles as a kid. My kids played on chat piles. They're not sick.  
(Stay-OK-1-a, lines 31-32)

(Laughs) I didn't know what it meant – still don't really know. I thought it was ridiculous that a bunch of EPA people came in here and started stirring up trouble. We ate fish our whole lives. Nobody got sick. They blew it out of proportion. (Stay-KS-1-a, lines 53-54)

I thought it was bull. We all played on the chat piles. I'm not sick. My kids are not sick but I don't want them to get sick if there's something to it.  
(Go-KS-4-a, lines 68-69)

The kids, my kids, liked the Picher School. I thought they had good teachers. My kids did okay in school over there. Better than now in some ways. We had good neighbors. Kids played together. You didn't have to worry much about them. Guess I should have been worried though about their blood (laughs). My kids did not have high lead in their blood and they played on the chat piles. They learned to read too! (Go-OK-2-B, lines 39-43)

It is interesting to note that interviewees representing both categories, “Stay” and “Go,” reacted in a similar way to the warnings that were issued by EPA officials regarding potential health hazards in the Tar Creek area. Some of them ultimately chose to relocate, but they continued to exhibit attitudes of defiance toward the expert advice regarding health hazards.

The initial reaction to the Superfund designation in the 1980s was mixed. Some Tar Creek residents reacted positively to the information and chose to move out of the area even

before the buyout programs were implemented. Others resisted the warnings and chose to remain in place. Some of the interviewees for the Tar Creek project exhibited behavior that supports the Faces of Power literature by complying with (but not necessarily accepting) the buyout offers. For others though, Faces of Power does not necessarily seem to apply, since they resisted the warnings and ultimately chose not to accept the buyout offers. For the Tar Creek project interviewees, experiential knowledge appears to have trumped rational evidence in several significant ways. EPA and other so-called experts were unsuccessful in their efforts to convince some of the residents of the Tar Creek area that there was any urgency associated with the potential health hazards. Some of the residents were so skeptical of the information about health warnings that the issue was not their first priority when considering the buyout offers. None of the interviewees for the Tar Creek project acknowledged a perception of danger associated with water supplies or local food supplies (fish). All of the interviewees mentioned the chat piles, but none of them acknowledged a perception of danger associated with the chat piles, even though the chat piles represent a major source of toxicity within the area. There was definitely a denial of harm on the part of the residents evidenced by the following quotes. Numerous quotes are presented to emphasize the power of denial of harm in the decision-making processes employed by the interviewees for the Tar Creek project:

Water. We've got to drill a well. That's no problem. It'll be better than city water. (Stay-OK-5-e, lines 80-81)

It bothered me cause I didn't want the kids to have any health problems but I still had a hard time believing it cause it just seemed so far-fetched. (Stay-KS-5-e, lines 54-57)

They sent people in here, "experts" to tell us that the fish are poison. We eat fish all the time. We never got sick off those fish. (Stay-OK-2-b, lines 43-44)

They tested the kids and said they had lead in their blood. Everyone around here has lead in their blood. It was all blown up. Scared lots of people. (Stay-OK-2-b, lines 45-46)

Superfund? I don't know. I didn't understand all of that stuff. I don't know how they came up with all that. We never thought it was dangerous out there and we're not sick. My kids are not sick. (Stay-KS-1-a, lines 37-39)

I don't care what people said about it being toxic and dangerous to live out there. . .it was home. (Go-KS-5-e, lines 26-27)

I thought it was silly. I know that the mining companies made a mess, left a mess, but I never thought it was that dangerous. We played on chat piles. My dad used chat in the driveway. He'd go over there and get a truckload of it and haul it back to their place. He used it all over the place. (Go-OK-2-B, lines 61-64)

I think it's the dumbest thing I ever heard that they're moving the chat piles. Moving them? Why move them? What a waste of money. (Go-KS-5-e, lines 30-31)

We ate fish. My kids played on the chat piles. We used chat all over the farm. It's on the driveway. We used it when we mixed concrete so it's in some of the floors out there in the old house. (Go-KS-5-e, lines 62-64)

I didn't really know what was going on. Some kids were scared about it. I never thought much about it cause my dad said there wasn't nothing to it. We didn't worry much about it back then. (Go-KS-4-d, lines 45-47)

Well I have to tell you that we spent time playing on the chat piles. He had a dune buggy and we rode it all over the place. They say the chat is poison or something. I never thought that. We didn't get sick. (Go-KS-4-d, lines 39-41)

I guess it's a safe place. They kept saying it was dangerous but I never thought that. I thought it was safe. Kansas City's dangerous. Treece is safe. (Go-KS-4-d, lines 17-19)

Well I didn't really know what it meant back then. I guess I thought that it was a bunch of bull. They brought in all of these "experts" and I just thought they didn't know what they were talking about. We played in the chat. Never got sick. (Go-KS-3-c, lines 52-54)  
I think this is, or used to be, a good place to raise a family.  
I turned out okay. (Go-KS-3-c, lines 27-28)

I never worried about the kids. They played with their friends.  
They came home at dark. Didn't think anybody would hurt them.  
They played on the chat piles. I don't think they got sick from it  
(laughs). (Go-OK-3-c, lines 40-42)

A majority of the quotes from interviewees in the “Go” category include evidence of very strong denial of harm in the face of expert advice. In spite of this denial, the interviewees still decided to relocate. They appear to have mixed feelings about the Superfund designation in general and are torn regarding the relocation. The interviewees who did not relocate seem to emphasize their defiance toward the entire Superfund designation. This attitude may be an effort to reinforce their decisions, since those decisions contradict the expert advice. It could be assumed that the residents who rejected the buyout offer represent a group of stakeholders with more power and stability within the community than the stakeholders represented by those who accepted the buyout; however, this assumption would be in error. All of the interviewees for the Tar Creek project reported feelings that placed them in a situation outside of the processes that resulted in the Superfund designation and in the subsequent development and implementation of the buyout programs. Even though they were invited to attend town hall meetings and asked to give input regarding the situation, interviewees had no sense of inclusion in these processes. As the quotes below indicate, while some interviewees attended the meetings, their involvement was largely negative and resulted in reinforcement of their sense of being outsiders to the processes. When questioned in the interviews about the town hall meetings, most of the interviewees responded with negative comments about the process. The following quotes from the interviews emphasize the negative perception of the residents about the town hall meetings:

Attend the meetings? I attended every meeting. I asked questions.  
Didn't get any answers but I asked the questions. They couldn't, or  
wouldn't, answer my questions. They wasted all that money hauling

in soil for people's yards. It was a joke. It was a waste.  
(Stay-OK-1-a, lines 67-69)

I went to a few of them. Big joke. They had their "experts" there  
telling all of us "retards" how it was (laughs). (Stay-KS-4-D, lines 53-54)

Not at first. Just thought it was unnecessary. Later on though we started  
going to them. We always knew though that we would stay. We don't  
want to be anyplace else. After all these years we don't want to move.  
(Stay-KS-5-e, lines 60-63)

NO! We always minded our own business. I didn't care one or the other so  
I didn't think I had any business at those meetings. Guess I should have  
gone but it wouldn't have mattered. They were gonna do what they wanted.  
(Go-KS-5-e, lines 68-70)

We attended some of the meetings way back. We got more involved when  
they started the appraisals. That was a big mess. How could someone from  
Topeka or wherever have any idea about houses in Picher. Stupid.  
(Go-KS-3-c, lines 58-59)

No. My mom wanted to go but dad didn't think we should go.  
I went after they started having them at Treece city hall. I didn't  
go to any of the ones in Picher. (Go-KS-4-d, lines 49-51)

I went to a couple of em. It was a waste of time. They already knew  
what they were gonna do. It didn't matter what any of us thought. I  
had the yard clean up first and then the other stuff. (Go-OK-3-c, lines 53-55)

There was a definite distinction between the residents and the outsiders who came into  
the community to assess the situation. According to Schattschneider (1960), "There is a contrast  
between insiders who know much and outsiders who know very little. Some groups know where  
to go for information and how to take the initiative to take control of their situation. Others  
remain oblivious to what is happening. They do nothing and get excited only after it is too late"  
(p. 66). Grant (2005) argued that the basic distinction between insiders and outsiders is a  
distinction based on interest group strategies and how each group seeks to attain its goals. Grant  
emphasized that insider or outsider status by a group involves both a decision by government and  
a decision by the group concerned. The basic aim of such insider groups is to establish a

relationship whereby their views on particular legislative proposals will be sought prior to the announcement of the government's position (Grant, 2005).

Grant (2005) distinguished between those insider groups who are ascribed legitimate status by government and are allowed to be involved in meaningful consultations and those outsider groups who are unable to achieve that type of status and do not become engaged in consultation processes. There was an obvious insider/outsider situation in the Tar Creek area. The interviewees for the Tar Creek project overwhelmingly distrusted the outsiders. All of the interviewees referred to an “us” vs. “them” type of situation with regard to the so-called experts and EPA officials charged with the implementation of the Superfund program. The following quotes from the Tar Creek interviews illustrate the existence of an insider/outsider situation:

They brought in a bunch of doctors from back east and they stirred up all that stuff about the chat piles. (Stay-OK-1-a, lines 62-63)

They started all that stuff about high lead levels. Claimed it would “retard” people. I’ve seen plenty of retards in other places where there ain’t no lead. Ha,ha. I thought it was stupid. How did they know? (Stay-KS-4-d, lines 48-51)

I was for it as long as they would make it worth my while. I figured though that they’d try to screw us over. And they did. I hoped it would be enough so that we could move. I knew the kids would not want to move and change schools but I wanted it. (Go-KS-3-c, lines 63-66)

I thought it was silly. They came in and tested the kids blood way back and then started telling us that it was sooooo dangerous. (Go-OK-2-B, lines 55-57)

Interviewees in both categories “Stay” and “Go” reveal points of view that identify them as outsiders with regard to the processes involved with the Superfund designation and subsequent programs that were implemented. The interviewees felt shut out of the processes and display resentment toward the elites in charge of the procedures. The interviewees also indicate a heightened level of awareness regarding the impact that the initial disaster, the Superfund

designation, and the subsequent programs have had on the reputation of the community. These acknowledgements indicate an awareness of the application of a negative stigma that has been attached to the Tar Creek area.

In *Stigma*, Erving Goffman (1968) defined “stigma” as a term that refers to attributes that are deeply discrediting for the individual. When individuals feel stigmatized, power relationships are revealed (Goffman, 1968). Recall that Gaventa (1980) argued that when groups are powerless they are more likely to be complicit to the discourse of those in positions of power. Tar Creek residents, however, were suspicious of officials and media as well. Interviewees for the Tar Creek project acknowledged awareness of the stigma and some challenged it as evidenced by the following quotes:

I don't like that so many bad things have been said about Picher. It was a nice town, a big town, movie theaters, stores. Now people just know about the bad stuff. It's a shame that so many people forgot Picher. (Stay-OK-1-a, lines 35-37)

It's caused a lot of trouble you know. (Stay-OK-5-e, line 80)

Well there used to be a lot of places. We had nice restaurants and I remember the movie theater being open. There were some stores in Picher. Nice stores. (Stay-KS-1-a, lines 32-34)

We had everything we needed in Picher before all this nonsense. It's too bad. (Stay-OK-4-d, line 40)

I always thought the kids were safe. I never thought it was bad when I was in school. I guess most people know about the chat piles and everything that's happened. I think Picher and Treece got a bad deal and now people think it's real dangerous out there. I don't know..... I never thought it was dangerous (Go-KS-4-a, lines 24, 25)

I don't like what some of the news channels have said and I don't like the idea that it's sooo dangerous over there. I think it's a lot of talk and it hurt a lot of people (Go-KS-4-a, lines 64, 65)

What's happened the last few years -- just destroyed it. It's a shame you never saw it before all of this. The tornado didn't help either. They



never did clean up most of that mess. Lots of people left and never came back after that. (Go-OK-3-c, lines 33-35)

The majority of the comments acknowledging the negative stigma were made by interviewees in the “Stay” category. In most cases, they acknowledged the negative stigma and then tried to downplay it by suggesting that the situation is not as bad as suggested. The residents in the “Go” category seemed to make an effort to distance themselves from the area even though their new homes are relatively close to the Superfund site. None of them moved more than ten miles from Tar Creek. These efforts provide more evidence regarding the issue of denial with regard to the warnings that were issued concerning health hazards and other problems associated with the environmental disaster. The interviewees in both the “Stay” and “Go” categories for the most part indicated skepticism with regard to the Superfund designation.

During the interviews, several of the participants in the Tar Creek project indicated a very negative reaction to the Superfund designation and subsequent buy-out offers. This attitude, of course, also reflects the conflict between insiders and outsiders and experiential and expert knowledge. The perception of the buy-out as a joke may have had a powerful effect on the decision-making processes employed by the families of Tar Creek. Defining the buy-out offers as a joke may have allowed the residents to justify their rejection of the offers or to justify their dissatisfaction with the program if they accepted offers. To arrive at such negative conclusions about the buy-out offers, the residents may have relied on their own experiential knowledge. Describing the buy-out offers as a joke is more evidence of denial regarding the Superfund designation. The following quotes from the Tar Creek illustrate the idea of the buy-out as a joke:

All this buy-out stuff, I thought it was just silly. Never had any plan to move. Still don't. (Stay-KS-1-a, line 23)

I thought it was silly. Now I know that there's not a lot of people wanting to move out there but I don't see any reason to pay people to move. (Stay-KS-1-a, lines 41-43)

It was a joke. It was a waste. We always had water standing in the yard. The grass grew in it. It wasn't a big deal. I don't know why they were so worried about people's yards. We mowed the yard when it needed it. People in Picher don't go all out for fancy yards. (Stay-OK-1-a, lines 69-71)

I thought it was ridiculous that a bunch of EPA people came in here and started stirring up trouble. They blew it out of proportion. (Stay-OK-5-e, lines 54-55)

I thought it was ridiculous. They brought in these "experts" to test everything. Said the yards needed treatment. They took out all of the dirt and hauled in new dirt, planted grass. It just made a big mess. We had water standing all the time. That didn't help. (Stay-OK-3-c, lines 43-46)

I thought it was ridiculous after I started hearing the prices. You couldn't buy another place on that money. I didn't blame people for being upset. I never thought I'd move and then all of this happened so I guess it was for the best (laughs). It's all worked out (laughs). (Go-OK-3-c, lines 57-60)

Well I wasn't crazy about it at first but then it seemed like the best for us. (Go-OK-3-c, lines 61-62)

Superfund? (Laughs). It wasn't too super now was it? (Laughs). They didn't offer me a 'super' price for my place. (Go-OK-3-c, lines 50-52)

In most of the interviews, the residents expressed displeasure with the entire Superfund process from the initial stages that involved failed attempts at yard clean-up to the final stages that involved the buyout programs. The interviewees used the yard clean up examples to emphasize the parts of the program that were total failures and to support their point of view that the subsequent buyout programs were unnecessary and improperly implemented. The references to lawn care indicate an understanding of everyday activities that developed in response to the environmental conditions in the Tar Creek area. The conditions seemed normal to the residents.

Water standing in the yard, for example, was viewed as normal and acceptable. EPA officials were viewed as incompetent for questioning the standing water in the yards. These comments further emphasize the reliance on experiential knowledge on the part of the residents of the Tar Creek area in response to the Superfund designation.

The interviewees for the Tar Creek project appear to have relied heavily upon their own experiential knowledge and doubts about the warnings that were issued regarding potential health hazards associated with residence in the Tar Creek area. The interviews revealed, though, that other factors may have been more powerful guiding forces in the decision-making processes employed by the residents of Tar Creek. All of the interviewees waxed nostalgically about times past, community, home, and family during the interview conversations.

### **Nostalgia and Rootedness.**

The term nostalgia combines two concepts from the Greek *nostos* “to return home” and *algia* “a painful condition.” The term is defined as “a painful yearning to return home” (Davis, 1979, p. 14). The individual facing a life crisis may remember any period not containing the current crisis with fondness, allowing an escape from the present and its unpleasantness by slipping into another time. Will Rogers pointed out, though, that “Things aren’t like they used to be and probably never were” (Levy, 2011, p. 28).

In his book *Yearning for Yesterday – A Sociology of Nostalgia*, Fred Davis (1979) defined three aspects of nostalgia. Simple nostalgia appears most in the interviews wherein residents are inclined to view that things were better, healthier, happier, more civilized and more exciting than they are now (Davis, 1979).

Several of the families from Tar Creek included nostalgia when reconstructing their past. Their answers to the interview questions regarding home, community, and place resulted in nostalgic reflections about times past with comments that indicate a fondness for the past in the Tar Creek area. For example one interviewee remembers it as “home,” stating:

I don't care what people said about it being toxic and dangerous to live out there. It was home. And you know that old saying, “home is where the heart is?” Well that's how I feel. You spend 45 years in one place and it's home. We did a lot of work out there. (Go-KS-5-e, lines 25-27)

Other interviewees echoed the same sentiment with regard to nostalgic feelings about home and family. There were numerous comments during the interviews that indicated nostalgic feelings about “home.” The following quotes from the Tar Creek interviews illustrate the power of nostalgia as a factor in decision-making processes:

Back then it was a friendly place, a good place for kids to grow up. We didn't think about going anyplace else. It's home. (Stay-OK-5-e, lines 19-20)

We raised our family here. What more can I say? That's more important than anything else. We had good times and a few not so good. Lots of wonderful memories though in our house. You can't replace that. (Stay-KS-5-e, lines 36-38)

Never thought about being anyplace else. My whole family lives here. It's a good place. (Stay-OK-2-b, lines 13-14)

History, man. There's a lot of history out here. We feel connected to the land. When you have this kind of history. . . You feel it. The family is here. We're not leaving. (Stay-OK-2-b, lines 15-16, 24-25)

Well I was born here so I never thought about it. Lots of family memories over there. (Stay-OK-3-c, lines 30-31)

People lived their whole lives here. It's home. You've got several generations on the same place. People don't walk away from that easy. (Stay-OK-4-d, lines 18-20)

We bought our place on the highway in '56. Been there ever since. All the kids grew up there and now grandkids and we've got some great-grandkids. (Stay-OK-4-d, lines 14-16)

My kids grew up over there so it's pretty special to us. They liked it when we lived over there. They didn't think it was so bad. (Go-KS-4-d, lines 30-32)

It's just home. I never lived anywhere else so it's all I know. I don't think I'd like to live in a big town. (Go-KS-4-d, lines 26-27)

I'm a bit partial because of my family being from here so I know that I feel better about the place than lots of people. I guess I think that family connections make a place special and we always had that. People feel pretty strong about the area. There's a sense of pride. (Go-KS-3-c, lines 16-17)

Cardin was a town. Lots of people lived there. And Picher, they claim it was as big as Joplin back in the 30s. I don't know. We went the movies. They had restaurants. You wouldn't believe it now. (Go-OK-3-c, lines 25-27)

Regardless of position in the situation, "Stay" or "Go," all of the interviewees expressed very strong positive feelings about the Tar Creek area. None of the interviewees disparaged the Tar Creek area. All of the interviewees exhibited strong feelings of rootedness to the area. All of the interviewees expressed sentimental nostalgia toward the area with references to community, family and home.

The denial narratives from the Tar Creek interviews seem to reflect not so much a lack of understanding but rather a larger commitment to community. Residents seem to feel socially integrated into the community. Durkheim (1897) described social integration as a process through which people interact, connect, and validate each other within a community. According to Durkheim, "people experience mental, emotional and physical benefits when they believe they are a contributing, accepted part of a collective" (p. 38). The absence of such connections results in depression, isolation, and physical illness that Durkheim suggested prevent people from experiencing productive, happy lives (Durkheim, 1897).

Phenomenological ecology is concerned with residents of a community as they work and behave as ecological units. The focus of this approach is on what Relph (1976) referred to as “rootedness.” According to Relph, “Rootedness in a place leads to stability (or perceived stability)” (p. 24). Phenomenological geography attempts to capture the everyday lives of residents of a community as they [the lives] are lived. From a phenomenological perspective, place determines our experience, but attachment to place is more than just a mere preference (Katz, 2002). The phenomenological perspective helps explain the situation in Tar Creek from the perspective of the residents. They have lived the experience. The phenomenological lens offers insight regarding family and community experiences from a geographical and ecological perspective and heightens awareness of locality, community, and place.

Feeling connected, or integrated, into the community was obviously a factor that influenced decision-making processes for the families of Tar Creek. Some chose not to accept expert advice and monetary compensation to relocate. Reports of connection to extended family and the community are central to the interview conversations. The following quotes from the Tar Creek interviews illustrate awareness of connection v. isolation following the Superfund designation for the Tar Creek area:

That it’s such a friendly place. Neighbors know each other. Over there at the Manor we don’t have that. Some of those old people never had that. (Stay-OK-1-a, lines 32-33)

I’ve been all over the country and never seen anyplace I’d rather be. This is a beautiful part of the country, Oklahoma. You’re talking about the chat piles, aren’t you? (Stay-OK-4-d, lines 21-23)

It’s just home. My people have always lived here. (Stay-KS-1-a, line 22)

Notice all of the quotes that illustrate a powerful feeling of connection were made by interviewees in the “Stay” category. Relph (1976) suggested that rootedness in a community, or place, leads to stability, or perceived stability, for the individual. This rootedness provides an anchor that becomes very powerful. It is so powerful that it sometimes orders intentions and experiences. Rootedness in the places that we inhabit, according to Relph, “is so powerful that it sometimes orders intentions and experiences” (1976, p. 327).

This type of rootedness influenced decision-making processes for some families in Tar Creek. For some Tar Creek families, rootedness appears to be more important than money. The following quotes illustrate the power of rootedness over the proposed monetary values associated with the buyout offers. All of the quotes were made by interviewees in the “Stay” category:

We had over 50 years of happy times in that house on [street name].  
I wouldn't take a million dollars for those times or that old house.  
(Stay-OK-1-a, line 99)

It's just home. I've lived off from here. I'd rather be here though.  
It beats Texas. That's for sure. I made good money but didn't really  
like living there. (Stay-OK-3-c, lines 24-25)

Not interested. No amount of money would move me off that place.  
Too much history. (Stay-OK-2-b, lines 49-50)

The power of rootedness over monetary considerations was more evident among the “Stay” category than the “Go” category. It is interesting to note, however, that none of the interviewees placed much emphasis on money. The issue of low appraisals came up several times during the interviews, but it was never the central theme to any of the conversations. The feelings of rootedness and nostalgia associated with the area appear to have almost completely overshadowed monetary considerations for the residents who participated in the Tar Creek project. Those feelings of rootedness are also exhibited by the positive remarks that were made

in interviews regarding the chat piles. The chat piles appear to be symbolically significant to the residents despite their toxic nature.

McCrone (1998) suggested that “Identity markers can be found in everything ranging from clothing, humor and language, to food and drink” (p. 27). This same concept also applies to regions or areas within regions. McCrone refers to this occurrence as regional-branding or a form of labeling. This leads to the formation of regional identities that may become either assets or liabilities (McCrone, 1998). For residents and former residents of the Tar Creek area, the chat piles appear to represent an identity marker. The chat piles were mentioned in all twenty of the interviews for the Tar Creek project. In every case, the interviewee indicated a fondness for the chat piles. Some even suggested that the chat piles are symbolic representations of the community. The following quotes from the interviews illustrate the significance of the chat piles as identity markers for the residents of the Tar Creek area:

Oh, yeah. We’re famous for the chat piles. Everybody likes them. I’ve heard some people call them mountains and that they look like mountains from the air. I never been in an airplane. I’d like to see them that way. (Go-KS-4-a, lines 60-61)

I played on chat piles as a kid. My kids played on chat piles. . . Those chat piles are Picher. (Stay-OK-1-a, lines 31-32 and 65)

They came from all over back then to climb the chat piles – motorcycles, go-carts, then 4-wheelers. It was a lot of fun on them chat piles. You can see them from all over. (Stay-OK-5-e, lines 21-22)

Everyone had a lot of fun on them chat piles. (Stay-OK-5-e, line 48)

We were like everybody else back then. Dune buggy on the chat piles. The kids loved it. Where else could you do that? I tell you I never ever thought that the chat was dangerous. I’m still not completely convinced. (Stay-KS-5-e, lines 46-49)

We spent a lot of time on those chat piles. Kids just grew up playing on the chat piles. That’s what we did. (Stay-OK-3-c, lines 38-39)



They're a landmark. Most people love 'em. All the kids played on 'em. We always called 'em mountains. People use that chat for everything. We hauled many a load of chat to our place. (Stay-OK-4-d, lines 25-27)

The positive points of view regarding the chat piles are telling. The residents feel connected to the chat piles even though EPA considers them a significant factor in the toxic mixture that inhabits the Tar Creek area. The interviewees referred to the chat piles in terms of functionality, as the chat is used in driveways and as an additive for mixing concrete. They view them in terms of leisure activity since most of the interviewees reported playing on the chat piles. They also serve as identity markers, evidenced by the reference to chat piles as landmarks. The connection to the chat piles provides additional supportive evidence with regard to the strong feelings of rootedness and the nostalgia associated with it.

For some residents of Tar Creek nostalgia and a sense of rootedness may be more powerful than warnings from experts regarding health and safety concerns. Feelings of nostalgia and rootedness were also powerful factors for residents who accepted the buyout offers. While they opted to accept the buyout offer and relocate, the decision was not always an easy one. In almost every case, the decision-making process started with, or quickly resorted to, concerns over feelings of nostalgia and perceptions of rootedness.

### **Summary.**

This chapter presented the findings of the research for the Tar Creek project, which involved in-depth interviews with residents and former residents of the Tar Creek area. While satisficing appears to have been employed by the Tar Creek residents, it may have been propelled by rootedness and sentimental nostalgia more than purely rational settling. The evidence supports the first hypothesis for this project:

Greater levels of place attachment will be associated with decreased levels of risk perception regarding the SF designation -- i.e., place attachment trumps expert advice regarding health hazards.

The interviewees were overwhelmingly guided by feelings of rootedness and nostalgia that overruled the expert advice regarding health hazards and diminished risk perception. Even the residents who accepted the buyout offers express strong feelings of connection to the Tar Creek area and doubts about the expert advice.

The hesitation on the part of the residents who eventually accepted the buyout offers supports the second hypothesis for this project:

The risk perceived by Tar Creek residents lacks the urgency of that in other affected communities because the effects of the toxins are gradual and lack the immediate observable health effects of other toxins associated with other sites.

The interviewees overwhelmingly questioned the expert advice regarding the toxic nature of the area and particularly of the chat piles. They were unconvinced by the reports from EPA and other so-called experts. Since the conditions in the area have slowly developed over a long period of time, it is impossible to see the danger. The physical condition of the area seems normal to the residents. Some even believe that it is beautiful. In most cases, the decision to relocate was not an easy one. However, in most cases, the decision to remain in place in Tar Creek, seems to have been a given from the start of the process requiring very little contemplation. When confronted with “should I stay or should I go,” to stay was easy; to go was difficult.

The following chapter presents conclusions and policy implications that emerged from the Tar Creek project. The information may be useful for families facing relocation decisions

due to environmental conditions. It could also apply to situations without the crisis factor but requiring the making of a difficult decision. EPA officials may also benefit from the findings of this project since it emphasizes the point of view of the residents directly affected by Superfund designation. What works in policy manuals, even though it is well-intentioned, may not necessarily be the most prudent way to implement procedures. To stay is easier; to go is much more difficult.

## CHAPTER 5

### CONCLUSIONS AND POLICY IMPLICATIONS

The purpose of this project was to explore the responses, especially the decision-making processes, of the families currently residing in the Tar Creek area to the Superfund designation and subsequent clean-up effort and to provide a context for the current Tar Creek conditions. The project also explored the history of the Tar Creek region and its residents from the boom-town era to the present ghost-town condition. The hypotheses for this project were:

1. Greater levels of place attachment will be associated with decreased levels of risk perception regarding the SF designation -- i.e., does place attachment trump expert advice regarding health hazards?
2. The risk perceived by Tar Creek residents lacks the urgency of that in other affected communities because the effects of the toxins are gradual and lack the immediate observable health effects of other toxins associated with other sites.

#### **Conclusions.**

The Tar Creek interviews revealed information that supported the first hypothesis regarding place attachment and risk perception. For the interviewees place attachment, or rootedness, overwhelmingly trumped expert advice regarding health hazards. The following quote from the Tar Creek interviews exemplifies this point of view:

I don't care what people said about it being toxic and dangerous to live out there. It was home. And you know that old saying, "home is where the heart is?" Well that's how I feel. You spend 45 years in one place and it's home. We did a lot of work out there. (Go-KS-5-e, lines 25-27)

With regard to the need to relocate from the Tar Creek area following the Superfund designation, the majority of the interviewees indicated no feelings of urgency which supports the second hypothesis, suggesting a lack of urgency due to doubts regarding the expert advice about health hazards. The majority of the interviewees reported doubts about the Superfund designation in general and the associated health hazards. The doubts about health hazards, further supports the second part of hypothesis two: because the effects of the toxins are gradual and lack the immediate observable health effects of other toxins associated with other sites. The following quote from the Tar Creek interviews characterizes this point of view:

I always thought the kids were safe. I never thought it was bad when I was in school. I guess most people know about the chat piles and everything that's happened. I think Picher and Treece got a bad deal and now people think it's real dangerous out there. I don't know..... I never thought it was dangerous. (Go-KS-4-a, lines 24-25)

The interviews with Tar Creek residents emphasized the issues of family and of decision-making processes that led to immediate relocation, delayed relocation and refusal to relocate. The interviews offered the residents the opportunity to express their personal points-of-view as they experienced an environmental disaster, the subsequent Superfund designation and all phenomena associated with the event.

The outcomes support the literature on the topics of Bounded Rationality, particularly satisficing behavior, and the dynamics of power between the stakeholders in the Tar Creek area. The residents seem to have an awareness of very limited options regarding relocation. Most of the relocations resulted in moves of less than ten miles from the original home. None of the interviewees mentioned thoughts of moving beyond the immediate area. They chose locations

just outside the designated Superfund site. The majority of the relocated residents reported that their new situation was “good enough,” not great. The following quote from the Tar Creek interviews is representative of this point of view: new that I would take it. I didn’t like the offer but I just knew I had to take it. You kinda knew that Treece was going down so I thought the offer was better than nothing (Go-KS-4-a, lines 83-84)

The outcomes refute the Faces of Power literature which suggests that the residents were likely to allow EPA and other government officials to direct them toward decisions that they may or may not have necessarily chosen on their own accord. The residents who rejected the buyout offers seem to take pride in having rejected the offers. They seem to believe that their good judgment overruled the information that was presented from EPA and that they prevailed over the government. The following quote embodies this point of view: Superfund? I don’t know. I didn’t understand all of that stuff. I don’t know how they came up with all that. We never thought it was dangerous out there and we’re not sick. My kids are not sick. (Stay-KS-1-a, lines 37-39)

The Tar Creek interviews were intended to give a voice to the residents of the area by exploring the decision-making processes that were employed in response to the Superfund designation and subsequent programs that were implemented in an effort to address the disaster. Particular emphasis was placed on the residents’ reaction to the buy-out offers that were extended as part of the Superfund program. Half of the interviewees for the Tar Creek project accepted the buy-out offers and relocated from their homes. The other half of the interviewees chose not to accept the buy-out offers and remained in place in their homes within the Tar Creek area. All of the interviewees expressed strong feelings of rootedness and sentimental nostalgia related to their homes. Even the residents who accepted the buy-out offers reported feelings of

conflict with regard to leaving their homes, even though those homes sit inside the designated Superfund area and were determined to be unsafe for residence. The other residents, those who rejected the buy-out option, used their feelings of rootedness to help support their points-of-view and to justify their decisions to not accept the buy-out offers and remain where they were.

The power of rootedness and sentimental nostalgia seems to be at the heart of the decision-making processes that were employed in response to the buy-out offers. Nostalgia trumps expert advice regarding potential health hazards. It also trumps monetary considerations that may have improved situations for some residents. For the residents who participated in the Tar Creek interviews, nostalgia was also dominant in the power struggle between the insiders and the outsiders and between the experienced and the experts. EPA did not win, even though most would have predicted a victory. Sadly, the Tar Creek residents did not win either, even though several of them reported that they were victorious over EPA. The success of the Tar Creek residents in their power struggle with EPA and other power-players qualifies as a pyrrhic victory. Some of the residents think that they won the battle, but they all, including their opponent, lost the war. Nobody wins in situations such as the one in Tar Creek.

### **Implications for Public Policy.**

This study provides EPA officials and communities charged with implementing remedial action following a Superfund designation with information regarding the perspective of the local residents affected by the Superfund designation. A better understanding of decision-making processes employed by families and individual members of families in the face of crises should enhance the efficacy of the EPA remedial action protocols in future situations that require such action. This study provides families affected by the Superfund designation with the opportunity

to voice their points-of-view, including their reactions to the initial designation and their experiential knowledge as they processed the situation and made important decisions for their families. This study also benefits future families affected by environmental disasters that lead to Superfund designations as they transition through a time of crisis.

The results of this study reinforce the information in the literature on the topics of rootedness and nostalgia. The interviewees overwhelmingly reported strong nostalgic feelings for home and place. They reported very positive points-of-view about the Tar Creek area even in the face of the environmental disaster. Several interviewees mentioned the beauty of the area. They also emphasized the importance of family which, for them, is central to the idea of rootedness.

One of the main purposes of this research was to give a voice to the residents of the Tar Creek area. Several reports have described the area in terms of the environmental disaster, but no other research projects on the Tar Creek area have allowed the residents to share their points of view. Based on the results of this investigation, it seems safe to recommend enhanced efforts to address the needs of the people in communities affected by environmental disasters. While programs are, no doubt, well-intentioned, they seem to fall short in addressing the emotional toll experienced by residents of such communities. The research suggests that situations such as the disaster in Tar Creek are much more complicated in terms of human collateral damage than may have previously been acknowledged. EPA officials could benefit from listening to the perspective of the residents as they faced the disaster and the subsequent implementation of programs designed to clean up the disaster. It seems important to note that the application of pre-designed and laboratory-tested procedures may not always result in the intended outcomes. Each situation is obviously unique. The Tar Creek situation is no different. There are aspects of



the Tar Creek story that could not possibly have been anticipated by definitional fiat. The situation required empirical investigation to identify the unique aspects of the culture within the Tar Creek area. The lack of concern over monetary considerations for example, seems to contradict convention. It was surprising that the residents care more about the chat piles than buy-out offers. Such unanticipated outcomes reflect negatively on the EPA policies that seem to be designed as “one size fits all.”

The current findings support the Faces of Power literature by providing evidence of power differentials that are similar to those in other areas affected by environmental disasters, particularly the Appalachia case that was the focus of Gaventa’s work as presented in Chapter 2. The current findings, however, also refute the Faces of Power literature because EPA was unsuccessful in its attempt to promote the ideology of danger and fear. Successful promotion should have convinced all of the residents of the urgency of the matter, which would have resulted in wider acceptance of the existing situation. However, the skepticism expressed by the interviewees is evidence of EPA’s failed effort. The rationale behind the skepticism supports the literature on rootedness and nostalgia, the power of experiential knowledge and Simon’s theory of Bounded Rationality as presented in Chapter 2. The current findings also emphasize the importance of the early engagement of community members in these situations. The interviewees for the Tar Creek project reported feelings of exclusion from the processes that were taking place in their community. The most important stakeholders were not validated by EPA and this invalidation left them feeling shut out of the process. A different approach might have generated more positive outcomes. Even though the residents were invited to attend the public meetings and offer input, it seems obvious that Superfund is strictly a top-down policy that was imposed on the Tar Creek residents and met with great resistance.

## **Limitations.**

This research is obviously limited by a methodological approach that used snowball sampling of the residents and former residents of the Tar Creek area. The timing of the research may also present a limitation especially for the Oklahoma interviewees who represent the final hold-outs. For thirty years, they have been living inside a Superfund site and have been overtaken by a normalizing effect. This effect, no doubt, has an impact on their points-of-view. For the Kansas interviewees, the Superfund designation and implementation of the program is a recent (2009-2012) event. Some of them wanted designation because they felt left out during the thirty years that the Superfund has been in place in Oklahoma, since they were separated only by an arbitrary, but powerful, symbol: the state line. Ideally, this research would have explored the affected population rather than a small sample. That approach would have provided a more thorough representation of experiences but since the starting point was thirty years ago, would have been almost impossible to accomplish.

Further study in similar contexts should be conducted to further confirm or refute the findings of this project. Public policy practitioners need to recognize the significance of the relationship between local stakeholders and the government entities charged with implementing programs such as Superfund. Status as insider or outsider determines perception of the situation. In the Tar Creek case, the locals, who initially considered themselves insiders, became outsiders as the Superfund programs were implemented. Their new status as outsiders, or their perception of outsider status, contributed to their negative feelings about the entire process. In the future, effort must be made to validate the importance of local stakeholders and to bring them into the processes much earlier in the timeline of program implementation. If they do not receive early validation with regard to their importance in the process, they quickly become alienated, leading

to refusal to accept the policy that is being imposed upon them. If they receive the early validation, they are much more likely to accept the policy and support it.

Even with these limitations, the findings are significant in their support for the power of place, both rootedness and connection. An unexpected outcome of the research was the significant emphasis that the residents placed on the chat piles. They, the chat piles, are viewed as monuments and the interviewees feel a strong sentimental nostalgia toward them. Most of the interviewees describe the chat piles as landmarks and as central features to the identity of the community, as identity markers. This powerful feeling could not possibly have been anticipated by EPA officials charged with cleanup responsibilities. Residents were advised to remove the chat piles because they posed a clear and present danger. The residents, however, feel attached to the chat piles and are not afraid. This issue alone complicates the cleanup procedure. EPA and other so-called experts were unsuccessful in promoting ideology that defined the chat piles in negative terms. This inability undermined the authority of EPA and others and contradicts the faces of power literature which suggests that EPA should have prevailed over the sentimental nostalgia of the locals.

When confronted with “should I stay or should I go,”

To stay was easier; to go was much more difficult.

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Case 4:03-cv-00327-GKF-PJC Document 290, 2009

## **APPENDICES**

## Appendix A

### IRB Application Form

#### UNIVERSITY OF ARKANSAS INSTITUTIONAL REVIEW BOARD PROTOCOL FORM

The University Institutional Review Board recommends policies and monitors their implementation, on the use of human beings as subjects for physical, mental, and social experimentation, in and out of class. . . . Protocols for the use of human subjects in research and in class experiments, whether funded internally or externally, must be approved by the (IRB) or in accordance with IRB policies and procedures prior to the implementation of the human subject protocol. . . . Violation of procedures and approved protocols can result in the loss of funding from the sponsoring agency or the University of Arkansas and may be interpreted as scientific misconduct. (*see Faculty Handbook*)

Supply the information requested in items 1-14 as appropriate. **Type** entries in the spaces provided using additional pages as needed. In accordance with college/departmental policy, submit the original **and** one copy of this completed protocol form and all attached materials to the appropriate Human Subjects Committee. In the absence of an IRB-authorized Human Subjects Committee, submit the original **and** one copy of this completed protocol form and all attached materials to the IRB, Attn: Compliance Officer, OZAR 118, 575-3845.

1. Title of Project -- **Tar Creek Superfund Site: Family & Community Impact Analysis**
2. (Students **must** have a faculty member supervise the research. The faculty member must sign this form and all researchers and the faculty advisor should provide a campus phone number.)

Campus Phone	Name	Department	Email Address
Principal Researcher	<b><u>Gary D. Wilson</u></b>	<b><u>PubP</u></b>	
Co-Researcher			
Co-Researcher			
Co-Researcher			
Faculty Advisor	<b><u>Dr. Joe Schriver</u></b>	<b><u>PubP</u></b>	<b><u>jschrive@uark.edu</u></b>

3. Researcher(s) status. Check all that apply.

Faculty    Staff    **X Graduate Student(s)**    Undergraduate Student(s)

4. Project type

Faculty Research  
Staff Research

**Thesis / Dissertation**  
M.A.T. Research

Class Project  
Honors Project

5. Is the project receiving extramural funding?

**No** Yes. Specify the source of funds

Brief description of the purpose of proposed research and all procedures involving people. Be specific. Use additional pages if needed. (**Do not** send thesis or dissertation proposals. Proposals for extramural funding must be submitted in full.)

**Purpose of research: The study examines family decision-making processes in the face of an environmental disaster. The goal of the study is to determine why residents either chose to leave the Tar Creek area or to remain in place after many warnings about the health risks and several programs that would have subsidized relocation.**

**Procedures involving people: 20 in-depth interviews will be conducted with current and former residents of the Tar Creek area. The interviews will be tape-recorded and no identifiable information will be used. Each interview will be no more than one hour in length and will be conducted in a room reserved for private functions at a local restaurant in the community. The research will involve a 4-part snowball sample representing the following: 5 families from Kansas who are leaving the community; 5 families from Kansas remaining in place; 5 families from Oklahoma who left the community; and 5 families from Oklahoma who remained in place. Where possible the interviews will include two adult heads of household. Single parents, widows, widowers and divorcees will be considered heads of household and representatives for families.**

7. Estimated number of participants (complete all that apply)

\_\_\_\_\_ Children under 14

\_\_\_\_\_ Children 14-17

\_\_\_\_\_ UA students  
(18yrs and older)

40 Adults

8. Anticipated dates for contact with participants:

First Contact: May 23, 2011

Last Contact: October 14, 2011

9. Informed Consent procedures: The following information must be included in any procedure: identification of researcher, institutional affiliation and contact information; identification of Compliance Officer and contact information; purpose of the research, expected duration of the subject's participation; description of procedures; risks and/or benefits; how confidentiality will be ensured; that participation is voluntary and that refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled. See *Policies and Procedures Governing Research with Human Subjects*, section 5.0 Requirements for Consent.

Signed informed consent will be obtained. **Attach copy of form.**

Modified informed consent will be obtained. **Attach copy of form.**

Other method (e.g., implied consent). **Please explain on attached sheet.**

**I (pseudonym) verify that I am a voluntary member of this study and that I am over 18 years of age. I have agreed to participate in this study being conducted by Mr. Gary Wilson, a doctoral student in Public Policy at the University of Arkansas. I understand that all written and recorded data will be used for research purposes only. I understand that participation in this study will be confidential to the extent allowed by law and University policy and will not be released or recorded in any individually identifiable form. I also understand that any written reports of the research findings, including publications, will contain no identifiable information. My participation in this study is entirely voluntary. I understand that I may choose not to participate without any adverse consequences to you. However, should I choose to participate and later wish to withdraw from the study, there is no way to identify my anonymous data after it has been**

**transcribed by the investigator. I also understand that I may contact Iroshi Windwalder (479-575-2208) University of Arkansas Human Subjects Research representative if I have any complaints or concerns about this study that cannot be resolved with Mr. Wilson.**

Not applicable to this project. **Please explain on attached sheet.**

10. Confidentiality of Data: All data collected that can be associated with a subject/respondent must remain confidential. Describe the methods to be used to ensure the confidentiality of data obtained.

All tapes and transcriptions files will be stored in a locked file in Mr. Wilson's office and all data file-names will be encrypted. No names or identifiable information of participants will be transcribed from audio tapes. The list of participants will be known only to the primary researcher and faculty advisor.

11. Risks and/or Benefits:

Risks: Will participants in the research be exposed to more than minimal risk? Yes  No Minimal risk is defined as risks of harm not greater, considering probability and magnitude, than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests. Describe any such risks or discomforts associated with the study and precautions that will be taken to minimize them.

Risk: **There is minimal risk to participants.** Benefit: **Refreshments only will be provided.**

Benefits: Other than the contribution of new knowledge, describe the benefits of this research.

**There is very little research that focuses on the processes involved with family decision-making in the face of an environmental disaster. This research will give a voice to the victims of the circumstances in the Tar Creek area. This research will help to tell their story.**

12. Check all of the following that apply to the proposed research. Supply the requested information below or on attached sheets:

- A. Deception of or withholding information from participants. Justify the use of deception or the withholding of information. Describe the debriefing procedure: how and when will the subject be informed of the deception and/or the information withheld?
- B. Medical clearance necessary prior to participation. Describe the procedures and note the safety precautions to be taken.
- C. Samples (blood, tissue, etc.) from participants. Describe the procedures and note the safety precautions to be taken.
- D. Administration of substances (foods, drugs, etc.) to participants. Describe the procedures and note the safety precautions to be taken.
- E. Physical exercise or conditioning for subjects. Describe the procedures and note the safety precautions to be taken.
- F. Research involving children. How will informed consent from parents or legally authorized representatives as well as from subjects be obtained?
- G. Research involving pregnant women or fetuses. How will informed consent be obtained from both parents of the fetus?
- H. Research involving participants in institutions (cognitive impairments, prisoners, etc.). Specify agencies or institutions involved. Attach letters of approval. Letters must be on letterhead with original signature; electronic transmission is acceptable.
- I. Research approved by an IRB at another institution. Specify agencies or institutions involved. Attach letters of approval. Letters must be on letterhead with original signature; electronic transmission is acceptable.

- J. Research that must be approved by another institution or agency. Specify agencies or institutions involved. Attach letters of approval. Letters must be on letterhead with original signature; electronic transmission is acceptable.

13. Checklist for Attachments

The following are attached:

Consent form (if applicable) or

Letter to participants, written instructions, and/or script of oral protocols indicating clearly the information in item #9.

Letter(s) of approval from cooperating institution(s) and/or other IRB approvals (if applicable)

Data collection instruments

14. Signatures

I/we agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects/respondents are protected. I/we will report any adverse reactions to the committee. Additions to or changes in research procedures after the project has been approved will be submitted to the committee for review. I/we agree to request renewal of approval for any project when subject/respondent contact continues more than one year.

Principal Researcher _____	Date
Co-Researcher _____	Date
Co-Researcher _____	Date
Co-Researcher _____	Date
Faculty Advisor _____	Date

## Appendix B

### IRB Approval

#### Tar Creek Project -- IRB Approval Memo

May 18, 2011

#### MEMORANDUM

TO: Gary Wilson  
Joe Schriver

FROM: Ro Windwalker  
IRB Coordinator

RE: New Protocol Approval

IRB Protocol #: 11-04-623

Protocol Title: *Tar Creek Superfund Site: Family & Community Impact Analysis*

Review Type:  EXEMPT  EXPEDITED  FULL IRB

Approved Project Period: Start Date: 05/18/2011 Expiration Date: 05/17/2012

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Your protocol has been approved by the IRB. Protocols are approved for a maximum period of one year. If you wish to continue the project past the approved project period (see above), you must submit a request, using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. This form is available from the IRB Coordinator or on the Compliance website (<http://www.uark.edu/admin/rsspinfo/compliance/index.html>). As a courtesy, you will be sent a reminder two months in advance of that date. However, failure to receive a reminder does not negate your obligation to make the request in sufficient time for review and approval. Federal regulations prohibit retroactive approval of continuation. Failure to receive approval to continue the project prior to the expiration date will result in Termination of the protocol approval. The IRB Coordinator can give you guidance on submission times.

**This protocol has been approved for 40 participants.** If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or [irb@uark.edu](mailto:irb@uark.edu).

May 3, 2012

MEMORANDUM

TO: Gary Wilson  
Joe Schriver

FROM: Ro Windwalker  
IRB Coordinator

RE: PROJECT CONTINUATION

IRB Protocol #: 11-04-623

Protocol Title: *Tar Creek Superfund Site: Family & Community Impact Analysis*

Review Type:  EXEMPT    EXPEDITED    FULL IRB

Previous Approval Period: Start Date: 05/18/2011   Expiration Date: 05/17/2012

New Expiration Date: 05/17/2013

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Your request to extend the referenced protocol has been approved by the IRB. If at the end of this period you wish to continue the project, you must submit a request using the form *Continuing Review for IRB Approved Projects*, prior to the expiration date. Failure to obtain approval for a continuation on or prior to this new expiration date will result in termination of the protocol and you will be required to submit a new protocol to the IRB before continuing the project. Data collected past the protocol expiration date may need to be eliminated from the dataset should you wish to publish. Only data collected under a currently approved protocol can be certified by the IRB for any purpose.

**This protocol has been approved for 40 total participants.** If you wish to make *any* modifications in the approved protocol, including enrolling more than this number, you must seek approval *prior to* implementing those changes. All modifications should be requested in writing (email is acceptable) and must provide sufficient detail to assess the impact of the change.

If you have questions or need any assistance from the IRB, please contact me at 210 Administration Building, 5-2208, or [irb@uark.edu](mailto:irb@uark.edu).



## **Appendix C Letter of**

### **Explanation**

#### ***Tar Creek Superfund Site: Family & Community Impact Analysis***

##### **Purpose of Study:**

This study is being conducted by Gary Wilson, a doctoral student in Public Policy at the University of Arkansas. The study is under the supervision Dr. Joe Schriver, School of Social Work at the University of Arkansas. The study will fulfill the requirements of the Public Policy PhD., program at the University of Arkansas. Mr. Wilson is also a member of the faculty in the Department of Social Sciences at Pittsburg State University, Pittsburg, KS.

##### **Description of the procedures and approximate duration of the study:**

The interviews will be audio-taped. Each interview will last no more than one hour.

##### **Anticipated benefits resulting from this study:**

The potential benefits to you for participating in the study are the preservation of a historical record with regard to the Superfund designation and subsequent buyout and clean-up efforts in the Tar Creek area.

##### **Right to Withdraw:**

Your participation in this study is entirely voluntary. You may choose not to participate without any adverse consequences to you. However, should you choose to participate and later wish to withdraw from the study, there is no way to identify your anonymous data after it has been transcribed by the investigator.

**IRB Approval:**

This study has been reviewed and approved by The University of Arkansas' Institutional Review Board (IRB). The IRB has determined that this study meets the ethical obligations required by federal law and University policies. If you have questions or concerns regarding this study please contact the Investigator or Advisor. If you have any questions or concerns regarding your rights as a research subject, please contact the IRB Administrator.

**Investigator: Gary Wilson****IRB Administrator: Iroshi Windwalker**

Compliance Coordinator

120 Ozark Hall, University of Arkansas

(479)575-2208, FAX (479)575-3846

**Advisor: Dr. Joe Schriver**

School of Social Work, ASUP 106, University of Arkansas

479-575-3796    [jschrive@uark.edu](mailto:jschrive@uark.edu)

## Appendix D

### Statement of Consent

#### **Statement of Consent:**

I (pseudonym) verify that I am a voluntary member of this study and that I am over 18 years of age. I have agreed to participate in this study being conducted by Mr. Gary Wilson, a doctoral student in Public Policy at the University of Arkansas. I understand that all written and recorded data will be used for research purposes only. I understand that participation in this study will be confidential to the extent allowed by law and University policy and will not be released or recorded in any individually identifiable form. I also understand that any written reports of the research findings, including publications, will contain no identifiable information. My participation in this study is entirely voluntary. I understand that I may choose not to participate without any adverse consequences to you. However, should I choose to participate and later wish to withdraw from the study, there is no way to identify my anonymous data after it has been transcribed by the investigator. I also understand that I may contact Iroshi Windwalder (479-575-2208) University of Arkansas Human Subjects Research representative if I have any complaints or concerns about this study that cannot be resolved with Mr. Wilson.

#### **Statement of Consent:**

By granting the following interview you agree to participate in the project entitled, *Tar Creek Superfund Site: Family & Community Impact Analysis*.

## Appendix E

### Tar Creek Project -- Interview Protocol

#### Interview Questions:

1. How long have you lived / did you live in the Tar Creek region?
2. Why did you purchase a home in the Tar Creek region?
3. Can you tell me what you consider to be the most important feature of the Tar Creek region?
4. Are there other names for the neighborhoods within the Tar Creek region?
5. How would you describe the area to a friend who has never been here?
6. What do you like most about the area?
7. What do you like least about the area?
8. Have there been pleasures living here that you did not anticipate when you first purchased your home?
9. What is / was it like to live in your neighborhood on a daily basis?
10. Is / was the neighborhood important to your daily activities? How?
11. Other than inside your home, where is / was your favorite place in the neighborhood? Why?
12. Is there anything that we have not talked about that you think may have contributed to your feelings about the Tar Creek region?
13. What was your initial reaction to the Superfund designation?
14. Did you attend the town hall meetings to learn more about possible remedies?
15. What was your reaction to the proposed buyout plan?
16. If you reacted in a positive way to the proposed buyout plan – why?
17. If you reacted in a negative way to the proposed buyout plan – why?
18. If you accepted the proposed buyout offer, how did you arrive at your decision? How many members of your family were included in the decision-making process? Did any members of your family oppose the buyout offer? If so, when and why did they change their minds? Or, do they still oppose the decision?
19. If you accepted the buyout offer, what was the most difficult part of making the decision? What was the easiest part of making the decision?
20. If you rejected the proposed buyout offer, how did you arrive at your decision? How many members of your family were included in the decision-making process? Did any members of your family want to accept the buyout offer? If so, when and why did they change their minds? Or, do they still disagree with the decision to reject the offer?
21. If you rejected the buyout offer, what was the most difficult part of making the decision? What was the easiest part of making the decision for you?
22. Are you happy with your decision to accept or reject the buyout offer?

## Appendix F

### Codebook

Code	Type	Definition	Theoretical Perspective	Example from Transcript
Nostalgia	IN	A painful yearning to return home	Phenomenology	<p>Today it looks like a ghost town. Just makes me sick. Used to be a nice place.....movie theaters, fine restaurants and stores...the hotel. (Stay-OK-1-a, lines 29, 30)</p> <p>Back then it was a friendly place, a good place for kids to grow up. We didn't think about going anyplace else. It's home. (Stay-OK-5-e, lines 19,20)</p> <p>Just that it's home. I always lived around here and never really thought about being anyplace else (Go-KS-4-a, lines 38, 39)</p> <p>I'm partial to Treece cause it's "home." I don't care what people said about it being toxic and dangerous to live out there....it was home. And you know that old saying, "home is where the heart is?" Well that's how I feel. You spend 45 years in one place and it's home. We did a lot of work out there. (Go-KS-5-e, lines 25, 26, 27)</p> <p>We raised our family here. What more can I say? That's more important than anything else. We had good times and a few not so good. Lots of wonderful memories though in our house. You can't replace that. (Stay-KS-5-e, lines36-38)</p> <p>Never thought about being anyplace else. My whole family lives here. It's a good place. (Stay-OK-2-b, lines 13, 14)</p>

			<p>History, man. There's a lot of history out here. We feel connected to the land. (Stay-OK-2-b, lines 15, 16)</p> <p>When you have this kind of history. You feel it. The family is here. We're not leaving. (Stay-OK-2-b, lines 24, 25)</p> <p>Well I was born here so I never thought about it. Lots of family memories over there. (Stay-OK-3-c, lines 30, 31)</p> <p>It's just home. I've lived off from here. I'd rather be here though. It beats Texas. That's for sure. I made good money but didn't really like living there. (Stay-OK-3-c, lines 24, 25)</p> <p>It's just home. We always been here and don't know any other place(Stay-OK-4-d, line 53)</p> <p>We moved to the place on the highway in '56 and it's home. I don't want to live no place else. It's pretty quiet around here now and that's fine with me(Stay-OK-4-d, lines 40, 41)</p> <p>People lived their whole lives here. It's home. You've got several generations on the same place. People don't walk away from that easy (Stay-OK-4-d, lines 18-20)</p> <p>Bought our place on the highway in '56. Been there ever since. All the kids grew up there and now grandkids and we've got some great-grandkids. (Stay-OK-4-d, lines 14-16)</p> <p>My kids grew up over there so it's pretty special to us. They liked it when we lived over there. They didn't think it was so bad. (Go-KS-4-d, lines 30-32)</p>
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				<p>It's just home. I never lived anywhere else so it's all I know. I don't think I'd like to live in a big town. (Go-KS-4-d, lines 26, 27)</p> <p>I'm a bit partial because of my family being from here so I know that I feel better about the place than lots of people. I guess I think that family connections make a place special and we always had that. (W) People feel pretty strong about the area. There's a sense of pride. (Go-KS-3-c, lines 16, 17)</p> <p>We didn't think about going anyplace else. It's home. I guess people know about it now cause of all the problems. (Stay-OK-5-e, lines 20-22)</p> <p>Cardin was a town. Lots of people lived there. And Picher, they claim it was as big as Joplin back in the 30s. I don't know. We went the movies. They had restaurants. You wouldn't believe it now. (Go-OK-3-c, lines 25-27)</p>
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<p>Experiential Knowledge v. Expert Knowledge</p>	D	<p>depends on memory and recognition to make sense of situations</p>	<p>Phenomenology</p>	<p>I lived here my whole life and I'm not sick. I played on chat piles as a kid. My kids played on chat piles. They're not sick. (Stay-OK-1-a, lines 31, 32)</p> <p>We at fish our whole lives. Nobody got sick. (Stay-OK-5-e, line 54)</p> <p>Water. We've got to drill a well. That's no problem. It'll be better than city water. (Stay-OK-5-e, lines 80, 81)</p> <p>I thought it was bull. We all played on the chat piles. I'm not sick. My kids are not sick but I don't want them to get sick if there's something to it (Go-KS-4-a 68,69)</p>
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			<p>I think it's the dumbest thing I ever heard that they're moving the chat piles. Moving them? Why move them? What a waste of money. (Go-KS-5-e, lines 30, 31)</p> <p>We ate fish. My kids played on the chat piles. We used chat all over the farm. It's on the driveway. We used it when we mixed concrete so it's in some of the floors out there in the old house. (Go-KS-5-e, lines 62, 63, 64).</p> <p>It bothered me cause I didn't want the kids to have any health problems but I still had a hard time believing it cause it just seemed so far-fetched. (Stay-KS-5-e, lines 54-57)</p> <p>Bull ____! They sent people in here, "experts" to tell us that the fish are poison. We eat fish all the time. We never got sick off those fish. (Stay-OK-2-b, lines 43, 44)</p> <p>They tested the kids and said they had lead in their blood. Everyone around here has lead in their blood. It was all blown up. Scared lots of people. (Stay-OK-2-b, lines 45, 46)</p> <p>I didn't really know what was going on. Some kids were scared about it. I never thought much about it cause my dad said there wasn't nothing to it. We didn't worry much about it back then. (Go-KS-4-d, lines 45-47)</p> <p>Well I have to tell you that we spent time playing on the chat piles. He had a dune buggy and we rode it all over the place. They say the chat is poison or something. I never thought that. We didn't get sick. (Go-KS-4-d, lines 39-41)</p>
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			<p>I guess it's a safe place. They kept saying it was dangerous but I never thought that. I thought it was safe. Kansas City's dangerous. Treece is safe. (Go-KS-4-d, lines 17-19)</p> <p>We attended some of the meetings way back. We got more involved when they started the appraisals. That was a big mess. How could someone from Topeka or wherever have any idea about houses in Picher. Stupid. (Go-KS-3-c, lines 58, 59)</p> <p>Well I didn't really know what it meant back then. I guess I thought that it was a bunch of bull. They brought in all of these "experts" and I just thought they didn't know what they were talking about. We played in the chat. Never got sick. (Go-KS-3-c, lines 52-54)</p> <p>I think this is, or used to be, a good place to raise a family. I turned out okay. (Go-KS-3-c, lines 27,28)</p> <p>I never worried about the kids. They played with their friends. They came home at dark. Didn't think anybody would hurt them. They played on the chat piles. I don't think they got sick from it. (laughs) (Go-OK-3-c, lines 40-42).</p> <p>Well there used to be a lot of places. We had nice restaurants and I remember the movie theater being open. There were some stores in Picher. Nice stores. (Stay-KS-1-a, lines 32-34)</p> <p>Superfund? I don't know. I didn't understand all of that stuff. I don't know how they came up with all that. We never thought it was dangerous out there and we 're not sick. My kids are not sick. (Stay-KS-1-a, lines 37-39)</p>
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<p>Acknowledgement Of Stigma</p>	<p>IN</p>	<p>awareness of the stigmas attached to the situation</p>	<p>Faces Of Power</p>	<p>I don't like that so many bad things have been said about Picher. It was a nice town, a big town ...movie theaters, stores... Now people just know about the bad stuff. It's a shame that so many people forgot Picher. (Stay-OK-1-a, lines 35, 36, 37)</p> <p>It's caused a lot of trouble you know. (Stay-OK-5-e, line 80)</p> <p>I don't like what some of the news channels have said and I don't like the idea that it's sooo dangerous over there. I think it's a lot of talk and it hurt a lot of people (Go-KS-4-a, lines 64, 65)</p> <p>We are now defined by the toxic waste. That overshadows everything else about the community. It's all that people know now. (Stay-KS-5-e, lines 18-20)</p> <p>People jump to conclusions about the area. They don't realize that these families have been here for generations. I think that is an important issue. The families that call this home. They don't know anything else. (Stay-KS-5-e, lines 25-27)</p> <p>I think it's got a bad name now cause of all the stuff that's happened. It's still a good place to live though. I don't like that people say bad things about it. (Stay-OK-2-b, lines 26, 27)</p> <p>Well I was born here so I never thought about it. Lots of family memories over there. (Stay-OK-3-c, lines 30, 31)</p>
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				<p>Well I think all this buyout stuff has about ruined us. People think it's dangerous to live out here now and I say "bull___" to that. We're not sick. Raised all our kids here and they're not sick. It's ruined the place (Stay-OK-4-d, lines 44-46)</p> <p>We had everything we needed in Picher before all this nonsense. It's too bad. (Stay-OK-4-d, lines 36-38)</p> <p>I don't like all the talk about it being so dangerous. I never thought it was dangerous. (Go-KS-4-d, lines 28, 29)</p> <p>Well now people make fun of us for living in Picher. It's been a joke. Really sad. I don't think it's right. It's not the people's fault. You've got lots of hard- working, honest people out there. They don't deserve it. (Go-KS-3-c, lines 29-31)</p> <p>I think it's a pretty part of the country. The mines did some damage but this is a pretty place. I would tell them it's not as bad as you heard. (Stay-OK-5-e, lines 31, 32)</p> <p>It wasn't a bad place back then but you know what's happened over there these last few years. It's a big mess. (Go-OK-3-c, line 17)</p> <p>Well it's a ghost town now or a toxic dump. It's just a shame what's happened. I guess I'd tell them to look for the chat piles. You can't miss em. (Go-OK-3-c, lines 29-31)</p>
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				<p>What’s happened the last few years. Just destroyed it. It’s a shame you never saw it before all of this. The tornado didn’t help either. They never did clean up most of that mess. Lots of people left and never came back after that. (Go-OK-3-c, lines 33-35)</p> <p>I’d tell them that it used to be pretty nice. It’s a mess now, I guess, but I don’t think it’s near as bad as people say. (Stay-KS-1-a, line 21)</p> <p>The neighborhood? There’s nothing left of the neighborhood so I don’t guess it’s too important anymore. (Stay-KS-1-a, lines 30, 31) (laughs)</p>
Connection v. Isolation	D	Validates or in validates the individual within the community	Phenomenology	<p>That it’s such a friendly place. Neighbors know each other. Over there at the Manor we don’t have that. Some of those old people never had that. (Stay-OK-1-a, lines 32,33)</p> <p>Like I said, I’m not one of those who “loves” Treece so I guess it was easier for me to leave. I think we should have got more for the trailer and the lot – it was nice – but that’s how it goes (Go-KS-4-a, lines 65, 66)</p> <p>The family is strong. We take care of each other. There’s nothing better. People don’t know how lucky they are to have family. It’s all that matters. (Stay-OK-2-b, lines 29-31)</p> <p>I’ve been all over the country and never seen anyplace I’d rather be. This is a beautiful part of the country, Oklahoma. (w) You’re talking about the chat piles, aren’t you? (Stay-OK-4-d, lines 21-23)</p>

				It's just home. My people have always lived here. (Stay-KS-1-a, line 22)
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Rootedness v. Monetary value	D	Rootedness is so powerful that it sometimes orders intentions and experiences	Phenomenology	<p>We had over 50 years of happy times in that house on [street name]. I wouldn't take a million dollars for those times or that old house. (Stay-OK-1-a, line 99)</p> <p>That trailer in Treece was good enough and we had a baby on the way. His dad helped us get the trailer. It was old but still pretty nice (Go-KS-4-a, lines 74,75)</p> <p>Not interested. No amount of money would move me off that place. Too much history. (Stay-OK-2-b, lines 49, 50)</p> <p>Can't do anything else. It's all about the money. (Stay-OK-3-c, lines 72, 73)</p> <p>Well since the appraisal was so low, I couldn't take it. I'm not going to take out a mortgage at this age on a new house. I'm satisfied with the old house. It's good enough for me. (Stay-OK-3-c, lines 55-57)</p> <p>I was mostly concerned about getting ripped off. And I did. (Stay-OK-3-c, lines 53, 54)</p> <p>I was for it. As long as they would make it worth my while. I figured though that they'd try to screw us over. And they did. (W) I hoped it would be enough so that we could move. I knew the kids would not want to move and change schools but I wanted it. (Go-KS-3-c, lines 63-66)</p>
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				<p>(laughs) Well I don't know. It was home around here. We didn't know any better. (Stay-KS-1-a, line 13)</p>
Insider / Outsider Status	IN	There is a contrast between insiders who know much and outsiders who know very little	Faces Of Power	<p>They brought in a bunch of doctors from back east and they stirred up all that stuff about the chat piles. (Stay-OK-1-a, lines 62, 63)</p> <p>I knew that I would take it. I didn't like the offer but I just knew I had to take it. You kinda knew that Treece was going down so I thought the offer was better than nothing (Go-KS-4-a, lines 83,84)</p> <p>I don't see how someone from Topeka could know what's what in Treece. (Go-KS-4-a, line 75)</p> <p>NO! We always minded our own business. I didn't care one or the other so I didn't think I had any business at those meetings. Guess I should have gone but it wouldn't have mattered. They were gonna do what they wanted. (Go-KS-5-e, lines 68, 69, 70)</p> <p>Just really skeptical of the whole thing. I thought that they talked to all of us like we were stupid. I don't like that. (Stay-KS-5-e, lines 69, 70)</p> <p>Yeah, they definitely did not respect the people. Treated us like second class or something. I didn't like it. (Stay-KS-5-e, lines 71, 72)</p> <p>I knew that they would try to sell us short. Those old houses weren't worth anything. Sure not enough to move. I thought it was nonsense. (Stay-OK-3-c,</p>

				<p>lines 48, 49)</p> <p>I thought that double-wide was worth a lot more than what they gave me but what could I do? Nobody'd buy a trailer in Treece. It's all I could do. (Go-KS-4-d, lines 77-79)</p> <p>Didn't even have to think much about it. It's the only thing to do. Otherwise I'm stuck in Treece. (Go-KS-4-d, lines 58-60)</p> <p>Cause I knew that I needed help to move. I couldn't have done it without help. Nobody'd buy a trailer in Treece. (Go-KS-4-d, lines 54, 55)</p> <p>We were happy about it cause we thought we got ripped when Picher got it and we didn't. (Go-KS-4-d, lines 52, 53)</p> <p>We've got lots of friends around here. Nobody telling me what to do. (Stay-OK-5-e, line 34)</p> <p>Superfund? (laughs) It wasn't too super now was it? (laughs). They didn't offer me a 'super' price for my place. (Go-OK-3-c, lines 50-52)</p> <p>It was a waste of time. They already knew what they were gonna do. It didn't matter what any of us thought. I had the yard clean up first and then the other stuff. (Go-OK-3-c, lines 53-55)</p> <p>I think it's terrible what's happened but I'm not leaving. (Stay-KS-1-a, lines 35, 36)</p> <p>Attend the meetings? I attended every meeting. I asked questions. Didn't get any answers but I asked the questions. They couldn't, or wouldn't, answer my</p>
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				<p>questions. They wasted all that money hauling in soil for people’s yards. It was a joke. It was a waste. (Stay-OK-1-a, lines 67-69)</p> <p>I went to a few of them. Big joke. They had their “experts” there telling all of us “retards” how it was (laughs). (Stay-KS-4-D, lines 53-54)</p> <p>Not at first. Just thought it was unnecessary. Later on though we started going to them. We always knew though that we would stay. We don’t want to be anyplace else. After all these years we don’t want to move. (Stay-KS-5-e, lines 60-63)</p> <p>NO! We always minded our own business. I didn’t care one or the other so I didn’t think I had any business at those meetings. Guess I should have gone but it wouldn’t have mattered. They were gonna do what they wanted. (Go-KS-5-e, lines 68-70)</p> <p>We attended some of the meetings way back. We got more involved when they started the appraisals. That was a big mess. How could someone from Topeka or wherever have any idea about houses in Picher. Stupid. (Go-KS-3-c, lines 58-59)</p> <p>No. My mom wanted to go but dad didn’t think we should go. I went after they started having them at Treece city hall. I didn’t go to any of the ones in Picher. (Go-KS-4-d, lines 49-51)</p> <p>I went to a couple of em. It was a waste of time. They already knew what they</p>
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				were gonna do. It didn't matter what any of us thought. I had the yard clean up first and then the other stuff. (Go-OK-3-c, lines 53-55)
Mining Company Responsibilities	IN		Faces Of Power	<p>I do think that the mining companies should have cleaned up a little more. They bailed out and didn't clean up their mess. (Stay-OK-1-a, lines 27, 28)</p> <p>I do think that the mining companies need to be forced to clean up some of the mess. There's never any talk about them coming in and cleaning up. I don't get it. They made the mess and then they just left out. It's not right. Somebody needs to pay for all of that (Go-KS-4-a, lines 97,98)</p> <p>I would tell them that it's a ghost town and that the mining companies left a big mess. I think they should be the ones cleaning it up, not the government. (Go-KS-3-c, lines 22-26)</p> <p>I thought it was about time they decided to do something about all of the mess that was left. (Go-OK-3-c, lines 50-52)</p> <p>I think it's terrible what's happened but I'm not leaving. (Stay-KS-1-a, lines 35, 36)</p>
Chat Piles as Identity Markers	D		Phenom-enology	<p>I played on chat piles as a kid. My kids played on chat piles. .... Those chat piles are Picher. (Stay-OK-1-a, lines 31, 32, 65)</p> <p>They came from all over back then to climb the chat piles – motorcycles, go-carts, then 4-wheelers. It was a lot of fun on them chat piles. You can see them from all over. (Stay-OK-5-e, lines 21,22)</p>

				<p>Everyone had a lot of fun on them chat piles. (Stay-OK-5-e, line 48)</p> <p>Oh, yeah. We're famous for the chat piles. Everybody likes them. I've heard some people call them mountains and that they look like mountains from the air. I never been in an airplane. I'd like to see them that way ((Go-KS-4-a, lines 60, 61)</p> <p>We were like everybody else back then. Dune buggy on the chat piles. The kids loved it. Where else could you do that? I tell you I never ever thought that the chat was dangerous. I'm still not completely convinced. (Stay-KS-5-e, lines 46-49)</p> <p>We spent a lot of time on those chat piles. Kids just grew up playing on the chat piles. That's what we did. (Stay-OK-3-c, lines 38, 39)</p> <p>They're a landmark. Most people love 'em. All the kids played on 'em. (w) We always called 'em mountains. People use that chat for everything. We hauled many a load of chat to our place(Stay-OK-4-d), lines 25-27) .</p> <p>People know about the chat piles too – they came from all over back then to climb the chat piles – motorcycles, go-carts, then 4-wheelers. It was a lot of fun on them chat piles. You can see them from all over. (Stay-OK-5-e, lines 20-22)</p> <p>Everyone had a lot of fun on them chat piles.(Stay-OK=5-e, line 48)</p>
				<p>It was a joke. It was a waste. We always had water standing in the yard. The grass</p>

<p>Buyout as a Joke</p>	<p>IN</p>		<p>Satisficing/ Bounded Rationality</p>	<p>grew in it. It wasn't a big deal. I don't know why they were so worried about people's yards. We mowed the yard when it needed it. People in Picher don't go all out for fancy yards. (Stay-OK-1-a, lines 69, 70, 71)</p> <p>I thought it was ridiculous that a bunch of EPA people came in here and started stirring up trouble. They blew it out of per-portion (Stay-OK-5-e, lines 54, 55)</p> <p>I always thought the kids were safe. I never thought it was bad when I was in school. I guess most people know about the chat piles and everything that's happened. I think Picher and Treece got a bad deal and now people think it's real dangerous out there. I don't know..... I never thought it was dangerous(Go-KS-4-a, lines 24,25)</p> <p>I thought it was ridiculous. They brought in these "experts" to test everything. Said the yards needed treatment. They took out all of the dirt and hauled in new dirt, planted grass. It just made a big mess. We had water standing all the time. That didn't help. (Stay-OK-3-c, lines 43, 46)</p> <p>I thought it was ridiculous after I started hearing the prices. You couldn't buy another place on that money. I didn't blame people for being upset. I never thought I'd move and then all of this happened so I guess it was for the best. (laughs) It's all worked out (laughs) (Go-OK-3-c, lines 57-60)</p> <p>Well I wasn't crazy about it at first but then it seemed like the best for us. (Go-OK-3-c, lines 61, 62)</p> <p>All this buyout stuff. I thought it was just</p>
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				<p>silly. Never had any plan to move. Still don't. (Stay-KS-1-a, line 23)</p> <p>I thought it was silly. Now I know that there's not a lot of people wanting to move out there but I don't see any reason to pay people to move. (Stay-KS-1-a, lines 41-43)</p>
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Ref = Interview from which quote is taken

D = Deductive Reasoning, IN = Inductive Reasoning