

DEVELOPING A BROWNFIELDS POLICY FOR THE
STATE OF OKLAHOMA: IMPLEMENTATION OF A
SYNOPTIC NORMATIVE THEORETIC
FRAMEWORK FOR LEGITIMATED
ENVIRONMENTAL DECISION
MAKING

By

RITA RAE KOTTKE

Bachelor of Science
Oklahoma State University
Stillwater, Oklahoma
1980

Master of Science
Oklahoma State University
Stillwater, Oklahoma
1982

Submitted to the Faculty of the Graduate College of
the Oklahoma State University in partial fulfillment
of the requirements for the Degree of
DOCTOR OF PHILOSOPHY
July, 1998

COPYRIGHT

By

Rita Rae Kottke

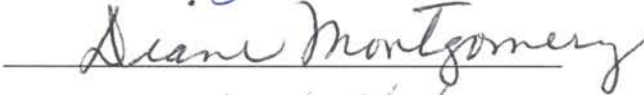
July 1998

DEVELOPING A BROWNFIELDS POLICY FOR THE
STATE OF OKLAHOMA: IMPLEMENTATION OF
A SYNOPTIC NORMATIVE THEORETIC
FRAMEWORK FOR LEGITIMATED
ENVIRONMENTAL DECISION
MAKING

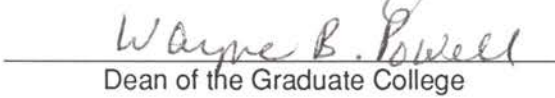
Dissertation Approved:


Committee Chairman


Dissertation Adviser






Dean of the Graduate College

PREFACE

The research discussed in this document is an attempt to incorporate a broader method of public participation into the decision making processes of the State of Oklahoma Department of Environmental Quality. The public participation research is being used to inform the development of Oklahoma's new Voluntary Cleanup and Brownfields Redevelopment Program. Since policy is not developed in a vacuum, many variables are beyond the control of the individuals charged with its implementation. However, the research methods described in this paper greatly enhanced the researcher's (and therefore the program coordinator's) understanding of the differing perspectives and needs of the various stakeholders involved with the cleanup and redevelopment of brownfields in Oklahoma.

Brownfields is a new concept and is suffering growing pains at all levels of government. The U. S. Environmental Protection Agency is encouraging states to create brownfield programs based on the needs of their citizens. Oklahoma, which has had an informal voluntary cleanup program for several years, passed brownfield legislation in 1996, to create a formal voluntary cleanup program with formal mechanisms for clarifying environmental liability. The U. S. Congress has introduced many legislative packages addressing Brownfields but, as of this date, has not legislated a program at a national level. There is a constant flux of issues at both the state and federal level and many uncertainties still exist. This study was performed to help clarify the issues needing attention in Oklahoma.

ACKNOWLEDGEMENTS

I would like to dedicate this academic work to my parents, William Eugene and Deloris Jean Kottke, who taught me perseverance, curiosity, and self reliance. I wish to thank them and the rest of my family for tolerating my eccentricities and academic obsession.

There are many people who have aided me in this effort, and their support was crucial to my completing the degree requirements. I would like to first and foremost acknowledge Dr. Will Focht for his oversight and excellent advice through this process. I wish to thank Dr. James Lawler for his continued support throughout the degree process. I want to thank Dr. Diane Montgomery and Dr. Mike Hirlinger for joining my committee so close to the end of my academic career. I also wish to give profuse thanks to the Graduate College, its governing board, and Dr. Molly Tovar for allowing me the extensions of time needed to complete this degree. I will be forever grateful to you all.

I would like to thank the Oklahoma Department of Environmental Quality for allowing me to explore the innovative approaches to public participation which are highlighted in this paper. I would especially like to recognize: Scott Thompson, Site Remediation Section Director for his support and commitment to public participation in the policy formation process; Hal Cantwell, Site Assessment Unit Supervisor for allowing me the time needed to complete the project; Barbara Rauch, Legal Counsel; for her excellent legal and political advice; and Mark Coleman, Executive Director, for allowing us to pursue this program research. I would also thank the U.S. Environmental Protection Agency for the EPA Fellowship which allowed me to finish my classwork

requirements and also for its promotion of finding new methods for public participation through its Brownfields Initiative. I especially thank Stan Hitt, Region VI Brownfield Coordinator, and Don Thurman, the Oklahoma Brownfield contact for Region VI, for their assistance throughout our program development process.

I would also like to recognize the contributions of my friends who continually encouraged and harassed me to finish the degree. Dr. Theresa Johnson, in particular, was ruthless with her continual reminders. I also wish to thank Dr. Robert Johnson for loaning the needed technology to complete the final report. I would like to thank Debra Hutton for her friendship and comedy relief that I so desperately needed throughout the pursuit of this degree. I would also like to thank Dr. Dennis Hrebec who gave me my first environmentally related job and also greatly aided me in my academic pursuits.

I want to graciously acknowledge the contribution of those listed above. This project could not have been completed without their help. Thank you all.

TABLE OF CONTENTS

Chapter	Page
INTRODUCTION.....	1
Issue to be Studied: Brownfields.....	2
The Issue of Superfund.....	3
The Issue of Oklahoma Law.....	7
Political Discontent and the Legitimation Crisis.....	8
Purpose and Objectives of the Study.....	11
Significance of the Study.....	12
 II. REVIEW OF THE LITERATURE.....	 13
Overview.....	13
Decision Making and Policy Formulation at DEQ.....	14
Theory.....	15
 III. METHODOLOGY.....	 24
Research Design	
The Synoptic Normative Theoretic Framework	
for Legitimated Environmental Decision Making.....	24
Identification of Stakeholders.....	25
The Interviews.....	26
Factor Analysis.....	44
 IV. FINDINGS.....	 46
Factor Interpretation.....	55
Implications for the Brownfield Program.....	93
Environmental Risk.....	93
Partial Cleanups.....	94
Trust.....	94
Who Should Be Involved in the Decision Making Process.....	95
Prospects for Avoidance of Conflict and Maximization of	
Stakeholder Approval.....	96
Summary.....	96

V. APPLICATION OF THE SYNOPTIC NORMATIVE THEORETIC FRAMEWORK FOR LEGITIMATED ENVIRONMENTAL DECISION MAKING.....	99
Substantive Legitimacy.....	104
Process Legitimacy.....	106
Stakeholder Legitimacy.....	107
Selecting a Decision Rule.....	109
VI. SUMMARY AND RECOMMENDATIONS.....	116
REFERENCES.....	118
BIBLIOGRAPHY.....	121
APPENDIXES.....	128
APPENDIX A--Oklahoma Brownfield Voluntary Redevelopment Act and Implementing Rules.....	129
APPENDIX B--Announcements for Opportunity to Participate and Research Documents.....	149
APPENDIX C--Institutional Review Board, Human Subjects Review.....	157

LIST OF TABLES

Table	Page
2.1 Focht's Characteristics of Ideal Legitimacy Contexts.....	20
3.1 Demographic Characteristics of Interview Participants.....	29
3.2 Brownfield Q Sample.....	34
3.3 Demographic Characteristics of P Sample.....	40
4.1 Re-ordered Factor Matrix.....	48
4.2 Item Descriptions.....	50
5.1 Focht's Stakeholder Legitimacy Claims and Legitimated Decision Making and Communication Strategies.....	103

LIST OF FIGURES

Figure	Page
2.1 Focht's Proportionally Adjusted Diagram of Idealized Legitimacy Contexts.....	19

NOMENCLATURE

Brownfields--abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination.

CERCLA--Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (aka Superfund). CERCLA provides a system for identifying and cleaning up chemical and hazardous substance releases into any part of the environment (Worobec & Ordway 1989).

CERCLIS--Comprehensive Environmental Response, Compensation, and Liability Information System. The EPA database created to track sites through the Superfund system.

Concourse--the universe of opinion, the representation of all of the opinions surrounding any topic; the population of statements.

DEQ--State of Oklahoma Department of Environmental Quality

EPA--United States Environmental Protection Agency

ERB--Emergency Response Branch of the EPA

Factor Array--"a composite Q sort, one for each factor" (McKeown & Thomas 1988, p. 13).

Factor Loading--saturation of factors used to interpret the hypothetical nature of the factors.

Factor Matrix--rectangular array of factors arranged in rows and columns, on which mathematical operations can be implemented.

HRS--Hazard Ranking System

Innocent Landowner--term used under CERCLA to indicate a landowner who is not responsible for an environmental cleanup. Innocent Landowners must be able to show that they were not aware of the contamination of the property when they acquired it and that they followed due diligence in purchasing the property of that they came into possession of the property through no conscious effort of their own, i.e., through inheritance.

LULUs--Locally Undesired Land Uses.

Naturalist Inquiry--a type of scientific data gathering that provides for no manipulation by the inquirer and that imposes no a priori units of outcome (Lincoln & Guba 1985).

Naturalistic Paradigm--a scientific world view that believes in collecting data with minimal influence from the investigator and without establishing the expected hypothesis prior to data collection.

NCP--National Contingency Plan

NPL--National Priorities List

PRP--Potentially Responsible Party, term used under CERCLA to indicate the entities which may be responsible for the cleanup off a contaminated site.

P-Sample--"the set of persons who are theoretically relevant to the problem under consideration" (Brown 1982, p. 192); representative stakeholders; p-set.

Q Methodology--an operant approach designed to assist in the orderly examination of human subjectivity (Brown 1980).

Q Sample--a subset of the concourse; "a sampled set of stimuli" (McKeown & Thomas 1988, p. 12).

Q Sort--the operation medium which allows a respondent to model his/her viewpoint by rank ordering the Q sample.

SARA--Superfund Amendments and Reauthorization Act of 1986.

Stakeholder--anyone who believes s/he will be affected by the final policy.

Superfund--The fund created by Congress to cleanup abandoned hazardous waste sites; also a common name for the act that created the fund (CERCLA).

CHAPTER I

INTRODUCTION

This thesis focuses on the American public's perception that there is a lack of legitimacy in the decision making processes of massive modern bureaucracies. The project addresses the problems inherent in instituting additional bureaucratic programs while ensuring their legitimacy (Barber 1977, Edsall 1996, Focht 1995, Ruckelshaus 1995). Specifically, the thesis examines the process of incorporating public participation into a state agency's decision making processes during the development of a new environmental program. The study then expands on the knowledge gained to ascertain a more universal understanding of the legitimacy context of the agency's decision making processes.

The State of Oklahoma Department of Environmental Quality (DEQ) was tasked by the passage of the Oklahoma Brownfields Voluntary Redevelopment Act [27A O.S. Supp. 1997, Section 2-15-101 through 110] (Appendix A) to create a program to encourage the cleanup and redevelopment of properties perceived to be contaminated with hazardous substances. In addition, the United States Environmental Protection Agency (EPA) provided funds to the DEQ to aid in the creation of the program with specific directions to provide a meaningful opportunity for public participation in the decision making process (EPA 1995a). The issues involved in redeveloping contaminated properties involve many disciplines and stakeholder groups representing myriad interests. Formulating a program that effectively addresses the issues of concern to

Oklahoma stakeholders, meeting EPA's directive to include public participation in the decision making process, and ensuring that the final policy and program are perceived as legitimate by the citizens of Oklahoma were monumental tasks. A guide or model to aid in the process was necessary. The environmental decision making model developed by William Focht, Ph.D. (Focht 1995) was utilized to plan and implement a public participation project to inform the decision making process. In addition, the model provides useful information about the public's perception of the decision making processes of the DEQ.

Focht's Synoptic, Normative, Theoretic Framework for Legitimated Environmental Decision Making was designed to aid in building legitimacy into bureaucratic environmental decisions. Focht states that the key to identifying legitimate decision making strategies is to understand the context in which the need for the decision arises. The following examines the brownfield issue, the public's dissatisfaction with current bureaucratic decision making practices, and Focht's framework for incorporating stakeholder input into the decision making process. The thesis then assesses, through naturalistic inquiry, the views of Oklahoma stakeholders in relation to the issues surrounding brownfield redevelopment, further delineates stakeholders views through the use of Q methodology, and then applies Focht's model to the resulting information to clarify the type(s) of decision processes needed to ensure the success of the program.

Issue to be Studied: Brownfields

The State of Oklahoma Department of Environmental Quality (DEQ) is in the process of implementing a new program to encourage the cleanup and redevelopment of idled or abandoned industrial properties contaminated with hazardous substances, often referred to as brownfields. A brownfield is defined by Oklahoma law as "an abandoned,

idled or underused industrial or commercial facility or other real property at which expansion or redevelopment of the real property is complicated by environmental contamination caused by regulated substances" [Oklahoma Brownfields Voluntary Redevelopment Act, HB 2972, p. 2, (27A O.S. Section 2-15-101 through 110)]. A brownfield can be thought of as any piece of real estate about which there is suspicion that hazardous chemicals were used at the facility and contamination may still remain on site. Examples of brownfields include: former industrial properties, gasoline stations, dry cleaners, recycling facilities, illegal methyamphetamine labs, paint shops, landfills, maintenance facilities, etc.

The brownfield law and implementing rules established a formal voluntary cleanup program in Oklahoma; however, for the program to actually address the problems intrinsic to brownfield redevelopment, DEQ needs a more complete understanding of the extent of the problem and alternatives for its solution.

The Issue of Superfund

Brownfields have resulted from environmental legislation and accompanying regulations passed in the 1970s and 1980s. The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA, aka Superfund) and the Superfund Amendments and Reauthorization Act of 1986 (SARA) have been especially instrumental in devaluing property suspected of contamination. These laws attached massive legal liability for historical contamination resulting in environmental degradation of real property. The liability for cleanup of a contaminated site under CERCLA and SARA is retroactive and strict, joint and several, meaning that anyone who held title to, leased, or deposited hazardous substances on a piece of property can be held responsible for the entire cost of cleanup, plus penalties (EPA 1980, Worobec &

Ordway 1989). The intent of Superfund is to force the polluter to pay for the cleanup of contamination it left on the property.

Unfortunately, CERCLA has had unpleasant side effects. In reality, a site must qualify under the Hazardous Ranking System (HRS) before it can be included in the National Priorities List (NPL) or be subjected to removal action by the EPA. Superfund applies to those sites that pose a major threat to human health and the environment. In the process of looking for these ticking timebombs, thousands of sites were investigated. The CERCLIS (Comprehensive Environmental Response, Compensation, and Liability Information System) database was designed to track all properties investigated under the authority of CERCLA. Every site that was investigated was added to the CERCLIS database, where they remained due to lack of a mechanism for their removal. Sites with little or no contamination were mistakenly added to CERCLIS due to lack of, or incorrect, historical information concerning former activities at those sites (personal experience).

Although CERCLIS was intended to track sites through the Superfund system, it has also become a convenient screening resource used in pre-purchase screening of property, referred to as Phase I and Phase II environmental assessments (ASTM 1996). Lenders require Phase I assessments prior to lending money for the purchase of real property. Phase I assessments review historical information and governmental files for information concerning the property in question. A property's inclusion on CERCLIS is an immediate red flag to lenders, buyers, and developers and will often stop the sale of the property. Properties on CERCLIS, as well as neighboring properties, have become economically devalued due to the possibility of migration of hazardous substances through environmental media.

Sites need not be included on CERCLIS to qualify as brownfields. The apprehension associated with assuming environmental liability with property

acquisition extends to all industrial property and much commercial property, especially gasoline stations and dry cleaners.

Lending institutions, for fear of becoming potentially responsible parties (PRPs) under CERCLA by merely holding title to contaminated sites, refuse to lend money on properties suspected of contamination. PRPs have been held responsible for the entire cost of cleanup, plus fines and penalties, for merely holding title to property that was contaminated by a previous tenant. Though the cost of cleanup can be in the millions of dollars per site, the cost of legal support in battling EPA over responsibility and in suing other PRPs for contributions to cleanup costs, plus the costs involved in third-party legal actions, can also be enormous. There is also the perception (not entirely unfounded) that EPA will pursue "deep pockets" for cleanup costs when the actual culprits cannot afford the cleanup. Owners cannot sell or lease their property, buyers are afraid to purchase such lands, lenders refuse to loan on such property, and insurance companies have specifically excluded environmental contamination from the policies they issue. These properties have become more expensive than they are worth and have often been abandoned by their owners.

Often, municipalities end up owning these properties. Companies have often donated former industrial properties to cities when they close a plant. Many cities and counties have found themselves in possession of hazardous waste sites when properties were taken for back taxes. Properties in convenient locations with access to existing infrastructure lie dormant due to excessive environmental liability. The dormancy of such properties can pose very high economic and social costs to a community and the larger society.

EPA's Brownfields Action Agenda was jump-started by the removal of 25,000 sites from the national CERCLIS inventory in order to encourage the redevelopment of

these properties (Association of State and Territorial Solid Waste Management Officials 1995). More than 600 of these sites are located in Oklahoma (EPA 1998).

The identification and documentation of contaminated properties has additional repercussions. The older industrial areas of cities are being idled, abandoned, or underused as industries move to greenfields. This exodus of industry from the inner cities has led to a decrease in the tax base and unemployment. It has also contributed to urban sprawl as companies move to undeveloped and uncontaminated areas on the outskirts of cities, away from existing and convenient infrastructure, which in many cases is still being paid for through municipal bonds. These new suburban industries require new infrastructure--roads, sewers, water lines, buildings, etc., are paid for by the taxpayer to keep (or lure) companies in (to) the community or state (ASTSWMO 1995).

Over the years, abandonment of the industrial areas of cities, the problems related to the strict, joint and several liability under CERCLA, and the number of innocent landowners¹ who were caught in the system and have been financially ruined have led Congress and EPA to re-examine their policies. Congress is currently debating the reauthorization of CERCLA which contains brownfields language [105th Congress, Senate Bill 8, Superfund Cleanup Acceleration Act of 1997] (Bartsch & Collaton 1997), and there are several bills in Congress which would legislate a federal brownfields program.²

Although many question its motives, EPA is working within the current CERCLA framework to find solutions to problems relating to brownfields. EPA issued its Brownfields Action Agenda (U.S. EPA 1995b) and the Brownfields Partnership Action Agenda (U.S. EPA 1997) in an attempt to rectify many of the problems associated with the redevelopment of contaminated properties. EPA through its 1995 Brownfields

Action Agenda promoted the idea of empowering the states to customize brownfield policies to the needs of their constituents (U.S. EPA 1995).

The Issue of Oklahoma Law

Unlike some of the traditionally industrial states, Oklahoma does not have a state Superfund law. Oklahoma relies on the state's nuisance law (50 O.S. Supp. 1991, Section 2-11) to force landowners to clean up hazardous waste on their property. The Oklahoma Environmental Quality Act defines hazardous wastes as a nuisance (27A O.S. Supp. 1996, Section 1-3-101 *et seq.*). The nuisance laws provides Oklahoma a means for recovering costs expended to mitigate a hazardous waste site and for forcing a responsible party to mitigate an environmental threat.

The state's environmental laws, however, are not the the driving force behind the brownfield movement in Oklahoma. The major political force that encourages the development a brownfield program for the State of Oklahoma is CERCLA and the willingness of EPA to sign Memoranda of Agreement (MOA) with states. In these MOAs, EPA agrees not to pursue sites under CERCLA that are investigated and cleaned up under the authority of a state voluntary cleanup/brownfields program. Given the indisputed political perception that everyone wins by brownfield redevelopment, (environmental timebombs are cleaned up, economic development proceeds, community eyesores/public nuisances are eliminated, jobs are brought back to the inner city, tax revenues increase, and the community thrives), legislating a program for Oklahoma was actively pursued.

On June 14, 1996, the Oklahoma Brownfields Voluntary Redevelopment Act (27 O.S. Supp. 1997, Section 2-15-101 through 110) became law. The DEQ was instructed to write emergency rules that were instituted on March 18, 1997 (Oklahoma Environmental Code, 252:220) (see Appendix A). To make brownfield sites more attractive to developers, a limited number of sites was added to the eligibility

requirements for incentives provided under the Quality Jobs Act [68 O.S. Supp. 1997 Section 3604 (E - H)]. The state continues to offer tax incentives under the Oklahoma Sales Tax Code [68 O.S. Supp. 1997 Section 1359 (7)] for costs relating to machinery, equipment, fuel, and chemicals used in the remediation of hazardous waste sites. The federal government also offers tax incentives through the Taxpayer Relief Act of 1997 (PL 105-34) to encourage the cleanup and reuse of contaminated properties in certain distressed areas (Appendix A). The state has thus begun implementing a brownfields program and is currently negotiating a Memorandum of Agreement with EPA whereby EPA agrees not to pursue sites under CERCLA that are participating in Oklahoma's Voluntary Cleanups and Brownfields Redevelopment Program.

This research represents an effort by the DEQ to help ensure that the Brownfields Program addresses the needs of stakeholders and the concerns of the public in the development of the evolving program. It is essential to the effectiveness of the program that it addresses the concerns of all Oklahomans and not be perceived as a tool for big business to avoid liability for its past actions. It is ultimately up to Oklahoma stakeholders to ensure that the program works as it is intended. If stakeholders do not accept and participate in the program, the efforts to create a program will be fruitless.

Political Discontent and the Legitimation Crisis

General criticisms of the concept of brownfields are that (1) brownfields programs are a means for big business to avoid its liability under CERCLA and SARA and (2) the public suspects that cleanups under the authority of a state brownfield program may not be as thorough as a cleanups under Superfund. These suspicions tend to become amplified by general distrust of bureaucratic decision making, especially when dealing with issues that are as complex and dangerous as hazardous substances. Environmental decisions and the policies that direct them may be suspect in the minds of those who will

be affected by, but feel that they have no voice in, the decision process. Focht (1995) in his treatise on environmental decision making and the siting of locally unwanted land uses (LULUs) summarized many aspects that also pertain to decision making for brownfield issues. He states,

...conflict is, in large part, due to a fundamental clash of values and expectations of proponent and opponent stakeholders. Developers believe that (1) they have a right to develop a piece of property unless it is technically unsuitable, (2) economic and technological development provide net benefits to the...community, and (3) they are acting as good neighbors who wish to inform the community of their decisions but see no reason for sharing decision making power in arenas that they believe are their own province. A community, ...on the other hand, (1) believe that it has a right to control its own destiny, (2) distrusts technical and legalistic decision making procedures that are not in accord with traditional means of community decision making, and (3) perceives that the facility will produce net costs and risks to the community. (p. 7)

Add to that mix a distrust of government's motives and the controversy quickly intensifies.

There is a growing discontent in the United States with the perceived degradation of democratic principles. A growing sense of powerlessness pervades the general public, along with a palpable distrust of varying governmental agencies and officials. This phenomenon is being extensively covered by the popular press (Edsall 1996; Morganthau, Hosenball, Isikoff, Liu, Keene-Osborn & Jorgensen 1995)³ and political experts (Barber 1977; Gormley 1989; Hart 1978; The Harwood Group 1991; Morone 1990; Ruckelshaus 1995). The growing bureaucracies of the federal and state governments have separated the people from their power as participants in the system. The legitimacy of governmental decisions is being questioned as more and more regulatory power has been handed to unelected bureaucrats. "The grudging stance toward government comes from the perception that public power threatens civil liberty;

the tension is especially sharp in administrative agencies, for they wield power unlegitimated by formal mechanisms of representation" (Morone 1990, p. 2).

Eruptions of violence against the government has awakened many bureaucrats and government officials to an acute awareness of the public's discontent and distrust. Although violence against the government may be the province of a "secretive, paranoid, and profoundly alienated political subculture" (Morgenthau, et al. 1995, p. 36), there is evidence that "Americans are deeply dissatisfied and resentful....that the confidence of the public in its future, its institutions and its elected officials has steadily declined over the last 25 years (Edsall 1996, p. 37). As the history of the United States reflects, pervasive dissatisfaction with government can be the impetus for reform (Gormley 1989), while others believe that "discontent is an essential ingredient of progress. It can be part of the natural order, a sign of health and vitality, and a precursor to creativity or advancement to higher levels of achievement" (Edsall 1996, p. 39). Partially in response to this general discontent and distrust, governmental organizations are reevaluating their decision making methods and are seeking creative approaches to increase public input in the decision making process (EPA 1995; Oklahoma Department of Environmental Quality 1995).

In light of the distrust felt by many Americans for bureaucratic programs, how does a state bureaucracy implement a new governmental program and ensure that it is accepted by the public as legitimate? In other words, how can it ensure that its actions meet its fiduciary responsibility to act in the collective public interest (Focht 1995)? Legitimacy has been defined by Dahl (1965,) as a "belief that the structure, procedures, acts, decisions, policies, officials, or leaders of government possess the quality of 'rightness,' propriety, or moral goodness and should be accepted because of this quality--irrespective of the specific content of the particular act in question."

Dahl continues: "although many different kinds of political systems can acquire legitimacy, democracies are more in need of it than most other systems. For in the long run democracy cannot be forced on a group of people against its will..." (p. 19).

Focht (1996b) indicates that "the social contract theory of governance requires that government policies and decisions be legitimated by [its] citizens," and goes on to define legitimation as "voluntary and informed stakeholder consent" (p. 1). MacLean (1986, p. 21) writes that "consent to centralized decisions is crucial in a society that is nonauthoritarian" (p. 21), but he also proclaims that to allow each individual in the society the right to veto a central decision would have intolerable results. Hence, the necessity of hypothetical consent where "consent to the decision process implies consent to the decision outcome" (Focht 1996b, p.1). Therefore, political legitimacy is dependent upon the decision processes incorporated within the system.

Purpose and Objective of the Study

The purpose of the research is to inform the development of a state policy and program for the redevelopment of contaminated properties in Oklahoma. Information gained during the stakeholder research project will guide the evolution of the Oklahoma Voluntary Cleanup and Brownfields Redevelopment Program by concentrating DEQ's program activities in an efficient manner. It will also help ensure that tax dollars are spent wisely and are not haphazardly thrown at the problem. The objective of the research is to ensure that DEQ addresses the actual issues faced by stakeholders who are associated with the cleanup and redevelopment of brownfields in Oklahoma. By actively seeking the viewpoint of stakeholders and the general public in the development of the program, the legitimacy of each individual brownfield project will be enhanced.

Significance of the Study

The project represents a significant effort to find innovative methods to incorporate public opinion into the development of state environmental programs. It also represents an opportunity to test, in an actual policy making setting, the decision making model proposed by Dr. Focht (1995).

NOTES

¹Innocent landowner is a term used under CERCLA/SARA to indicate a landowner who is not responsible for an environmental cleanup. Innocent Landowners must be able to show that they were not aware of the contamination of the property when they acquired it and that they followed due diligence in purchasing the property of that they came into possession of the property through no conscious effort of their own, i.e., through inheritance.

²105th Congress, Senate Bill 18, Brownfields and Environmental Cleanup Act of 1997; Senate Bill 23, The New Urban Agenda Act of 1997; House Bill 523, Brownfields Redevelopment Act of 1997; House Bill 873, Land Recycling Act of 1997; House Bill 990, Brownfields Remediation and Economic Development Act of 1997; House Bill 1049, Brownfield Economic Revitalization Act of 1997; House Bill 1120, Community Revitalization and Brownfield Cleanup Act of 1997; House Bill 1206, Brownfield Cleanup and Redevelopment Act; House Bill 1392, Brownfields Reuse and Real Estate Development Act; House Bill 1395, Brownfields and Environmental Cleanup Act of 1997; House Bill 1462, Brownfield Cleanup and Redevelopment Revolving Loan Fund Pilot Project Act of 1997 (Bartsch & Collaton 1997).

³The distrust of government has been widely covered in the popular press; the referenced material is only used as an example of this coverage.

CHAPTER II

REVIEW OF LITERATURE

Let me say that our system of government does not copy the institutions of our neighbors. It is more the case of our being a model to others, than of our imitating anyone else. Our constitution is called a democracy because power is in the hands not of a minority but of the whole people. When it is a question of settling private disputes, everyone is equal before the law; when it is a question of putting one person before another in positions of public responsibility, what counts is not membership of a particular class, but the actual ability which the man possesses. No one, so long as he has it in him to be of service to the state, is kept in political obscurity because of poverty....We are free and tolerant in our private lives; but in public affairs we keep to the law. This is because it commands our deepest respect.

---Perikles, 431 B.C.---
(Translated from Thucydides
by Rex Warner 1986, p. 145)

Overview

The ideal of true democracy in the United States - that citizens are the primary source of power - has in recent years been eroded in the minds of many. The country was founded on a disdain for strong central government and governmental ministers. Considering this disdain, it is amazing that the number of federal employees grew from 200 in the first decade of the nation to 2.8 million by its bicentennial. Of course, as the country has grown, so has the machinery needed to run it (Nachmias & Rosenbloom 1980), and the idea of democracy by "direct participation of a united people pursuing a shared communal interest" (Morone 1990, p. 5) has waned. Recently, there has been a push, at the grass roots level, for more public input into agency policy making. The American people seem to be revolting against massive bureaucracies whose "special

virtue" is the elimination of emotions, personal biases, and idiosyncrasies from the business of government and ensure impersonal procedural justice (Nachmias & Rosenbloom 1980).

This cry for more public participation in government comes at a time when participation in conventional politics (i.e., voting) is at an all-time low (Edsall 1996; Barber 1977; The Harwood Group 1991). Experts indicate that this failure to exercise voting rights is not an indication of an apathetic electorate but an indication of a widespread feeling of impotence (The Harwood Group 1991). Many political science authorities are calling for the exploration of innovative methods to ensure public participation in decision making and policy formulation (Barber 1977; Durning 1995; The Harwood Group 1991; Ruckelshaus 1995).

Decision Making and Policy Formulation at DEQ

Focht (1995) characterizes Oklahoma's system of site specific decision making on environmental issues as "laissez-faire free market" or "corporatist" (p. 57); whereby, it is up to the corporations to take the initiative of filing an application before the state agency becomes involved. The agency then processes the application, prepares a draft permit, and announces its intent to issue a permit at a public hearing. He states that "in most cases, this is the first (and perhaps the only) time that the public is given an opportunity to provide input on the proposal" (p. 58). In part, this is due to Oklahoma's decision to have a uniform permitting system that covers all environmental permits and authorizations. The Uniform Environmental Permitting Act (27A O.S. Supp. 1995, Section 2-14-101 *et seq.*) requires legal notice only of an opportunity for a public meeting during the permitting process. Brownfield applications, and the resultant Certificates of Completion or Certificates of No Action Necessary, are considered DEQ authorizations and therefore fall under the authority of the Uniform

Environmental Permitting Act. Prior to the passage of the brownfield law, Oklahoma had an informal voluntary cleanup program where a company (usually the PRP) could enter into a Consent Order with the DEQ to investigate and cleanup contaminated property. Under this informal program, public meetings were required. The former program closely followed Superfund methodology and the National Contingency Plan (NCP), and under the program DEQ encouraged several public meetings in order to keep the community informed of activities at a site. There is informal agreement within the agency to continue to encourage public participation and public meetings for the voluntary cleanups, but the applicable laws do not require this action.

Theory

...everyone says something true about the nature of things and while individually we contribute little or nothing to the truth, by the union of all a considerable amount is amassed.

--Aristotle, *Metaphysics*--¹
(from Gargan & Brown 1993, p. 347)

Implementing participatory policy analytical methods into a large bureaucratic organization is a difficult task. It is especially formidable when attempting to execute a participatory policy analysis in a state as geographically diverse as Oklahoma. A model or framework of how to proceed is essential. The Synoptic Normative Theoretic Framework for Legitimated Environmental Decision Making (Focht 1995) was selected due to its compatibility with the objectives of this study. Focht's theoretical framework synthesizes prior research, theories, and models to prescribe methodological norms for environmental decision making. The framework will allow the state to design and implement a process to encourage communication and understanding among the stakeholders and foster an attitude of consensus building. The project will also provide DEQ policy makers invaluable insight into the public's view of DEQ and its practices.

Focht (1996a,) postulates that "technological and environmental conflicts are caused and sustained by the failure of decision makers and communicators to properly assess the context of the issues that are relevant to the dispute and hence to design decision making and communication strategies that are appropriate to the context." (abstract p. 1). He argues that "the key to identifying legitimate strategies is to understand the context of the decision problem" (abstract, p. 1). In Focht's (1996a) view "efficient technological and environmental policy making in a democracy requires public acknowledgement of its acceptance of ...policies" (p. 1) The stakeholders involved in the conflict and the general public must feel that the decision making process is legitimate. Focht hearkens to Aristotle's concept of *phronesis*, or practical wisdom, to suggest that the stakeholders are capable of determining the most appropriate approach for them at a given time and under any given circumstances. According to Dryzek (1990), Aristotle's practical reason is grounded in collective life and politics (*praxis*) since "Aristotelian practical reason involves persuasion, reflection upon values, prudential judgment, and free disclosure of one's ideas" (p. 9).

Environmental decision making is complex, and the decisions involving hazardous substances add to the complexity. Due to this complexity, decision makers' training and education tends to be concentrated in natural and applied sciences. This is especially true in Oklahoma where the Merit System (OAC 530:10) specifically delineates the background needed for employment positions in the DEQ. Degrees in natural and sciences are preferred and a strong background in science is a requirement. It therefore is not surprising that the science and the "facts" of a given environmental problem are foremost in the DEQ's consideration in any environmental controversy. However, with new agency emphasis being placed on public input in decision making processes, it is incumbent upon DEQ to understand the social and ethical contexts associated with any policy decision it makes.

Only a communicatively rational policy science of participatory democracy, oriented to the public sphere rather than the state, is well placed to reconcile the twin demands of effective social problem solving and democratic principles. It should be stressed that the quality rather than just the quantity of participation is at issue here. The role of the policy analyst in such processes is not that of a technocrat but rather that of a participant in and facilitator of open discourse about policy.

(Dryzek 1990, p. 23)

Focht (1995, 1996a) proposes a three dimensional model for environmental decision making, originally designed for the siting of locally undesired land uses (LULUs) but which can apply to all environmental decision making contexts. Focht (1996a) suggests that there are three components of decision making and that these correspond to the three dimensions of his model. 1) What substantive criteria (substantive legitimacy) should be considered? What is the relative importance of facts and values to the decision? Should scientific facts or cultural values dominate the decision making process? 2) What processes (process legitimacy) should be used? What is the level of social consensus for the preferred decision outcome? Is there social consensus or dissensus? 3) Who (stakeholder legitimacy) should participate? What is the level of systemic trust the stakeholders invest in the decision making institution? Are both the motives and technical competence of the government trusted?

Focht (1996a) argues that stakeholders in a given policy arena will determine the legitimacy of a decision making strategy based on the prevailing context of the decision and communication environment. Focht's three components of decision making (what substantive criteria should be considered, what processes should be used, and who should participate) can be represented in three dimensional space where the intersection of the component dimensions isolate separate regions. The separate regions define particular legitimacy-defined decision contexts. Focht's framework (1996a)

"describes the characteristics of each of these regions and suggests appropriate decision making and communication strategies" (p. 4).

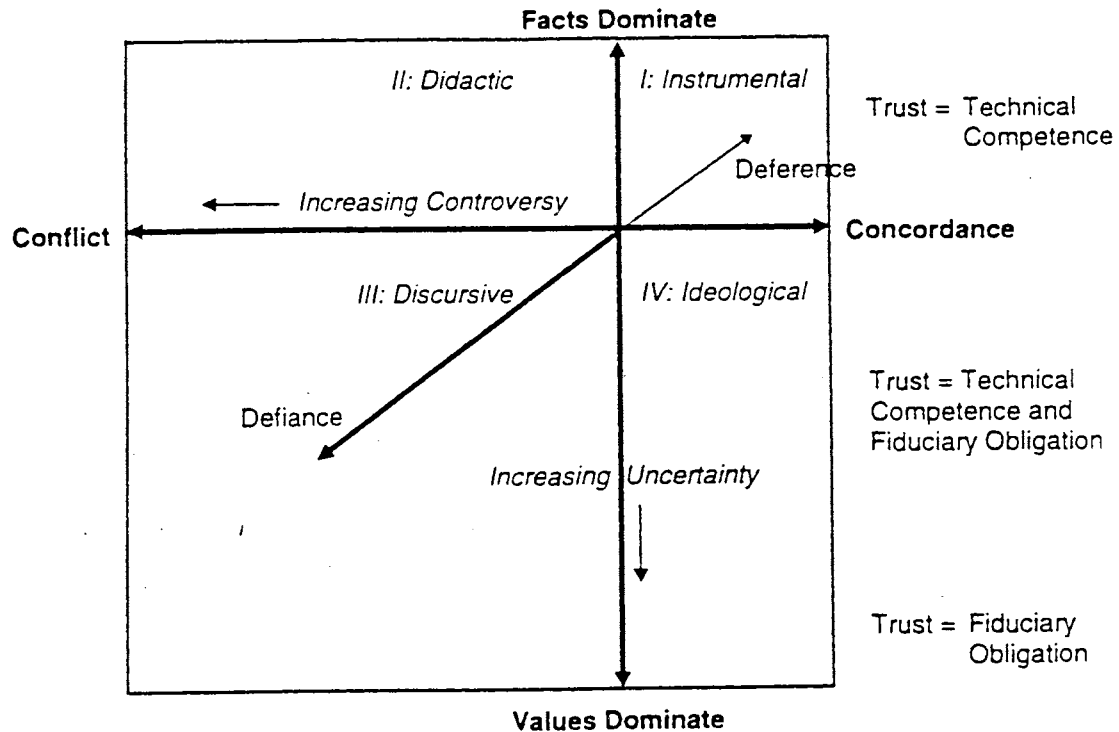
Focht's (1996a) first dimension of context legitimacy is substantive legitimacy. Focht describes this context as determined by the stakeholders perceptions of the importance of their values and the scientific facts to the decision in question. The second dimension, process legitimacy, is described as the level of social consensus for a given decision. The third dimension, stakeholder legitimacy, represents the level of systemic trust that stakeholders have in the institution making the decision.

For the model, each component is represented on a continuum with the extremes depicted on the opposite ends. The three continuums are structured orthogonally to create a three dimensional model. The model thus contains eight "octants" which represents eight legitimacy contexts or decision making strategies (Figure 1). Each of the eight octants corresponds to legitimacy contexts that "prescribe appropriate combinations of criteria, process and citizen involvement so as to minimize the probability of triggering stakeholder opposition" to the policy to be implemented (Focht 1996a, p. 13). Table 1 gives the ideal legitimacy characteristics represented by the octants (Focht 1996a). Focht synthesized the wealth of relevant findings from previous research to develop his prescriptive guide to aid in the framing of decision making strategies, and therefore his model is reflective of the dominant epistemologies of each respective field of study incorporated within his model.

In order to utilize the model, the existing legitimacy context must be determined. To do this, the stakeholders must be identified and consulted. Focht (1996a) promotes naturalistic inquiry as the research method for acquiring relevant information, naturalistic inquiry (Erlandson, Harris, Skipper, & Allen 1993; Lincoln & Guba 1985) and Q methodology (Brown 1980; Brown 1993; Durning & Osuna 1994; Gargan & Brown 1993; McKeown & Thomas 1988; Stephenson 1953). The utilization of these

Figure 2.1

Focht's Proportionally Adjusted Diagram of Idealized Legitimacy Contexts



methods can provide an overall view of the differing opinions on the policy issue in question. Focht (1996a) also advocates the use of focus groups to further define and refine the policy issues (Fox 1987). The groups "identify the relative importance of facts and values to the decision" (Focht 1996a, p. 25). The focus groups in effect frame the decision problem by delineating the relative importance of scientific facts and cultural values that pertain to the decision in question, the levels of trust the stakeholders have for the government, and the level of consensus or dissensus within the community in question. Focht's model will be consulted to gain understanding from the information gathered during the project. The knowledge attained will help determine the proper decision making strategy for the future development of the Oklahoma Brownfields

Table 2.1

Focht's Characteristics of Ideal Legitimacy Context

Octant No.	Context Name	Scientific Consensus	Social Consensus	Barber's Systemic Trust	Overlapping Realms	Appropriate Issues (examples)
I-A	refor-mative	high (certainty)	high (concordance)	yes; competent	facts, coercion, & deference	ignitable waste storage
I-B	refor-mative	high (certainty)	high (concordance)	no; incompetent	facts, coercion, & defiance	chemical spill response
II-A	informa-tive	high (certainty)	low to moderate (controversy)	yes; competent	facts, persuasion, & deference	radon gas; cigarette smoking
II-B	informa-tive	high (certainty)	low to moderate (controversy)	no; incompetent	facts, persuasion, & defiance	environm'tal tobacco smoke; AIDS
III-A	transfor-mative	low (indeterminacy) to moderate (uncertainty)	low to moderate (controversy)	yes; fiduciary obligation (and perhaps competence) satisfied	values (perhaps with facts); persuasion, & deference	sewage treatment plant siting; endangered species protection
III-B	transfor-mative	low (indeterminacy) to moderate (uncertainty)	low to moderate (controversy)	no; fiduciary obligation (and perhaps competency) unsatisfied	values (perhaps with facts); persuasion, & defiance	hazardous technology siting; park conversion to parking lot
IV-A	confor-mative	low (indeterminacy) to moderate (uncertainty)	high (concordance)	yes; fiduciary obligation satisfied	values (perhaps with facts); coercion, & deference	prohibition of plastic grocery bags in favor of paper
IV-B	confor-mative	low (indeterminacy) to moderate (uncertainty)	high (concordance)	no; fiduciary obligation not satisfied	values (perhaps with facts); coercion, & defiance	establish recycling program

Voluntary Redevelopment Program (Focht 1996a). This thesis describes two phases of the overall state brownfield public participation project, the collection of a pool of data using naturalist inquiry, and the implementation of Q methodology to refine the understanding of the stakeholders' views. The process attempted to ensure that all interested stakeholders had an opportunity to participate in the policy/program formulation.

This research concentrates on the use of naturalistic inquiry and Q Methodology to gain an understanding of the differing views of the various Brownfield stakeholders. This is especially important for the Brownfields Program because many of the issues involved are outside the training and expertise of the agency. The agency, in general, employs natural and applied scientists to implement its environmental programs. To obtain an overall view of the issues involved and the differing viewpoints, it was necessary to listen to stakeholders' expressed concerns and views about the concept of brownfields and the various issues involved. It was especially important not to concentrate only on specific technical and environmental issues.

The Naturalistic Paradigm, as opposed to conventional behavioral science, is holistic; it proposes to examine the "whole cloth" and not try to isolate separate aspects. It also assumes that there is not one objective reality but multiple realities (Erlandson, et al. 1993). The purpose of this brief explanation is not to debate the merits of the differing paradigms but to acknowledge that naturalistic inquiry provides an excellent tool to aid an agency in understanding the needs of the public. Each stakeholder group represents a divergent reality, and each reality is based on individual beliefs and experiences (Erlandson, et al. 1993). It is the knowledge of those divergent realities that is necessary for an agency to understand the big picture and not merely concentrate on the technical issues. Although there is agreement on what basic issues are involved in

redeveloping contaminated property, each stakeholder views the overall picture of the relevancy of each issue in differing shades of gray.

These mental shades of gray can be delineated and understood through the use of Q methodology. Q methodology "provides researchers with a systematic and rigorously quantitative means for examining human subjectivity" (McKeown & Thomas 1988, p. 7). Subjectivity is nothing more than a person's communication of his or her viewpoint (McKeown & Thomas 1988). Stephen Brown (1980) encourages the use of Q methodology in the study of political science in his book *Political Subjectivity*. Brown argues that the daily discussions of political issues represents subjective operant behavior. "It is subjective since each person's viewpoint, on political or any other matters, is simply that--his viewpoint. It is operant because it exists naturally within a particular setting" (Brown 1980, p. 4). Brown continues: "(o)perant subjectivity differs in several important ways from the operation definitions of scaling and questionnaire methodologies. In the first place, a subjective operant, unlike a scale response, is neither right nor wrong. A person's judgement...is simply his viewpoint....operant approach therefore has little use for such platonic concepts a validity. There is no outside criterion for a person's own point of view" (p. 4). His argument continues that the objective operational scales and tests used to classify and explain behavior actually tend to classify and explain scales and tests. "[Operational definitions] begin with a concept...on the basis of which an operational definition is formulated. A quest is then undertaken for phenomena (i.e., responses) which match the concept so defined. An operant approach proceeds in reverse order: A phenomenon is observed and a concept is attached to it" (Brown 1980, p. 5). Since the objective of this study is to understand stakeholders' views concerning brownfields and not their responses to preconceived theories, an operant approach to data gathering is necessary. Q methodology provides flexible procedures needed to gain an understanding of the

public's views, so those views can be incorporated into the decision making process and assure public acceptance of the policy.

[Q methodology's] special contribution to decision making is that it helps overcome the limitations of the mind in dealing with complexity, and also serves to locate elements of consensus (if they exist) that might otherwise go unnoticed in the emotional turmoil of political debate.

(Gargan & Brown, 1993, p. 349)

NOTES

¹Gargan & Brown. 1993. This quote was borrowed from the referenced text. The quote was not referenced, so it is impossible to determine from which translation it was taken.

CHAPTER III

METHODOLOGY

Very few beings really seek knowledge in this world.....Few really ask. On the contrary, they try to wring from the unknown the answers they have already shaped in their own minds--justifications, confirmations, forms of consolation without which they can't go on. To really ask is to open the door to the whirlwind. The answer may annihilate the question and the questioner.

(Anne Rice 1985, p. 380)¹

Research Design The Synoptic Normative Theoretic Framework For Legitimated Environmental Decision Making

The policy research implements the Synoptic Normative Theoretic Framework for Legitimated Environmental Decision Making, proposed by Will Focht, Ph.D., Oklahoma State University, as a guide to the policy and program development for the state brownfield program. Focht describes the formulation and justification of his framework in his treatise *A Heuristic Political Inquiry into NIMBY Conflict: Exploring Solutions to Gridlock* (1995). This project concentrates on the utilization of Focht's research and model to aid in the development of state policy. Focht's model suggests the use of naturalistic inquiry (Erlandson, et al. 1993; Lincoln & Guba 1985) and Q methodology (Brown 1980; Brown 1993; Durning & Osuna 1994; Gargan & Brown 1993; McKeown & Thomas 1988; Stephenson 1953) to gather data with which to inform the decision making process. This research utilized Focht's suggested research techniques to collect information from stakeholders who feel that they will be affected by

a new state program for the redevelopment of brownfields. This thesis represents a portion of the overall state policy development project. The additional studies will reflect Focht's outline and incorporate stakeholder focus groups into the decision making process.

Identification of Stakeholders

Focht (1995) suggests that when assessing the level of conflict surrounding a social issue, it is important to allow interested stakeholders within a geopolitical boundary to identify themselves. By following a route of stakeholder self-definition, parties and their interests are not overlooked due to the researchers' biases. The geopolitical boundary for this study is the state of Oklahoma, and the large area it encompasses made notification of all affected citizens a formidable task. Therefore, a concentrated effort was made to identify all potential stakeholder groups and interested parties in the state and notify them of the opportunity to participate in the study. This effort included a mass mailing of the announcement of the project (see Appendix B), which included an invitation to participate in the development of the program, to stakeholders known to DEQ. These stakeholders included environmental groups, industries, cities, counties, economic development organizations, banks, affected property owners, and Native American tribes. The reasoning behind the use of the in-house mailing lists represents the research methodology employed. When utilizing Q methodology it is important that the participants have an established opinion concerning the issue in question. Although brownfields is a new concept, the issues surrounding it represent established environmental controversies. Therefore, it was felt that people who had previously expressed interest in environmental issues would have well-formed opinions on brownfields. DEQ's mailing lists are comprised of individuals who have requested to be informed on environmental issues, and therefore, represented potential

brownfield stakeholders. The mailing list was generated using several existing mailing lists from within the agency and the addition of individuals who had expressed interest in the project during its planning phase. 673 announcements were mailed to the known stakeholders, 37 of which were returned as undeliverable. In addition, announcements were sent to the 36 local DEQ offices with a memorandum requesting the DEQ staff to pass the announcement to known stakeholders within their districts (see Appendix B). The local district inquiries were made because local DEQ personnel have first-hand knowledge of the environmental problems in their assigned counties and maintain a working relationship with the parties involved. A press release was issued to promote interest in the brownfields project and to announce the opportunity to participate. The press release was sent to all daily newspapers in Oklahoma (see Appendix B). A section on brownfields was added to the Superfund Quarterly Site Status Report with a notice of the opportunity to provide input into the developing program. The quarterly report is sent to 234 addresses, including all members of the state legislature. This outreach represented an expanded opportunity for stakeholders to identify themselves. Later, some stakeholder group representatives were contacted directly because it was felt that their views might not be represented by the stakeholders who had identified themselves. Information on varying viewpoints was also obtained from position papers issued by various groups. The position papers were obtained during the law and rulemaking process from organizations wishing to influence the policy, and from the World Wide Web for those organizations that had posted position papers concerning brownfields on their web sites.

The Interviews

The mailings generated much interest in brownfields; however, many responses were only requests for additional information about brownfields. In all, 32 citizens agreed to participate in face to face interviews, 30 were audiotaped. Two attorneys

declined being taped due to their reservations about issues relating to client confidentiality; notes were taken during these interviews in lieu of taping. One participant canceled her interview due to personal circumstances and a shortened interview with this person was conducted on the telephone and notes were taken. Three other shortened telephone interviews were conducted with persons who did not wish to participate in a face to face interview but wished to have their views heard. One potential participant declined to be interviewed when she discovered that an audiotape would be made. Upon learning that the interview would be taped she stated that, under the circumstances, she would have to ask her employer for permission. She did not pursue the interview. The author conducted all interviews.

The interviewees represented major stakeholder groups. These included: economic development; urban renewal; industry; county and state regulators; planners; communities; environmental consultants; students; small business; educators; elected officials; environmentalists; neighborhood associations; and Native American tribal representatives. The geographical distribution of stakeholders' residences includes the following counties: Tulsa, Cleveland, Oklahoma, Wagoner, McClain, Payne, Ottawa, Lincoln, Kay, Stephens, Canadian, and Garfield. Nine females and 23 males were interviewed ranging in age from 26 to 66. There were three Native Americans, one African American, one who describe himself as white and Native American, and 27 Caucasians. Demographics of the participants in the face to face interview are represented in Table 3.1.

Telephone interviews were conducted with environmental consultants, bankers, educators, and a leader of a church group that had redeveloped contaminated property prior to the passage of the law. Position papers were obtained from lender associations, an international environmental organization, the oil industry, the insurance industry, research institutes, a citizen organization, and a religious organization.

The participants were interviewed using an open-ended interview format. The interviews were in person, although some telephone interviews were conducted due to the preferences of the stakeholders. The interview utilized naturalistic inquiry methodology (Erlandson, et al. 1993; Lincoln & Guba 1985). These interviews were designed to promote an unbiased, conversational collection of stakeholders' statements about their knowledge, views, concerns, experiences, and preferences surrounding issues relating to brownfields. In addition, the interview helped to identify other potential stakeholders by obtaining contacts from the interviewees. To ensure accuracy, the interviews that were conducted in-person were audiotaped. The tapes were transcribed by an independent (non-agency) transcription service [Dick's (*sic*) Transcription Service, Oklahoma City, Oklahoma]. All names mentioned on the tapes were deleted from the transcripts, and the tapes were erased. Only the transcriptions are kept in the state's files. The transcriptions are public record.

Networking/purposive sampling techniques (Lincoln & Guba 1985) was used to identify additional stakeholders in an effort to try to ensure that all stakeholder views were obtained. Interviewees were requested to provide names of people they felt represented their point of view and for ones they felt might diverge from their view.

Interviews were conducted in a manner that made it easy for all interested parties to participate. The investigator traveled to the participants, and the interviews were held at the convenience of the participant and at their preferred location. A quasi-structured interview protocol was developed to aid the investigator during the interview and to ensure that the direction/composition of the individual interviews are comparable in content. However, after several interviews, the interviewer worked from a list of issues based on the protocol instead of a list of structured questions. Referring to a list of issues made it easier for the interviewer to stimulate the flow of communication by

Table 3.1
Demographic Characteristics of Interview Participants

Part. No.	County Res.	Age	Race	Sex	Educ. Level	Occupation	Annual Income Range	Property Ownership	Stakeholder Group Self I.D.
02Z001	Tulsa	27	Cauc.	M	M.S.	Community Dev.	30-50K	No	Bus. Assoc.
02Z002	Cleve.	63	Cauc.	M	Post Grad.	Redevelop. Officer	50-70K	res.	Municipal
02Z003	Okla.	45	Cauc.	M	J.D.	Attorney Oil Ind.	>70K	res. comm. agricul.	Prop. Owner Gen. Public Prosp. Purch. Oil & Gas Ind.
02Z004	Wag.	40	Cauc.	F	M.S.	Environ. Safety Coord.	>70K	res. agricul.	Prosp. Purch.
02Z005	McCla.	40	Cauc.	M	M.S.	Biologist	30-50K	res.	State
02Z006.1	Okla.	48	Cauc.	F	B.S.	Manager	30-50K	res. comm.	Prop. Owner Municipal Envir. Group
02Z006.2	Cleve.	28	Cauc.	F	B.S.	Civil Engineer	30-50K	res.	Prosp. Purch. State
02Z007	Garf.	45	Cauc.	M	B.S.+	Economic Dev. Director	30-50K	res.	Prop. Owner Municipal Other: COG
02Z008	Okla.	64	Cauc.	M	B.S.+	Environ. Consultant	50-70K	res. comm.	Prop. Owner Envir. Group Envir. Justice
02Z009	Tulsa	51	Cauc. NatAm	M	some coll.	Economic Dev. Director	30-50K	No	Municipal
02Z010	Canad.	46	Cauc.	M	B.S.	Environ. Manager	>70K	res.	Consultant
02Z011	Okla.	47	Cauc.	M	M.S.+	Environ. Project Manager	50-70K	res.	Consultant

02Z012	Okla.	35	Cauc.	M	M.S.	Solid Waste Mgmt.	50-70K	res.	Gen. Public
02Z013	Linc.	59	Cauc.	M	B.A.	Economic Dev. Specialist	30-50K	No	Municipal Envir. Group Econ.Dev.
02Z014	Okla.	58	Cauc.	M	BBA	Invest. Advisor	>70K	res.	Prop. Owner
02Z015	Tulsa	48	Cauc.	M	M.S.	Facilities Director	>70K	comm. ind.	Prop. Owner Prosp. Purch.
02Z016	Payne	26	Cauc.	F	B.S.	Student	10-30K	No	Gen. Public
02Z017	N.A.	N.A.	N.A.	M	N.A.	Attorney	N.A.	N.A.	Oil Industry
02Z018	Okla.	42	Cauc.	F	Ph.D.	Toxicologist	50-70K	res. agricul.	Prop. Owner
02Z019	Kay	48	NatAm	F	B.S.	Community Dev.	10-30K	res.	Municipal Prosp. Purch.
02Z020	Okla.	38	Cauc.	M	B.S.+	Chemist/ Environ.	50-70K	res.	Prop. Owner Gen. Public Prosp. Purch.
02Z021	Cleve.	43	Cauc.	M	M.S.	Coord. Waste Mgmt.	50-70K	res.	Prop. Owner Gen. Public
02Z022	Tulsa	66	Cauc.	M	High School Grad.	Self Empl. Dry Cleaner	30-50K	res. comm.	Prop. Owner Envir. Group Gen. Public
02Z023	Steph.	54	AfrAm	M	some coll.	Sales	30-50K	res. agricul.	Municipal Gen. Public
02Z024	Cleve.	41	Cauc.	M	Ph.D.	Professor	30-50K	res.	Academia
02Z025.1	Ottawa	66	Cauc.	M	some coll.	Retired Bus.Own. Elect. Off.	10-30K	res. comm.	Prop. Owner Municipal
02Z025.2	Ottawa	N.A.	N.A.	M	N.A.	Municipal Environ. Officer	N.A.	N.A.	N.A.

02Z026	Kay	39	Cauc.	F	B.S.	Video Prod. Farmer	30-50K	res. agricul.	Prop. Owner Envir. Justice Farmer
02Z027	Cleve.	34	Cauc.	M	Ph.D.	Professor	50-70K	res.	Envir. Group Gen. Public Envir. Justice Researcher
02Z028	Okla.	43	Cauc.	F	M.S.+	Non Profit Director	30-50K	No	Gen. Public Neighborhood
02Z029	Linc.	33	NatAm	M	B.S.	Environ. Scientist	10-30K	No	Tribal Enforc.
02Z030	Linc.	46	NatAm	F	some coll.	Environ. Coord.	10-30K	res. agricul.	Prop. Owner Envir. Group Envir. Justice

easing the participants' anxiety and projecting a less structured and more friendly environment. Erlandson et al. (1993) addresses this aspect of naturalistic inquiry and states,

...the naturalistic paradigm affirms the mutual influence that researcher and respondents have on each other. Nor are the dangers of reactivity, ignored. However, never can formal methods be allowed to separate the researcher from the human interactions that is the heart of the research. To get to the relevant matters of human activity, the researcher must be involved in that activity. The dangers of bias and reactivity are great; the dangers of being insulated from relevant data are greater. (p. 15)

Great care was taken not to influence the respondent's opinion, but equal care was taken to ensure that the participant felt comfortable enough with the interviewer so as not to self-censor the information they provided. The interviews were at all times open and non-adversarial.

The interviews began with the interviewer presenting her business card and a brief introduction of herself and the project. The participant was informed about the purposes of the study, the state's Open Records Act, and that their identity and anyone they mentioned during the interview would be held confidential. They were also

informed that they could withdraw their opinion at any time during or after the interview. The necessity of the Consent Form was explained, and the participant was assured that the form would not be kept in DEQ files. The participant was then asked to read and sign (if they still wished to participate) the consent form (see Appendix B), and each participant was assigned a participant ID number. The participant was then asked to fill out a short questionnaire covering demographics. Demographic details collected during the project include: county of residence, age, race, gender, education level, occupation, income, and ownership of real property. The questionnaire also requested the participant to identify the stakeholder group(s) with which they associate themselves. A predetermined list was prepared from which they could choose an additional category of "other (specify)_____" (see Appendix B). After the paperwork was complete, the tape recorder was turned on and the interview began.

The transcripts of the interviews were proofed by the interviewer for accuracy, and statements were selected for the Q methodology concourse. A concourse - "the flow of communicability surrounding any topic" (Brown 1993, p. 94) - was developed from the transcripts of the interviews and position papers. The concourse was developed by extracting statements that were reflective of the various brownfield issues from the raw data. Statements were selected for the concourse considering completeness of thought, saliency, and uniqueness. The concourse included 475 statements. Brown (1980) asserts that in selecting Q items for inclusion in a Q sample, "the preferred items in most instances are those freely given by subjects, with as little tampering and modification by the investigator as is practicable....Ideally, we would prefer to affect our subjects as little as a thermometer affects a hot day. In ethnomethodological terms, this means sticking as closely as possible to the person's way of expressing himself" (p. 190). For this reason, very little tampering was administered to the statements. The

statements were "cleaned up" and superfluous "uhmmm," "you know," etc., were removed; otherwise, the statements are those of the speakers.

A subset of statements, the Q sample - the purpose of which is to "provide a miniature which, in major respects, contains the comprehensiveness of the larger process being modeled" (Brown 1993, p. 99) - was drawn from the concourse. The Q sample was selected with a 5 x 6 factorial design (policy issues x stakeholder interest), taking two statements per cell for a total of 60 statements. This structure was imposed to facilitate the selection of the Q sample (Brown 1980) and to help ensure that the Q sample was representative of the various concerns expressed during the interviews. The major issues surrounding brownfields were grouped into five categories: (1) environmental/health issues; (2) economic development issues; (3) oversight/control issues; (4) trust issues; and (5) justice issues. The issues identified for the factorial design are reflective of the concerns voiced by stakeholders during the interviews. Stakeholder interests, for the purposes of the factorial design, were defined by the participants self identification of their overarching interest in the redevelopment of brownfields. The stakeholders were grouped into the following groups: (1) those whose interest is economic development; (2) those whose interest is the community/public; (3) those whose interest is regulatory; (4) those whose interest is technical; (5) those whose interest is protection of the environment/environmental justice; and (6) those whose interest is financial. The principle of heterogeneity was used to determine the two statements per cell, i.e., the statements that were most different from one another within the same cell were selected. This was done to ensure comprehensiveness among the sample statements. Brown (1980) states, "by selecting the most unlike (*sic*) statements from those which are alike in kind serves to minimize the constraining effects of the design and tends to produce a sample of stimuli more nearly approximating

the complexity of the phenomenon under investigation" (p. 189) Upon review, two additional statements were added to the Q sample to produce the quasi normal distribution. The final, 62 statement, Q sample is included in Table 3.2.

Table 3.2
Brownfields Q Sample

Item ID	Item Statement
A	I think there is a distrust of policy. There's the sense that policy can change from one administration to another.
B	My concern is that many chemicals have not been fully tested for their effect on human health -- so how can you set standards that are protective of human health?
C	Offering incentives for cleaning up Brownfields isn't fair to companies who have already come forward and cleaned up their mess.
D	My fear is that the property will not be properly taken care of for the foreseeable future.
E	In looking at Brownfields redevelopment, you need to consider whether the new venture will be accepted by the community.
F	You can have a public meeting, but most people won't pay any attention until the dirt is being moved.
G	It is better to clean up part of it than none of it.
H	My gut instinct is that once a site has been contaminated, it will never be totally clean.
I	I don't think you can go in and clean up a part of a site and use it--all the contamination problems at the site should be fixed.
J	Certificates of Completion should be legally binding agreements. I would not enter into an agreement if the government reserves the right to "change" its mind and reopen the site.
K	If you start creating too much oversight of these cleanups, you are going to provide disincentives for redevelopment.
L	In a state like Oklahoma where people think there is more land to use up, anytime you want to reclaim an area that has already been used, you are not on a level playing field.

- M At some point in time, there may be a need to consider economic issues or redevelopment of these sites, but I don't think that is DEQ's function.
- N We tend to overdo things in the environmental area. We might have a site that is presenting relatively minimal danger to people and the environment and yet spend millions of dollars cleaning it up.
- O Contamination is only only a minor part of the problem--there are a whole host of reasons for the reluctance to invest in older urban areas.
- P I don't think that the public's opinion about what we do with our site is relevant, unless they want to pay some of the costs.
- Q Real estate transactions, irrespective of the Brownfield issues, must make sense from a business perspective. Developers won't participate just to be good citizens.
- R I think that public comments are often just recorded and added to a document rather than evaluated and responded to.
- S I don't trust business anymore than I trust government, to be real honest with you.
- T I feel that ODEQ will look out for the interests of the community and the people whose lives, on a daily basis, are affected by a site and its cleanup.
- U I don't have a problem with public participation--as long as the public is not from someplace else.
- V These sites need to be handled with some degree of finality, so that the next generation does not have to worry about them.
- W Providing economic incentives for the cleanup of these sites gets political--there's not enough money to do it for everybody, so then how do you justify doing it for some?
- X Most risk-based assessments are very conservative, and so if you get an answer that's safe, then it is probably safe.
- Y Usually, the State is so tickled to attract new industry that it pays for all the new infrastructure needed to develop Greenfields.
- Z Business interests should be able to clean up sites voluntarily with guidance rather than under consent orders.
- AA I think it needs to be real clear to companies that the state regulatory agency has the ultimate authority to say what is going to happen at the site.
- BB They (the government) are going to have to give a company some kind of incentive to come in and set up a business on contaminated land over non-contaminated land.

- CC I'd say that the program doesn't work if you have to add financial incentives.
- DD I think some people see Brownfields as a way to skirt or get around some of the cleanup requirements that are currently in existence.
- EE For the purpose of environmental cleanups, DEQ should establish criteria to define whether an aquifer is usable or not.
- FF During traditional public participation, I worry about the vocal few getting their way over a more rational group.
- GG I would say that the state needs to cross check the information businesses submit. Self monitoring reports can be fiction.
- HH The state of the art solutions that we put in place today, we will find inadequate in 10 to 20 years.
- II It would seem like a fine thing if, after a site was remediated to some standard, we forget that it was a bad place. Isn't that the idea--to do something so that we don't have to worry about it anymore?
- JJ Often, regulatory agencies are not sensitive to the various costs of their decisions.
- KK The big picture is that the reason we need a Brownfields program is that the previous approach didn't work. The Brownfields program is just another governmental program put in place to deal with issues caused by another governmental program.
- LL Risk Assessments are at best biased and imprecise estimates of actual risk.
- MM I think there's two reasons people attend public meetings: one some people are legitimately concerned; and the other one is greed--people looking for opportunities for third party lawsuits.
- NN It's my feeling that we don't always do a good job protecting property rights in this country.
- OO If we now say that some degradation is acceptable for certain sites, the incentive to prevent pollution could be drastically undermined.
- PP DEQ's job is to protect human health and the environment, not to protect property values.
- QQ In a Brownfields program, I think that the best benefit would be reaped from using industrial properties for industrial purposes, and nothing else.
- RR I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability.

- SS My feeling is that if you clean up the surface and ignore the ground water, the public perception is that the site is clean, when in reality, there is still contamination.
- TT DEQ has a problem with never seeming to be able to fine anybody or punish anybody. It makes me wonder, if a business violates its Certificate of Completion, is anything going to happen to them? Will DEQ enforce?
- UU Superficial cleanups transfer risks and costs to future generations in order to suit the convenience of today's political constituencies.
- VV There is a perception that environmental groups are supposed to watch out for the public interest--I thought that was the State's function.
- WW Native people cannot just sell out and move away from contamination. Their homeplace, their lands are not something you can give away, get rid of, or exchange. Ancestral lands are forever.
- XX Brownfields transactions are not environmental actions. They are real estate deals which have environmental concerns. If the Brownfield is in a good location from a realty viewpoint, it will be redeveloped - with or without a State environmental agency's program.
- YY The general public needs to start understanding that they are going to have to accept some risks if they want to live in a society that's the industrial level that we are at - people are going to have to start accepting risks.
- ZZ My view on property rights is that there is a social responsibility tied to it.
- Aa I think the city needs to be involved with the entire process of a Brownfields redevelopment since they have to live with the outcome.
- Bb A small town's ability to set zoning, enforce zoning, is extremely limited. I would have no faith in their ability to do it properly.
- Cc Brownfields certificates should have some contingency so that DEQ could have a way, if need be, to do something about any problem that might occur later on. I think you've got to have the right to go back in and look at the situation.
- Dd There should be legislation where the State holds the adjacent property owners liable for any contamination on their property if they refuse access to a company that is trying to clean up a problem.
- Ee Financial institutions have often been blamed for not providing capital for Brownfields transactions; however, people need to understand banks must adhere to the dictates of federal and state banking regulations regarding their lending practices and credit risk appetite.
- Ff The big pressure to continue through on a project will come from the lending institutions...you're going to find that they're the ones that have far more effect on the situation than the state agency does.

- Gg Always requiring closure to go back to a background level is unrealistic, and there simply is not enough money to do that. We need to start getting realistic about this.
- H h A participant ought to be able to change his mind because he may find that after investigating the site that his redevelopment plan is unfeasible.
- I i I would not like to be in the position of having to defend some of the risk assessments to the public because I think there is a real potential for misunderstanding and misuse of some of the information.
- J j No lender is obligated to or should be pressured to make a Brownfields loan that does not meet normal credit quality standards for similar non-Brownfields loans.
-

The P-Sample (or P-Set) for this study was selected from the list of original interviewees and from additional stakeholders identified during the study. The P-Sample is the set of individuals selected to reflect the full range of representative perspectives (Focht 1995) or "set of persons who are theoretically relevant to the problem under construction" (Brown 1980, p.192). A large number of respondents is not needed for Q methodology; "all that is required are enough subjects to establish the existence of a factor for the purpose of comparing one factor with another. What proportion of the population belongs in one factor rather than another is a wholly different matter and one about which Q technique as such is not concerned" (Brown 1980, p. 192).

Original participants (interviewees) were asked to participate in a Q sort because after the intensive interview, it was desirable to have the participants model their view in order to present the strength of importance of the various Q sample statements from their vantage point. The researcher systematically attempted to contact the original participants by telephone and invite them to participate in the second phase of the study. Often, only the original participants voice mail, answering machine, or secretary could be reached. Messages were always left inviting the former participant to continue in the process and requesting them to return the call if they were interested.

New participants were contacted by telephone or in person (in the case of DEQ employees). Twelve original interviewees agreed to complete a Q sort; unfortunately, one canceled due to business commitments and was not able to reschedule. Two returned the investigator's telephone call to say that they could not participate further: (1) due to the fact that he had changed positions in the firm and was no longer involved in the issue (however, the caller referred the researcher to additional participants,) and (2) due to family obligations that did not permit the necessary time. Twenty-seven new participants completed additional Q sorts. Several DEQ staff members were targeted for participation because, in various capacities, they would be implementing the brownfield program. Positions represented include: program supervisor, project manager/technical, attorney, toxicologist, and the Brownfield Coordinator for the state. One regulator, after initially agreeing to participate, withdrew when the Q sort was presented. Additional participants outside the agency were chosen on the basis of their involvement in brownfield issues. These participants included: a public health professional; a city official; a general public representative; environmental activists; an educator involved in a brownfield issue; a transportation planner; a city employee who is involved with brownfields; real estate developers; a corporate environmental officer; a banker; and owners of property adjacent to brownfields. Altogether, 38 participants performed Q sorts. The Q sort activities were arranged to accommodate the participant; the author supervised all the Q sorts.

An attempt was also made to ensure that the data was geographically and demographically representative of the state. Individuals in the P sample reside in the following counties: Canadian, Cleveland, Garfield, Jackson, Kay, Logan, Oklahoma, Pittsburg, Stephens, and Tulsa. Participants included 18 females and 20 males; three Native Americans, one African American, and 34 caucasians; ranging in age from 27 to

66; with education levels ranging from 10th grade to Ph.D. Table 3.3 outlines the demographic characteristics of the P sample.

A Q sort is an operational medium which allows the participant to model his or her view concerning the issue at hand (McKeown & Thomas 1988). Stephenson (1953) describes the Q sort as a "modeling device" to help a person be systematic in representing his point of view on a topic. Participants are asked to rank order the various Q Sample statements relative to their preferences based on a specific condition of instruction (McKeown & Thomas 1988). The condition of instruction given to help guide the participants through the exercise was, "Considering the issues involved in the redevelopment of contaminated properties, also referred to as brownfields, what are your views on the following statements?" The participants were then asked to rank the 62 statements as to "most representative of my view" to "least representative of my view" on a form board.

Table 3.3
Demographic Characteristics of P Sample

Part. No.	County Res.	Age	Race	Sex	Educ. Level	Occupation	Annual Income Range	Property Ownership	Stakeholder Group Self I.D.
02Z001	Tulsa	27	Cauc.	M	M.S.	Community Dev.	30-50K	No	Bus. Assoc.
02Z006.2	Cleve.	28	Cauc.	F	B.S.	Civil Engineer	30-50K	res.	Prosp. Purch. State
02Z007	Garf.	45	Cauc.	M	B.S.+	Economic Dev. Director	30-50K	res.	Prop. Owner Municipal Other: COG
02Z010	Canad.	46	Cauc.	M	B.S.	Environ. Manager	>70K	res.	Consultant
02Z013	Linc.	59	Cauc.	M	B.A.	Economic Dev. Specialist	30-50K	No	Municipal Envir. Group Econ.Dev.

02Z018	Okla.	42	Cauc.	F	Ph.D.	Toxicologist	50-70K	res. agricul.	Prop. Owner
02Z019	Kay	48	NatAm	F	B.S.	Community Dev.	10-30K	res.	Municipal Prosp. Purch.
02Z021	Cleve.	43	Cauc.	M	M.S.	Coord. Waste Mgmt.	50-70K	res.	Prop. Owner Gen. Public
02Z022	Tulsa	66	Cauc.	M	High School	Self Empl. Dry Cleaner	30-50K	res. comm.	Prop. Owner Envir. Group Gen. Public
02Z023	Steph.	54	AfrAm	M	some coll.	Sales	30-50K	res. agricul.	Municipal Gen. Public
02Z026	Kay	39	Cauc.	F	B.S.	Video Prod. Farmer	30-50K	res. agricul.	Prop. Owner Envir. Justice Farmer
02Z031	Okla.	53	Cauc.	F	M.S.+	Epidemiology	30-50K	res.	Prop. Owner Gen. Public State
02Z032	Cleve.	57	NatAm	F	Ph.D.	Prog. Dir. Pub. Health	50-70K	res.	Prop. Owner Envir. Group Gen. Public State Envir. Justice
02033	Canad.	28	Cauc.	M	M.S.	Environ. Specialist	10-30K	res.	Prop. Owner Envir. Group Gen. Public State
02Z034	Canad.	60	Cauc.	M	B.S.+	Hydrologist	10-30K	res. comm.	Prop. Owner Gen. Public State
02Z035	Okla.	40	Cauc.	M	Foreign Medical Degree	Environ. Specialist	30-50K	No	State
02Z036	Cleve.	42	Cauc.	M	M.A.	Environ. Manager	50-70K	res.	State
02Z037	Okla.	46	Cauc.	F	B.A.+	Hydrologist	10-30K	No	State

02Z038	Okla.	53	Cauc.	F	J.D.	Attorney	30-50K	res.	State
02Z039	Okla.	45	Cauc.	M	M.S.	Public Info. Officer	30-50K	res.	Gen. Publ.
02Z040	Jacks.	56	Cauc.	M	B.S.	Retired City Off.	10-30K	res.	Prop. Owner Municipal Legislative Envir. Group Gen. Public State Veterans
02Z041	Okla.	42	Cauc.	F	Ph.D.	Psychol.	>70K	No	Gen. Publ Prosp. Purch.
02Z042	Kay	62	Cauc.	F	M.S.	Reg. Nurse	>70K	res. agricul.	Prop. Owner Envir. Group Gen. Public Envir. Justice
02Z043	Okla.	39	Cauc.	M	B.S.	Geologist	30-50K	res.	Municipal Envir. Group
02Z044	Kay	46	Cauc.	F	some coll.	Homemaker	50-70K	res. agricul.	Prop. Owner Envir. Group Gen. Public Critters
02Z045	Pittsb.	61	Cauc.	M	M.S.+	School Superintend.	>70K	res.	Prop. Owner Gen. Public Dev.Brnf.Site
02Z046	Okla.	43	NatAm	M	M.S.	Trans. Plan. Haz. Waste	30-50K	res.	State
02Z047	Okla.	33	Cauc.	F	B.S.	Environ. Specialist	10-30K	res.	Gen. Public State
02Z048	Logan	48	Cauc.	M	Ph.D.	Environ. Engineer	30-50K	agricul.	Prop. Owner (neighboring) State
02Z049	Tulsa	56	Cauc.	F	some coll.	Land Invest.	50-70K	res. comm. ind. agricul.	Prop. Owner Envir. Group Gen. Public Prosp. Purch.
02Z050	Tulsa	47	Cauc.	F	some coll.	Financial Advisor Stockbroker	N.A.	res. agricul.	Prop. Owner Envir. Group Envir. Justice

02Z051	Logan	40	Cauc.	F	M.S.+	Environ. Specialist	30-50K	No	State
02Z052	Tulsa	62	Cauc.	M	M.S.	Real Estate	>70K	res. comm. Ind.	Prop. Owner Broker
02Z053	Okla.	45	Cauc.	M	B.S.	Banking	>70K	res.	Lending Inst.
02Z054	Okla.	43	Cauc.	F	B.S.	Environ. Consultant	50-70K	res. agricul.	Envir. Group Utility Ind.
02Z055	Jacks.	48	White NatAm	F	10th grade	Housewife	10-30K	res.	Prop. Owner Municipal Gen. Public
02Z056	Jacks.	65	Cauc.	F	high school grad.	Retired	30-50K	res. agricul.	Prop. Owner Gen. Public
02Z057	Okla.	59	Cauc.	M	B.A.	Real Estate	>70K	comm.	Prop. Owner

The form board contained 62 cells in the shape of a pyramid arranged in a quasi-normal distribution (thirteen "stacks" of cells forming the pyramid with frequencies 2, 3, 4, 5, 6, 7, 8, 7, 6, 5, 4, 3, 2). The Q Sample statements were typed on individual slips of paper cut to fit the cells of the form board. Both the form board and the statements were laminated and Velcro was attached to prevent slippage of the statements. The Q sort exercise and the use of the quasi-normal distribution is designed to force participants to delineate which of the statements are most important to them and which are least important, while allowing (and assuming) that many of the statements would generate ambivalence from the participant. The results of the Q sorts were recorded by the author on notebook paper exactly as they lay on the form board. The participants were then asked if they would explain and/or clarify their sort and how it reflected their opinion. Some of these explanations were audiotaped and some were recorded in the researcher's notes. The reliance on written notes was due to two factors:

1) difficulties with the tape recorder; and 2) the discovery that the use of the transcription service for this purpose was not an allowable expense under the state contract.

Factor Analysis

"Factor analysis is fundamental to Q methodology since it comprises the statistical means by which subjects are grouped--or, more accurately, group themselves--through the process of Q sorting" (McKeown & Thomas 1988, p. 49). What is accomplished by factor analysis is that it readily discloses patterns in the data; this is especially important when the correlation coefficient matrix is large and the patterns are not readily apparent. Brown (1980) describes factor analysis as, "merely a complicated tautology which serves to break down a correlation coefficient (*sic*) into component parts" (p. 223). McKeown & Thomas (1988) state, "All factor analysis does is lend statistical clarity to the behavioral order implicit in the matrix by virtue of similarly (or dissimilarly) performed Q sorts. Factorization simplifies the interpretive task substantially, bringing to attention the typological nature of audience segments on any given subjective issue" (p. 50). Factor loads are in effect correlation coefficients which indicate to what extent each individual Q sort represents the model Q sort (composite factor array) for the specified type (McKeown & Thomas 1988).

The Q sorts were coded and factor analyzed at Oklahoma State University using a personal computer version of the mainframe QUANAL computer software program developed by Norman van Tubergen (1975) at the University of Kentucky, and designed specifically for the factor analysis needed for Q methodology. QUANAL correlates coded data provided by the Q sorts and factor analyzes (using the principal components method) the resulting correlation coefficient matrix. Varimax (orthogonal) rotation was used to maximize the explained variance on each factor, ensuring that each factor is

distinguished from the other factors (Focht 1995). A five-factor solution was initially elected with a minimum eigenvalue of 0.9 and a bipolar splitting criterion of 30%. One factor proved to be bipolar, and therefore, six factors were retained for interpretation². The six factors were retained because they represent separate and divergent views of the varying issues that give rise to the controversy surrounding the redevelopment of brownfields. Hence, the representative viewpoints that are reflected by the factors are theoretically significant to the research (Brown 1980).

NOTES

¹A novel about vampires has little to do with stakeholder research (although some would argue that it is very appropriate for a discussion of bureaucrats); nonetheless, it is an appropriate sentiment.

²Please note that due to a misunderstanding by the investigator, the Q sort form board had the "most" to "least" categories inverted with "most" on the left and "least" on the right of the continuum. The result of this mistake is that the resulting z-scores from the analysis have the incorrect/opposite sign (+,-). The computer printout has the original analyses; however, the signs of the z-scores within the report have been changed to reflect the convention that (+) implies agreement and (-) implies disagreement.

CHAPTER IV

FINDINGS

Factor analysis of the Q sorts produced a six-factor solution that explains 46% of the total variance. Focht (1995) gives three possible reasons for low explained variance: "(1) not enough factors have been extracted; (2) the Q sample does not capture all elements of extant perspectives, i.e., the Q sample is not representative; or (3) the P-sample does not have well-formed perspectives vis-a-vis the condition of instruction" (p. 454). Of the 38 Q sorts, five were found to be not significantly loaded¹ on any factor, and four were confounded on two factors. All factors have at least two significant loaders.

Although a four-factor solution was also obtained, the five-factor solution (which resulted in six factors due to a bipolar split at one of the factors) was retained for interpretation because it more fully captures the various viewpoints generating the controversy surrounding brownfield redevelopment and is therefore theoretically significant to the study (Brown 1980). Statistical criteria which also support the retention of the six factors are (1) each of the five factors (prior to the splitting of the bipolar factor) exhibited eigenvalues greater than 1.0 [The eigenvalue criteria is the most widely used method of determining when to stop extracting factors. The eigenvalue is the sum of the squared loadings of the columns in a matrix for each factor. Eigenvalues have been criticized for both leaving behind sizable residuals and significant factors and for producing spurious factors due to the fact it is a sum and is affected by

the number of variables in the study (Brown 1980)]; (2) each factor, including Factor F, which was created by the splitting of the bipolar Factor E, has at least two significant loaders; (3) each factor, prior the the bipolar split, explained at least five percent of the total variance; 4) The five-factor solution explains 46% of the total variance; whereas, the four-factor solution explains only 41%; and (5) the four-factor solution produced eight non-significant sorts, while the five-factor solution presented only five. Both factor solutions produced four confounded sorts.

Table 4.1 presents the re-ordered factor score matrix for the five-factor solution, which resulted in six factors after splitting and varimax rotation. Significant loading, when determined at $p < .001$ (99.9% confidence level); therefore, the critical value for a significant factor loading is 0.392.² Table 4.1 also presents the communalities and purities of the loadings.³

Factor scores (z-scores) are obtained for the purpose of permitting a closer examination of what is common among the Q sorts determining a factor thereby giving a model Q sort for that factor. A factor weight is assigned prior to determining the model Q sort, reflecting the fact that some Q sorts representing that factor are closer approximations of the factor than other sorts. The weighted scores are summed. For the purpose of comparability, the summed scores are normalized. This is necessary because factors contain differing numbers of subjects; therefore, each item total is converted to a z-score. The resulting z-score makes it possible to compare the same statements across factors. Table 4.2 presents the z-scores for the statements comprising each of the factors.

Table 4.1
Re-Ordered Factor Matrix

FACTOR A									
Participant	Variable	ID	A	B	C	D	E	Communality	Purity
1	11	31/55	.649	.007	.085	.061	.056	.436	.968
2	18	38/55	.678	.090	-.014	-.001	.197	.507	.907
3	34	21/14	.675	-.166	-.058	-.055	-.133	.508	.898
4	16	36/14	.581	.071	.221	-.040	.026	.393	.858
5	1	01/72	.657	-.149	.200	.210	.150	.561	.770
6	6	18/55	.728	-.337	-.021	.141	-.193	.701	.756
7	19	39/14	.456	.004	.277	-.015	.198	.324	.642
8	35	54/55	.539	-.340	.245	-.039	-.070	.473	.614
9	3	07/24	.629	.132	.412	.110	-.295	.682	.580
10	17	37/55	.318	.235	.055	.074	-.128	.182	.558
11	2	06/14	.495	-.353	.134	.000	.292	.473	.518
12	32	52/72	.331	-.307	.249	-.073	.039	.273	.402
13	13	33/09	.431	-.076	.403	.067	.342	.475	.390
FACTOR B									
14	10	26/36	-.070	.682	-.080	.040	.055	.482	.967
15	24	44/36	-.164	.766	.033	-.007	.036	.616	.952
16	30	50/72	.057	.777	-.070	.080	.168	.647	.934
17	22	42/36	-.196	.739	-.112	.131	-.171	.644	.849
18	29	49/72	-.120	.681	-.202	.091	.257	.594	.782
19	21	41/55	-.042	.549	.100	.324	-.301	.508	.593

FACTOR C

20	7	19/36	-.120	-.063	.645	.159	.018	.460	.905
21	27	47/55	.165	-.064	.454	.057	-.100	.250	.822
22	33	53/55	.104	.121	.522	.085	.216	.352	.774
23	4	10/09	-.013	-.176	.405	.139	.106	.226	.727
24	38	57/55	.176	-.296	.559	-.044	-.083	.440	.710
25	23	43/55	.383	-.018	.617	.058	-.153	.555	.686
26	8	22/72	.219	-.195	.406	.115	.032	.265	.622
27	15	35/55	.234	.018	.534	.352	-.237	.520	.548
28	5	13/41	.142	.393	.503	.085	-.191	.471	.537
29	12	32/14	.235	.428	.442	.021	.051	.437	.448
30	28	48/42	.071	.301	.328	-.221	.038	.254	.423

FACTOR D

31	36	55/33	.001	.070	.105	.947	.083	.919	.975
32	37	56/33	-.007	.112	.140	.924	.047	.888	.961
33	9	23/69	.126	.095	.029	.318	-.137	.145	.694
34	20	40/33	.154	.050	.187	.347	-.239	.239	.504

FACTOR E

35	31	51/42	.083	.046	-.095	-.036	.609	.390	.951
36	25	45/61	.201	-.128	.006	.171	-.437	.277	.690
37	14	34/09	.229	.128	.110	.354	.519	.475	.567
38	26	46/55	-.092	.388	-.067	.272	-.431	.424	.439

Table 4.2
Item Descriptions

		Typal Array Z Scores					
		A	B	C	D	E	F
1.	I think there is a distrust of policy. There's the sense that policy can change from one administration to another.	.0	.4	.6	1.6	1.8	.4
2.	My concern is that many chemicals have not been fully tested for there effect on human health—so how can you set standards that are protective of human health?	-.7	.8	.1	1.6	1.2	.9
3.	Offering incentives for cleaning up Brownfields isn't fair to companies who have already come forward and cleaned up their mess.	-.9	-.4	-1.3	-1.0	-1.4	-1.8
4.	My fear is that the property will not be properly taken care of for the foreseeable future.	-1.3	.3	.4	-.3	-.5	1.1
5.	In looking at Brownfields redevelopment, you need to consider whether the new venture will be accepted by the community.	.7	-.5	1.3	-.6	1.0	.0
6.	You can have a public meeting, but most people won't pay any attention until the dirt is being moved.	.5	.2	-.2	.6	.2	.7
7.	It is better to clean up part of it than none of it.	1.5	.1	.6	-2.0	-.1	-.7
8.	My gut instinct is that once a site has been contaminated, it will never be totally clean.	-.8	1.1	-.7	-1.7	-1.6	.7
9.	I don't think you can go in and clean up a part of a site and use it—all the contamination problems at the site should be fixed.	-1.9	.0	.1	.9	-1.7	.7
10.	Certificates of Completion should be legally binding agreements. I would not enter into an agreement if the government reserves the right to "change" its mind and reopen the site.	-1.3	-1.2	2.3	-1.0	.7	-.9
11.	If you start creating too much oversight of these cleanups, you are going to provide disincentives for redevelopment.	-.3	-.8	.1	1.0	.3	-1.8
12.	In a state like Oklahoma where people think there is more land to use up, anytime you want to reclaim an area that has already been used, you are not on a level playing field.	.3	.1	-1.2	-.4	.6	-2.5

13.	At some point in time, there may be a need to consider economic issues or redevelopment of these sites, but I don't think that is DEQ's function.	-1.4	-.7	-.8	.0	1.1	-.9
14.	We tend to overdo things in the environmental area. We might have a site that is presenting relatively minimal danger to people and the environment and yet spend millions of dollars cleaning it up.	.7	-1.1	-.7	.9	1.5	-1.1
15.	Contamination is only a minor part of the problem--there are a whole host of reasons for the reluctance to invest in older urban areas.	1.9	-.3	.8	.6	1.2	-.2
16.	I don't think that the public's opinion about what we do with our site is relevant, unless they want to pay some of the costs.	-1.0	-1.8	-2.5	-1.7	.0	.4
17.	Real estate transactions, irrespective of the Brownfield issues, must make sense from a business perspective. Developers won't participate just to be good citizens.	.9	.2	1.7	-.1	1.0	-.9
18.	I think that public comments are often just recorded and added to a document rather than evaluated and responded to.	-1.2	.9	-.7	-1.0	.8	-1.1
19.	I don't trust business anymore than I trust government, to be real honest with you.	-1.5	1.5	-1.7	.1	.5	-.2
20.	I feel that ODEQ will look out for the interests of the community and the people whose lives, on a daily basis are affected by a site and its cleanup.	1.6	-1.7	.5	1.7	-1.6	1.8
21.	I don't have a problem with public participation--as long as the public is not from someplace else.	.2	-1.4	.2	.0	-.2	.0
22.	These sites need to be handled with some degree of finality, so that the next generation does not have to worry about them.	1.2	1.1	1.6	.4	.3	1.8
23.	Providing economic incentives for the cleanup of these sites gets political--there's not enough money to do it for everybody, so then how do you justify doing it for some?	-.5	-.4	.3	-.1	-.2	-.5
24.	Most risk-based assessments are very conservative, and so if you get an answer that's safe, then it is probably safe.	1.2	-2.2	.4	-.4	-1.4	1.1
25.	Usually, the State is so tickled to attract new industry that it pays for all the new infrastructure needed to develop Greenfields.	.3	.2	-.3	-1.3	.0	.0
26.	Business interests should be able to clean up sites voluntarily with guidance rather than under consent orders.	.8	-.4	-.4	-1.6	-2.3	-.7
27.	I think it needs to be real clear to companies that the state regulatory agency has the ultimate authority to say what is going to happen at the site.	.6	.9	.1	1.4	1.1	.9

28.	They (the government) are going to have to give a company some kind of incentive to come in and set up a business on contaminated land over non-contaminated land.	1.0	-1.0	1.5	.3	-.6	-.9
29.	I'd say that the program doesn't work if you have to add financial incentives.	-1.4	.0	-1.0	-.7	-.8	.9
30.	I think some people see Brownfields as a way to skirt or get around some of the cleanup requirements that are currently in existence.	-.5	.4	-1.8	-.7	1.2	.9
31.	For the purpose of environmental cleanups, DEQ should establish criteria to define whether an aquifer is useable or not.	.9	-.4	1.1	-.3	-.3	1.3
32.	During traditional public participation, I worry about the vocal few getting their way over a more rational group.	.6	-1.0	.8	.7	.3	.9
33.	I would say that the state needs to cross check the information businesses submit. Self monitoring reports can be fiction.	.3	1.7	.4	1.0	.1	-.2
34.	The state of the art solutions that we put in place today, we will find inadequate in 10 to 20 years.	-.4	1.4	-.5	-.7	1.0	.7
35.	It would seem like a fine thing if, after a site was remediated to some standard, we forget that it was a bad place. Isn't that the idea—to do something so that we don't have to worry about it anymore?	.2	-1.4	-.3	1.3	.1	-.4
36.	Often, regulatory agencies are not sensitive to the various costs of their decisions.	1.1	-1.3	.9	-1.6	.7	-.9
37.	The big picture is that the reason we need a Brownfields program is that the previous approach didn't work. The Brownfields program is just another government program put in place to deal with issues caused by another government program.	-.8	.3	-1.4	1.1	-.3	-.2
38.	Risk assessments are at best biased and imprecise estimates of actual risk.	-1.6	1.6	-1.0	.3	-.5	-.2
39.	I think there's two reasons people attend public meetings: one, some people are legitimately concerned; and the other one is greed—people looking for opportunities for third party lawsuits.	-1.1	-1.2	-1.2	-1.0	.9	.9
40.	It's my feeling that we don't always do a good job protecting property rights in this country.	-.8	.3	-.5	-.7	-.1	-.2
41.	If we now say that some degradation is acceptable for certain sites, the incentive to prevent pollution could be drastically undermined.	-1.3	-.3	.0	-1.4	-2.2	1.6

42.	DEQ's job is to protect human health and the environment, not to protect property values.	.3	1.8	.4	1.8	1.4	1.1
43.	In a Brownfields program, I think that the best benefit would be reaped from using industrial properties for industrial purposes, and nothing else.	.8	1.6	-.7	-1.3	-.5	.2
44.	I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability.	-1.9	1.1	1.5	2.0	-.9	.9
45.	My feeling is that if you clean up the surface and ignore the ground water, the public perception is that the site is clean, when in reality, there is still contamination.	.5	1.5	1.0	1.0	-1.1	2.0
46.	DEQ has a problem with never seeming to be able to fine anybody or punish anybody. It makes me wonder, if a business violates its Certificate of Completion, is anything going to happen to them? Will DEQ enforce?	-.9	.8	-1.0	.0	1.7	-1.3
47.	Superficial cleanups transfer risks and costs to future generations in order to suit the convenience of today's political constituencies.	-1.1	1.8	-1.1	.6	-.3	.7
48.	There is a perception that environmental groups are supposed to watch out for the public interest—I thought that was the State's function.	-.7	-.4	.5	-.4	.1	-2.0
49.	Native people cannot just sell out and move away from contamination. Their homeplace, their lands are not something you can give away, get rid of, or exchange. Ancestral lands are forever	.0	1.3	.8	.3	.2	-1.4
50.	Brownfields transactions are not environmental actions. They are real estate deals which have environmental concerns. If the Brownfield is in a good location from a realty viewpoint, it will be redeveloped – with or without a State environmental agency's program.	.0	-.3	-.2	-1.4	.7	-.5
51.	The general public needs to start understanding that they are going to have to accept some risks if they want to live in a society that's the industrial level that we are at –people are going to have to start accepting risks.	1.3	-1.7	-.5	.2	.8	.9
52.	My view on property rights is that there is a social responsibility tied to it.	.7	1.2	.4	.7	-.7	1.1
53.	I think the city needs to be involved with the entire process of a Brownfields redevelopment since they have to live with the outcome.	1.9	.1	1.8	.4	-.1	.2
54.	A small town's ability to set zoning, enforce zoning, is extremely limited. I would have no faith in their ability to do it properly.	-.7	-.1	-2.3	-.6	-1.6	.4

55.	Brownfield certificates should have some contingency so that DEQ could have a way, if need be, to do something about any problem that might occur later on. I think you've got to have the right to go back in and look at the situation.	-.2	.6	.9	-.6	-.8	.2
56.	There should be legislation where the State holds the adjacent property owners liable for any contamination on their property if they refuse access to a company that is trying to clean up a problem.	.5	-.8	1.0	1.6	-1.1	-.2
57.	Financial institutions have often been blamed for not providing capital for Brownfields transactions; however, people need to understand banks must adhere to the dictates of federal and state banking regulations regarding their lending practices and credit risk appetite.	1.1	-.3	.5	.0	.9	-1.1
58.	The big pressure to continue through on a project will come from the lending institutions...you're going to find that they're the ones that have far more effect on the situation than the state agency does.	.1	-.7	.5	-1.0	-1.5	-1.6
59.	Always requiring closure to go back to a background level is unrealistic, and there simply is not enough money to do that. We need to start getting realistic about this.	1.4	-.8	-.7	-.4	.6	-.9
60.	A participant ought to be able to change his mind because he may find that after investigation of the site that his redevelopment plan is unfeasible.	.8	-.2	.1	1.0	1.4	.2
61.	I would not like to be in the position of having to defend some of the risk assessments to the public because I think there is a real potential for misunderstanding and misuse of some of the information.	-.7	-.3	-.5	.3	-1.2	.0
62.	No lender is obligated to or should be pressured to make a Brownfields loan that does not meet normal credit quality standards for similar non-Brownfields loans.	1.3	-.3	.3	.1	.2	-.5

Factor Interpretation

Brown (1980), in discussing factor interpretation, stated,

In Q methodology, the relationship between person and test is reversed to some extent: subjects are variables and statements are sample elements drawn, however, by design rather than by random selection. But in Q, the greatest interest is in the sample elements, the statements, since the factor scores they receive reflect an attitude in operation. What is of interest are the *attitudes as attitudes* quite independently of whoever may have provided them....There is no set strategy for interpreting a factor structure; it depends foremost on what the investigator is trying to accomplish. (p. 247)

The intention of this study is to examine the differing views of stakeholders who are concerned about the cleanup and redevelopment of contaminated properties or brownfields. For the purposes of this study it is important to establish which issues represent the greatest divergence of opinion among stakeholder groups, which issues are held in agreement, and which issues are less important. The knowledge gained from this study will benefit the state in several ways. It will enable the state to direct the program in a manner sensitive to the needs of the stakeholders and general public. It will help ensure that federal funding is spent efficiently in the implementation of the state's program. It also ensures that DEQ's program development meets EPA's funding directive that public participation be a major element of the decision making process. The interpretation below is an explanation of the factor analysis results, concentrating on the issues that define a factor and on areas of agreement and disagreement between factors.

The interpretation of the data was accomplished through a comparison of the individual Q items factor scores (z-scores) and factor structure. The items that have the greatest magnitude (positive or negative) indicate greater saliency to the individuals loading highly on that factor. In contrast, the items with a score near zero have little

saliency for the respondent (Focht 1995). "By examining the structure of each common factor alone and in comparison with other common factors, and relying on other information obtained during the research...the investigator can propose explanations of the Q sorts" (Focht 1995, p. 139). Short paragraphs of explanation are assigned to describe the factors, and a descriptive name is assigned as a mnemonic device. To avoid misinterpreting the meaning of the factor, the investigator must validate the interpretations, usually by re-interviewing the highest and purest loaders on each factor. The factor interpretations were verified by the following method: the high loaders were contacted by telephone, the descriptive paragraph and descriptive name were read to the participant, and they were asked if they felt it accurately summarized their view and whether they objected to any statement in the description or the descriptive name. In general, the high loaders agreed with the assessment of their concerns, several clarified and elaborated upon the description, and this information has been included in the interpretations.

Technical Optimists. Eleven participants loaded significantly on Factor A Those who loaded significantly on this factor⁴ represent regulatory and technical fields; however, two people who represent the economic development field also loaded on this factor. Two of the respondents significantly loaded on this factor and factor C: an economic development specialist and a young environmental regulator.

Those loading significantly on this factor feel strongly that the contamination issue is not the only reason Brownfield sites are not being redeveloped and that cities, to a great extent, control what areas of in their jurisdiction are developed. Therefore, Technical Optimists feel that cities should be involved throughout the brownfield redevelopment process, both in a traditional public (community) participation sense and in the sense of the city government as an equal partner in a project.

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>F</u>
Aa/53 I think the city needs to be involved with the entire process of a Brownfields redevelopment since they have to live with the outcome.	1.9 (+6)	0.1 (0)	1.8 (+6)	0.4 (+1)	-0.1 (-1)	0.2 (+1)
O/15 Contamination is only a minor part of the problem--there are a whole host of reasons for the reluctance to invest in older urban areas.	1.9 (+6)	-0.3 (0)	0.8 (+2)	0.6 (+2)	1.2 (+4)	-0.2 (-1)
P/16 I don't think that the public's opinion about what we do with our site is relevant, unless they want to pay some of the costs.	-1.0 (-3)	-1.8 (-6)	-2.5 (-6)	-1.7 (-5)	0.0 (0)	0.4 (+1)
<p>Technical Optimists feel that everyone has motives for their actions, but they do not tend to question the motives of people/groups with whom they interact. They tend to trust the actions and motives of DEQ, business interests, and the general public.</p>						
T/20 I feel that ODEQ will look out for the interests of the community and the people whose lives, on a daily basis, are affected by a site and its cleanup.	1.6 (+5)	-0.7 (-5)	0.5 (+2)	1.7 (+5)	-1.6 (-5)	1.8 (+6)
S/19 I don't trust business anymore than I trust government, to be real honest with you.	-1.5 (-5)	1.5 (+4)	-1.7 (-5)	0.1 (0)	0.5 (+1)	-0.2 (-1)
D/4 My fear is that the property will not be properly taken care of for the foreseeable future.	-1.3 (-4)	0.3 (+1)	0.4 (+1)	-0.3 (-1)	-0.5 (-2)	1.1 (+4)
R/18 I think that public comments are often just recorded and added to a document rather than evaluated and responded to.	-1.2 (-3)	0.9 (+3)	-0.7 (-3)	-1.0 (-3)	0.8 (+2)	-1.1 (-4)
MM/39 I think there's two reasons people attend public meetings: one some people are legitimately concerned; and the other one is greed--people looking for opportunities for third party lawsuits.	-1.1 (-3)	-1.2 (-4)	-1.2 (-4)	-1.0 (-3)	0.9 (+3)	0.9 (+3)

TT/46 DEQ has a problem with never seeming to be able to fine anybody or punish anybody. It makes me wonder, if a business violates its Certificate of Completion, is anything going to happen to them? Will DEQ enforce?

-0.9 0.8 -1.0 0.0 1.7 -1.3
(-2) (+2) (-3) (0) (+6) (-4)

They feel that brownfield sites can be cleaned up for reuse without having to remediate the site to background levels, and they believe that the participating company should receive a release from liability as long as the remedy functions properly and is maintained.

RR/44 I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability.

-1.9 1.1 1.5 2.0 -0.9 0.9
(-6) (+3) (+4) (+6) (-3) (+2)

I/9 I don't think you can go in and clean up a part of a site and use it--all the contamination problems at the site should be fixed.

-1.9 0.0 0.1 0.9 -1.7 0.7
(-6) (0) (0) (+2) (-5) (+1)

G/7 It is better to clean up part of it than none of it.

1.5 0.1 0.6 -2.0 -0.1 -0.7
(+5) (0) (+2) (-6) (1) (-2)

Gg/59 Always requiring closure to go back to a background level is unrealistic, and there simply is not enough money to do that. We need to start getting realistic about this.

1.4 -0.8 -0.7 -0.4 0.6 -0.9
(+5) (-3) (-2) (-1) (+1) (-2)

EE/31 For the purpose of environmental cleanups, DEQ should establish criteria to define whether an aquifer is usable or not.

0.9 -0.4 1.1 -0.3 -0.3 1.3
(+3) (-2) (+4) (-1) (-1) (+5)

YY/51 The general public needs to start understanding that they are going to have to accept some risks if they want to live in a society that's the industrial level that we are at--people are going to have to start accepting risks.

1.3 -1.7 -0.5 0.2 0.8 0.9
(+4) (-5) (-2) (+1) (+2) (+2)

UU/47 Superficial cleanups transfer risks and costs to future generations in order to suit the convenience of today's political constituencies.

-1.1 1.8 -1.1 0.6 -0.3 0.7
(-3) (+6) (-4) (+2) (-1) (+1)

OO/41 If we now say that some degradation is acceptable for certain sites, the incentive to prevent pollution could be drastically undermined.

-1.3 -0.3 0.0 -1.4 -2.2 1.6
(-4) (-1) (0) (-4) (6) (+5)

They feel that DEQ must reserve the right to reexamine brownfield sites in the future.

C/10 Certificates of Completion should be legally binding agreements. I would not enter into an agreement if the government reserves the right to "change" its mind and reopen the site.

-1.3 -1.2 2.3 -1.0 0.7 -0.9
(-4) (-4) (+6) (-3) (+2) (-3)

However, they feel that these site need to be fully addressed so that the closure has a degree of finality.

V/22 These sites need to be handled with some degree of finality so that the next generation does not have to worry about them.

1.2 1.1 1.6 0.4 0.3 1.8
(+4) (+3) (+5) (+1) (+1) (+5)

They feel that risk assessments are effective tools for estimating actual risk, and they believe that risk assessor's are ethical and use their professional judgement appropriately throughout the risk assessment process.

LL/38 Risk assessments are at best biased and imprecise estimates of actual risk.

-1.6 1.6 -1.0 0.3 -0.5 -0.2
(-5) (+5) (-3) (+1) (-2) (-1)

X/24 Most risk-based assessments are very conservative, and so if you get an answer that's safe, then it is probably safe.

1.2 -2.2 0.4 -0.4 -1.4 1.1
(+4) (-6) (+1) (-1) (-4) (+4)

They believe that economic issues are central to the brownfield problem and believe DEQ should be sensitive to how its actions affect both cleanup and redevelopment.

CC/29 I'd say that the program doesn't work if you have to add financial incentives.

-1.4 0.0 -1.0 -0.7 -0.8 0.9
(-5) (0) (-3) (-2) (-3) (+3)

M/13 At some point in time, there may be a need to consider economic issues or redevelopment of these sites, but I don't think that is DEQ's function.

-1.4 -0.7 -0.8 0.0 1.1 -0.9
(-4) (-2) (-3) (0) (+3) (-3)

Ee/57 Financial institutions have often been blamed for not providing capital for Brownfields transactions; however, people need to understand banks must adhere to the dictates of federal and state banking regulations regarding their lending practices and credit risk appetite.	1.1 (+3)	-0.3 (-1)	0.5 (+2)	0.0 (0)	0.9 (+2)	-1.1 (-4)
JJ/62 No lender is obligated to or should be pressured to make a Brownfields loan that does not meet normal credit quality standards for similar non-Brownfields loans.	1.3 (+4)	-0.3 (-1)	0.3 (+1)	0.1 (0)	0.2 (0)	-0.5 (-2)
BB/28 They (the government) are going to have to give a company some kind of incentive to come in and set up a business on contaminated land over non-contaminated land.	1.0 (+3)	-1.0 (-3)	1.5 (+5)	0.3 (+1)	-0.6 (-2)	-0.9 (-3)
JJ/36 Often, regulatory agencies are not sensitive to the various costs of their decisions.	1.1 (+3)	-1.3 (-4)	+0.9 (+3)	-1.6 (-5)	0.7 (+2)	-0.9 (-2)
C/3 Offering incentives for cleaning up Brownfields isn't fair to companies who have already come forward and cleaned up their mess.	-0.9 (-3)	-0.4 (-1)	-1.3 (-4)	-1.0 (-3)	-1.4 (-4)	-1.8 (-5)

Technical Optimists can be characterized by their optimism that science and technology can solve the problems inherent at brownfield sites. They, in general, trust that those involved in cleaning and redeveloping brownfields, whether they represent business, government, or the general public, will conduct their actions in an ethical manner and that the motives of the groups involved are honest. This may be due to the fact that many of those loading on this factor are regulators and consultants who view their participation in the process as ethical and tend to be offended when accused of being biased or paid off by business interests. They feel that economic issues are central to the brownfield problem, and that for a project to be successful, the community needs to be involved in the process. They feel that public participation is imperative to the success of a project and believe that the public's involvement will help ensure that the community understands the process, approves of the expected outcome, and is aware of

the benefits, as well as the responsibilities the project engenders. Technical Optimists believe that portions of sites can be cleaned up for reuse and that sites need not be cleaned to background levels to be safe for future use. They feel that risk assessments are effective tools for estimating actual risk and believe that risk assessors are ethical professionals upon whom one can be rely. Again, they are often responsible for performing or reviewing risk assessments and feel that the professional decisions made during risk assessments are ethical.

Wary Environmental Stewards. Six participants loaded significantly on Factor B. The significant loaders on this factor⁵ represent environmental activists; however, one respondent representing the general public also loaded on this factor. Wary Environmental Stewards do not believe they or future generations should have to accept risks to their health or the health of the environment from contamination caused by industry.

UU/47 Superficial cleanups transfer risks and costs to future generations in order to suit the convenience of today's political constituencies.	-1.1 (-3)	1.8 (+6)	-1.1 (-4)	0.6 (+2)	-0.3 (-1)	0.7 (+1)
--	--------------	-------------	--------------	-------------	--------------	-------------

YY/51 The general public needs to start understanding that they are going to have to accept some risks if they want to live in a society that's the industrial level that we are at--people are going to have to start accepting risks.	1.3 (+4)	-1.7 (-5)	-0.5 (-2)	0.2 (+1)	0.8 (+2)	0.9 (+2)
--	-------------	--------------	--------------	-------------	-------------	-------------

N/14 We tend to overdo things in the environmental area. We might have a site that is presenting relatively minimal danger to people and the environment and yet spend millions of dollars cleaning it up.	0.7 (+2)	-1.1 (-3)	-0.7 (-2)	0.9 (+3)	1.5 (+5)	-1.1 (-3)
---	-------------	--------------	--------------	-------------	-------------	--------------

V/22 These sites need to be handled with some degree of finality so that the next generation does not have to worry about them.	1.2 (+4)	1.1 (+3)	1.6 (+5)	0.4 (+1)	0.3 (+1)	1.8 (+5)
--	-------------	-------------	-------------	-------------	-------------	-------------

They have little faith in risk assessments as effective tools for estimating actual risk and feel that there is great potential for abuse of risk assessment by the risk assessor.

X/24 Most risk-based assessments are very conservative, and so if you get an answer that's safe, then it is probably safe.

1.2	-2.2	0.4	-0.4	-1.4	1.1
(+4)	(-6)	(+1)	(-1)	(-4)	(+4)

They are not in favor of allowing unlimited use of Brownfields sites and feel that the sites should remain industrial, and they feel that there should be a means of tracking these site in the future to ensure they remain industrial.

QQ/43 In a Brownfields program, I think that the best benefit would be reaped from using industrial properties for industrial purposes, and nothing else.

0.8	1.6	-0.7	-1.3	-0.5	0.2
(+2)	(+5)	(-2)	(-4)	(-2)	(0)

II/35 It would seem like a fine thing if, after a site was remediated to some standard, we forget that it was a bad place. Isn't that the idea--to do something so that we don't have to worry about it anymore?

0.2	-1.4	-0.3	1.3	0.1	-0.4
(0)	(-4)	(-1)	(+4)	(0)	(-1)

HH/34 The state of the art solutions we put in place today, we will find inadequate in 10 to 20 years.

-0.4	1.4	-0.5	-0.7	1.0	0.7
(-1)	(+4)	(-1)	(-2)	(+3)	(+2)

SS/45 My feeling is that if you clean up the surface and ignore the ground water, the public perception is that the site is clean, when in reality, there is still contamination.

0.5	1.5	1.0	1.0	-1.1	2.0
(+1)	(+4)	(+4)	(+3)	(-3)	(+6)

H/8 My gut instinct is that once a site has been contaminated, it will never be totally clean.

-0.8	1.1	-0.7	-1.7	-1.6	0.7
(-2)	(+3)	(-2)	(-6)	(-5)	(+2)

RR/44 I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability.

-1.9	1.1	1.5	2.0	-0.9	0.9
(-6)	(+3)	(+4)	(+6)	(-3)	(+2)

They feel that DEQ must have the final say in how a site is remediated and reserve the right

to reexamine brownfield sites in the future.

C/10 Certificates of Completion should be legally binding agreements. I would not enter into an agreement if the government reserves the right to "change" its mind and reopen the site.

-1.3	-1.2	2.3	-1.0	0.7	-0.9
(-4)	(-4)	(+6)	(-3)	(+2)	(-3)

AA/27 I think it needs to be real clear to companies that the state regulatory agency has the ultimate authority to say what is going to happen at the site.

0.6	0.9	0.1	1.4	1.1	0.9
(+1)	(+2)	(0)	(+4)	(+4)	(+3)

They do not trust the actions and motives of business or government and feel that there is a strong history of abuse of the public trust by government and business.

GG/33 I would say that the state needs to cross check the information businesses submit. Self monitoring reports can be fiction.

0.3	1.7	0.4	1.0	0.1	-0.2
(+1)	(+5)	(+1)	(+3)	(0)	(-1)

S/19 I don't trust business anymore than I trust government, to be real honest with you.

-1.5	1.5	-1.7	0.1	0.5	-0.2
(-5)	(+4)	(-5)	(0)	(+1)	(-1)

R/18 I think that public comments are often just recorded and added to a document rather than evaluated and responded to.

-1.2	0.9	-0.7	-1.0	0.8	-1.1
(-3)	(+3)	(-3)	(-3)	(+2)	(-4)

T/20 I feel that ODEQ will look out for the interests of the community and the people whose lives, on a daily basis, are affected by a site and its cleanup.

1.6	-0.7	0.5	1.7	-1.6	1.8
(+5)	(-5)	(+2)	(+5)	(-5)	(+6)

They believe that the overarching public opinion is important at local sites since tax dollars are usually involved, directly or indirectly.

U/21 I don't have a problem with public participation--as long as the public is not from someplace else.

0.2	-1.4	0.2	0.0	-0.2	0.0
(0)	(-5)	(0)	(0)	(-1)	(0)

P/16 I don't think that the public's opinion about what we do with our site is relevant, unless they want to pay some of the costs.

-1.0	-1.8	-2.5	-1.7	0.0	0.4
(-3)	(-6)	(-6)	(-5)	(0)	(+1)

They believe that their concerns are denigrated by government and business which
 "write-off" their concerns as irrational and emotional.

FF/32 During traditional public participation, I worry about the vocal few getting their way over a more rational group.

0.6	-1.0	0.8	0.7	0.3	0.9
(+1)	(-3)	(+3)	(+2)	(+1)	(+3)

MM/39 I think there's two reasons people attend public meetings: one some people are legitimately concerned; and the other one is greed--people looking for opportunities for third party lawsuits.

-1.1	-1.2	-1.2	1.0	0.9	0.9
(-3)	(-4)	(-4)	(-3)	(+3)	(+3)

Wary Environmental Stewards think that DEQ's function is to protect human health and the environment and that its concerns should not extend to the cost of meeting that objective.

PP/42 DEQ's job is to protect human health and the environment, not to protect property values.

0.3	1.8	0.4	1.8	1.4	1.1
(+1)	(+6)	(+1)	(+6)	(+5)	(+4)

JJ/36 Often, regulatory agencies are not sensitive to the various costs of their decisions.

1.1	-1.3	+0.9	-1.6	0.7	-0.9
(+3)	(-4)	(+3)	(-5)	(+2)	(-2)

BB/28 They (the government) are going to have to give a company some kind of incentive to come in and set up a business on contaminated land over non-contaminated land.

1.0	-1.0	1.5	0.3	-0.6	-0.9
(+3)	(-3)	(+5)	(+1)	(-2)	(-3)

They feel that citizens' property rights are not respected by business and government.

They think that business and government believe that communities can be "bought off" when contamination occurs. They also believe that business should abide by the responsibilities intrinsic in the ownership of land and not defile it.

WW/49 Native people cannot just sell out and move away from contamination. Their homeplace, their lands are not something you can give away, get rid of, or exchange. Ancestral lands are forever.

0.0	1.3	0.8	0.3	0.2	-1.4
(0)	(+4)	(+3)	(+1)	(+1)	(-4)

ZZ/52 My view on property rights is	0.7	1.2	0.4	0.7	-0.7	1.1
that there is a social responsibility	(+2)	(+3)	(+1)	(+2)	(-2)	(+4)
tied to it.						

Wary Environmental Stewards believe in a philosophical premise that current generations are the caretakers of the planet, and they are very concerned about exposing future generations to health and environmental risks caused by industrial abuses of the environment. They are wary of government and do not trust its motives nor the motives of business interests. They tend to believe that there is collusion between the business and government. Wary Environmental Stewards feel that government and corporations are non-personal entities that have lost touch with the realities of nature. They believe that both entities are motivated only by greed, and that taxpayers are forced to pay for corporations greedy mistakes. They believe that business and government try to disguise the "anything for a buck" mentality in the name of "progress." They are not against progress as long as it is "real progress," which they define as sustainable. They have no faith in the ability of risk assessors to estimate the actual risk a site poses and believe that risk assessments provide too many opportunities for abuse by the risk assessor. They do not think that brownfield sites should be reused for any purpose other than industrial because they do not believe that the science is adequate to fully restore sites to levels safe enough for unrestricted use. They feel that the concerned citizens' opinions are denigrated by business and government as being irrational and emotional. They tend to feel that they speak for those who do not have a voice, i.e., future generations, non-human species affected by the actions of man, and people with extenuating circumstances who cannot speak for themselves. They believe that DEQ's decisions are *always* based on the economic costs and that the cost of a project should not be a factor in the protection of human health and the environment. They feel, in general, that government and business do not respect property rights, and that business should respect the responsibility attached to property ownership and not pollute it and neighboring properties. They also

believe that if DEQ did its job, property rights would not be an issue. Wary Environmental Stewards can be characterized by a skepticism of DEQ's motive and its responsibility to act in the public interest. They believe that their skepticism is healthy, based on their past experience with DEQ. They feel that they have a duty to protect the environment against corporate greed for the benefit of future generations and the ecosystem.

The major areas of disagreement between the opinions voiced by Technical Optimists and Wary Environmental Stewards concern the faith placed in the ability of science to estimate environmental risks with risk assessment models. These stakeholder groups have opposing views concerning the wisdom of relying on environmental risk assessments in decision making. Technical Optimists are comfortable with the answers that risk assessment provides, while Wary Environmental Stewards believe that the science is insufficient to support the claims of risk assessment models and that there is too much room in the models for manipulation by the risk assessor. Technical Optimists there are risks associated with living in an industrialized nation and the public needs to recognize that fact; however, Wary Environmental Stewards believe that with technologies currently available, industry does not have to continue to degrade the environment and that the only reason pollution continues is because of corporate greed.

Technical Optimists and Wary Environmental Stewards also disagree on the level of trust that should be placed in business and government; however, they tend to agree the general public's active participation is based on legitimate concerns and not on greed. Wary Environmental Stewards feel that costs are always the driving force behind DEQ decisions, and therefore, DEQ cannot be trusted to act in the public interest.

Economic Realists. Ten participants loaded significantly on Factor C. Those who

loaded significantly on this factor⁶ include economic developers, the general public, a banker, an environmental manager at a consulting firm, a public health director, a business owner, a city environmental inspector, and a regulator. Two respondents significantly loaded on both Factor C and Factor B. The confounded respondents were an economic developer and a public health director.

Economic Realists feel that there should be definite limits on future liability attached to a site once it has been cleaned up under State supervision and that government should not reserve the right to revisit sites after closure,

C/10 Certificates of Completion should be legally binding agreements. I would not enter into an agreement if the government reserves the right to "change" its mind and reopen the site.

-1.3	-1.2	2.3	-1.0	0.7	-0.9
(-4)	(-4)	(+6)	(-3)	(+2)	(-3)

Dd/56 There should be legislation where the State holds the adjacent property owners liable for any contamination on their property if they refuse access to a company that is trying to clean up a problem.

0.5	-0.8	1.0	1.6	-1.1	-0.2
(+1)	(-2)	(+3)	(+4)	(-3)	(0)

They acknowledge that there may be some circumstances under which a site might need to be reexamine and therefore feel that DEQ should reserve a mechanism to allow for this.

Cc/55 Brownfield certificates should have some contingency so that DEQ could have a way, if need be, to do something about any problem that might occur later on. I think you've got to have the right to go back in a look at the situation.

-0.2	+0.6	+0.9	-0.6	-0.8	+0.2
(-1)	(+2)	(+3)	(-2)	(-2)	(+1)

They view brownfield projects as business transactions not as something that should be performed by business for the greater good of society. They do not think that the majority of brownfield sites will be redeveloped if it remains cheaper to develop pristine lands.

Q/17 Real estate transactions, irrespective of the Brownfield issues, must make sense from a business perspective. Developers won't participate just to be good citizens.

0.9	0.2	1.7	-0.1	1.0	-0.9
(+3)	(+1)	(+5)	(0)	(+3)	(-3)

RR/44 I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability.

-1.9 1.1 1.5 2.0 -0.9 0.9
(-6) (+3) (+4) (+6) (-3) (+2)

V/22 These sites need to be handled with some degree of finality so that the next generation does not have to worry about them.

1.2 1.1 1.6 0.4 0.3 1.8
(4) (+3) (+5) (+1) (+1) (+5)

SS/45 My feeling is that if you clean up the surface and ignore the ground water, the public perception is that the site is clean, when in reality, there is still contamination.

0.5 1.5 1.0 1.0 -1.1 2.0
(+1) (+4) (+4) (+3) (-3) (+6)

EE/31 For the purpose of environmental cleanups, DEQ should establish criteria to define whether an aquifer is usable or not.

0.9 -0.4 1.1 -0.3 -0.3 1.3
(+3) (-2) (+4) (-1) (-1) (+5)

The feel that risk assessments are an effective tool for estimating actual risk.

LL/38 Risk assessments are at best biased and imprecise estimates of actual risk.

-1.6 1.6 -1.0 0.3 -0.5 -0.2
(-5) (+5) (-3) (+1) (-2) (-1)

They do not question the motives of people interested in the cleanup and redevelopment brownfield sites and tend to believe that the various groups interests will provide a suitable outcome.

DD/30 I think some people see Brownfields as a way to skirt or get around some of the cleanup requirements that are currently in existence.

-0.5 0.4 -1.8 -0.7 1.2 0.9
(-1) (+2) (-5) (-2) (+4) (+3)

UU/47 Superficial cleanups transfer risks and costs to future generations in order to suit the convenience of today's political constituencies.

-1.1 1.8 -1.1 0.6 -0.3 0.7
(-3) (+6) (-4) (+2) (-1) (+1)

MM/39 I think there's two reasons people attend public meetings: one some people are legitimately concerned; and the other one is greed--people looking for opportunities for third party lawsuits.

-1.1 -1.2 -1.2 1.0 0.9 0.9
(-3) (-4) (-4) (-3) (+3) (+3)

in brownfield projects because the community "has to live with it" and will be ultimately responsible for the success or failure of the economic redevelopment. They also feel that communities' private sector have a great interest in ensuring that local properties are cleaned up, reused, and maintained and that this fact should be recognized by the state and federal government as well as the general public. They are not enthusiastic about the potential for partial cleanups at brownfield sites, but they are not confident that technology can return a site to pristine conditions, or if it were possible, that costs would be prohibitive; therefore, they are willing to accept other options. They do not question the motives of the other stakeholder groups although they may not be happy with other's actions. They have some faith that business and government will make the correct judgements and decisions throughout the cleanup and reuse of brownfield sites, but strongly feel that "government" should include local, state, and federal agencies. Economic Realists can be characterized by what they feel is realistic approach to the brownfield problem. They feel that if you remove the environmental liability problems associated with brownfield site through a state supervised cleanup, economic forces will be allowed to function and the property will once again be productive, although they continue to voice concern about third party lawsuits and a legal system that is "out of control." They also feel that only sites of economic importance will be "voluntarily" cleaned up.

A major areas of disagreement between Economic Realists and Technical Optimists is the issue of future reexamination by DEQ and/or EPA of sites cleaned up under the program. Technical Optimists feel that government should have a way to reopen these sites in case new information becomes available either about wastes on site not previously discovered or changes in the scope of knowledge about contaminants. Economic Realists believe that any site reopen clause is a disincentive for business to

act. Economic Realists are not entirely comfortable with the idea of partial cleanups but accepts the idea for economic reasons. Technical Optimists believe that partial cleanups can be safe and feel that allowing partial cleanups may be the only way to get some sites remediated and reused.

Economic Realists differ from Wary Environmental Stewards in several areas. Economic Realists believe that the local community should always be involved in the decision making because they have a greater interest in the outcome of the project. Whereas, Wary Environmental Stewards tend to feel that local communities will be motivated by the desire for economic development and will not consider the "big picture" and that it is DEQ's job to protect local communities from themselves. Economic Realists tend to trust the motives of business and government; whereas, Wary Environmental Stewards feel that experience has taught them not to trust these entities. Both Wary Environmental Stewards and Economic Realists agree that brownfield sites should be handled with some degree of finality, but they have different definitions of finality. Economic Realists refer to to finality of legal environmental liability, while Wary Environmental Stewards refer to level of cleanup. Economic Realists view brownfields as a problem of legal liability attached to real estate, and if the liability problem is dealt with through the use of cleanup technologies and official liability releases, the problem of redevelopment will be a result of market forces. Wary Environmental Stewards are leery of the potential reuses that might occur in a free market without governmental controls over future use of brownfield sites.

Concerned Neighbors. Two participants loaded significantly on Factor D. Those loading on this factor⁷ are those who own property adjacent to brownfields. There were no confounded loaders on Factor D.

The respondents who loaded significantly on Factor D believe that all environmental

problems should be taken care of during a cleanup and that wastes should not be left on site. They believe that it makes sense to do the job right the first time and not leave problems that will have to be readdressed in the future. They believe that it is technologically possible to accomplish this goal.

G/7 It is better to clean up part of it than none of it. 1.5 0.1 0.6 -2.0 -0.1 -0.7
(+5) (0) (+2) (-6) (1) (-2)

RR/44 I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability. -1.9 1.1 1.5 2.0 -0.9 0.9
(-6) (+3) (+4) (+6) (-3) (+2)

I/9 I don't think you can go in and clean up a part of a site and use it--all the contamination problems at the site should be fixed. -1.9 0.0 0.1 0.9 -1.7 0.7
(-6) (0) (0) (+2) (-5) (+1)

H/8 My gut instinct is that once a site has been contaminated, it will never be totally clean. -0.8 1.1 -0.7 -1.7 -1.6 0.7
(-2) (+3) (-2) (-6) (-5) (+2)

SS/45 My feeling is that if you clean up the surface and ignore the ground water, the public perception is that the site is clean, when in reality, there is still contamination. 0.5 1.5 1.0 1.0 -1.1 2.0
(+1) (+4) (+4) (+3) (-3) (+6)

II/35 It would seem like a fine thing if, after a site was remediated to some standard, we forget that it was a bad place. Isn't that the idea--to do something so that we don't have to worry about it anymore? 0.2 -1.4 -0.3 1.3 0.1 -0.4
(0) (-4) (-1) (+4) (0) (-1)

QQ/43 In a Brownfields program, I think that the best benefit would be reaped from using industrial properties for industrial purposes, and nothing else. 0.8 1.6 -0.7 -1.3 -0.5 0.2
(+2) (+5) (-2) (-4) (-2) (0)

However they tend to believe that costs of environmental cleanups are higher than is justified by the gain to society.

N/14 We tend to overdo things in the environmental area. We might have a site that is presenting relatively minimal danger to people and the environment and 0.7 -1.1 -0.7 0.9 1.5 -1.1
(+2) (-3) (-2) (+3) (+5) (-3)

A/1 I think there is a distrust of policy. 0.0 0.4 0.6 1.6 1.8 0.4
There's the sense that policy can change (- 0) (+ 2) (+ 2) (+ 5) (+ 6) (+ 1)
from one administration to another.

KK/37 The big picture is that the reason -0.8 0.3 -1.4 1.1 -0.3 -0.2
we need a Brownfields program is that the (- 2) (+ 1) (- 5) (+ 4) (- 1) (- 1)
previous approach didn't work. The
Brownfields program is just another
government program put in place to deal
with issues caused by another government
program.

JJ/36 Often, regulatory agencies are 1.1 -1.3 +0.9 -1.6 0.7 -0.9
not sensitive to the various costs of their (+ 3) (- 4) (+ 3) (- 5) (+ 2) (- 2)
decisions.

Concerned Neighbors trust DEQ to protect human health and the environment but do not
trust business interests.

PP/42 DEQ's job is to protect human 0.3 1.8 0.4 1.8 1.4 1.1
health and the environment, not to (+ 1) (+ 6) (+ 1) (+ 6) (+ 5) (+ 4)
protect property values.

T/20 I feel that ODEQ will look out for the 1.6 -0.7 0.5 1.7 -1.6 1.8
interests of the community and the people (+ 5) (- 5) (+ 2) (+ 5) (- 5) (+ 6)
whose lives, on a daily basis, are affected
by a site and its cleanup.

GG/33 I would say that the state needs 0.3 1.7 0.4 1.0 0.1 -0.2
to cross check the information businesses (+ 1) (+ 5) (+ 1) (+ 3) (0) (- 1)
submit. Self monitoring reports can be
fiction.

Concerned Neighbors are unsure of the environmental decisions being made without
without full knowledge of the risk.

C/10 Certificates of Completion should be -1.3 -1.2 2.3 -1.0 0.7 -0.9
legally binding agreements. I would not enter(-4) (- 4) (+ 6) (- 3) (+ 2) (- 3)
into an agreement if the government reserves
the right to "change" its mind and reopen the
site.

B/2 My concern is that many chemicals -0.7 0.8 0.1 1.6 1.2 0.9
have not been fully tested for their effect (- 2) (+ 2) (0) (+ 5) (+ 4) (+ 2)
on human health--so how can you set
standards that are protective of human health?

They believe that adjacent property owners should allow access to their property in order that all contamination can be cleaned up.

Dd/56 There should be legislation where the State holds the adjacent property owners liable for any contamination on their property if they refuse access to a company that is trying to clean up a problem.

0.5	-0.8	1.0	1.6	-1.1	-0.2
(+1)	(-2)	(+3)	(+4)	(-3)	(0)

They believe that local communities bear the costs of constructing infrastructure to lure business, not the state.

Y/25 Usually, the State is so tickled to attract new industry that it pays for all the new infrastructure needed to develop Greenfields

0.3	0.2	-0.3	-1.3	0.0	0.0
(0)	(+1)	(-1)	(-4)	(0)	(0)

They do not believe that brownfields issues will undermine current environmental pollution standards.

OO/41 If we now say that some degradation is acceptable for certain sites, the incentive to prevent pollution could be drastically undermined.

-1.3	-0.3	0.0	-1.4	-2.2	1.6
(-4)	(-1)	(0)	(-4)	(6)	(+5)

They believe that sites will not be cleaned up and redeveloped without an environmental agency program because without some structure to address the problems inherent at brownfield sites, no one will consider the project. They also feel that program must be flexible or no one will enter the program.

XX/50 Brownfields transactions are not environmental actions. They are real estate deals which have environmental concerns. If the Brownfield is in a good location from a realty viewpoint, it will be redeveloped -- with or without a State environmental agency's program.

0.0	-0.3	-0.2	-1.4	0.7	-0.5
(0)	(0)	(-1)	(-4)	(+2)	(-2)

li/60 A participant ought to be able to change his mind because he may find that after investigation of the site that his redevelopment plan is unfeasible.

0.8	-0.2	0.1	1.0	1.4	0.2
(+2)	(0)	(0)	(+3)	(+5)	(0)

They are not concerned about the fairness of offering incentives to business but feel that extensive oversight by the state might be a disincentive.

C/3 Offering incentives for cleaning up Brownfields isn't fair to companies who have already come forward and cleaned up their mess.	-0.9 (-3)	-0.4 (-1)	-1.3 (-4)	-1.0 (-3)	-1.4 (-4)	-1.8 (-5)
---	--------------	--------------	--------------	--------------	--------------	--------------

K/11 If you start creating too much oversight of these cleanups, you are going to provide disincentives for redevelopment.	-0.3 (-1)	-0.8 (-3)	0.1 (0)	1.0 (+3)	0.3 (+1)	-1.8 (-5)
---	--------------	--------------	------------	-------------	-------------	--------------

Concerned Neighbors have faith that the state government will look out for their welfare, although they are wary of EPA and sometimes their own local government. They often distrust their local government because of as its major interest in economic development. Although they are wary of governmental policies, they tend to trust the state as a mediator between federal interests and local interests and as protection from overzealous local economic interest. They feel that the state listens to their concerns and fairly addresses them. They feel that business/industry does not disclose information about the affects of their products and practices, and that the business/industry knows the products and practices adversely affect the health of their employees and the public. This distrust extends to businesses' motivation to conduct a proper cleanup at a brownfield site. They think the state should not sign away its right to reopen a site in the future. They have faith in technology but are concerned that science does not have all the answers it needs for environmental decision making. For this reason, they are not in favor of leaving wastes on site or allowing partial cleanups. They want sites to be cleaned up to a point that would allow unrestricted use of the property so they can "move on." This view extends to neighboring properties that may have been contaminated; they feel that they would allow the cleanup of their property and feel that other neighbors should do the same because the problem won't be fixed otherwise. Although property values are important in their concern the major issue for Concerned Neighbors is their families' health and how these

sites might affect them. They do not want to have to worry about the effects of residual contamination.

The major area of disagreement between Concerned Neighbors and Technical Optimists is the issue of partial cleanups. Technical Optimists view partial cleanups as a viable option for returning sites to productive use, while the Concerned Neighbors are not in favor of partial cleanups and feel that all the environmental problems at a site need to be addressed during a cleanup. Concerned Neighbors tend to believe that it is a waste of time and money to mobilize for an environmental cleanup and not address the full nature of the problem. They see this as false economy.

The Concerned Neighbors and Wary Environmental Stewards differ in the level of trust they have for government. Concerned Neighbors feel that state government will protect them from business interests, local government, and EPA; whereas, Wary Environmental Stewards tend to distrust all levels of government and business. Concerned Neighbors also differ from Wary Environmental Stewards in their view of the proper future use of brownfields sites. Concerned Neighbors want brownfields to be cleaned to a point that allows unrestricted use of the site, but Wary Environmental Stewards believe that sites can never be clean enough to allow unrestricted use. Both Concerned Neighbors and Wary Environmental Stewards believe that neighboring property owners should allow companies access to their properties for the cleanup of any contamination which has migrated to the neighboring property, and they believe that if access is refused during a brownfield cleanup the neighboring property owner should be held responsible for the contamination on his property.

Concerned Neighbors and Economic Realists also differ on the issue of partial cleanups. Economic Realists believe that partial cleanups are an economic reality, i.e., a complete cleanup of all the environmental contamination at a site would cost more than the

property is worth. Concerned Neighbors believe that the sites should be completely cleaned up to a point that allows unrestricted use of the site and believe that the often expressed economic reasoning for partial cleanups is a false economy. Economic Realists have more faith that business can be trusted to do the "right" thing at brownfields sites, while Concerned Neighbors do not trust business interests; they feel that businesses' major interest is to make money, no matter what it takes and no matter who it hurts. Due to this distrust of business, Concerned Neighbors believe that the state should reserve the right to reexamine sites in the future; whereas, Economic Realists believe that type of state intervention would defeat the purpose of the program.

Factor E was bipolar (48% negative) and therefore was split to form two factors,⁸ Factors E and F.

Realistic Reformers. There were two significant loaders on Factor E. Those loading on Factor E are regulators. The researcher's view is represented within this factor and is included in the study due to her involvement as the Brownfield Coordinator for the State of Oklahoma. There were no confounded loaders on Factor E.

Those who loaded on Factor E feel that DEQ often does not fulfill its obligation to protect the public's interest.

TT/46 DEQ has a problem with never seeming to be able to fine anybody or punish anybody. It makes me wonder, if a business violates its Certificate of Completion, is anything going to happen to them? Will DEQ enforce?	-0.9 (- 2)	0.8 (+ 2)	-1.0 (- 3)	0.0 (0)	1.7 (+ 6)	-1.3 (- 4)
--	-----------------	----------------	-----------------	--------------	-----------------------	------------------------

T/20 I feel that ODEQ will look out for the interests of the community and the people whose lives, on a daily basis, are affected by a site and its cleanup.	1.6 (+ 5)	-0.7 (- 5)	0.5 (+ 2)	1.7 (+ 5)	-1.6 (- 5)	1.8 (+ 6)
---	----------------	-----------------	----------------	----------------	------------------------	----------------

A/1 I think there is a distrust of policy.	0.0	0.4	0.6	1.6	1.8	0.4
---	-----	-----	-----	-----	------------	-----

from one administration to another.

PP/42 DEQ's job is to protect human health and the environment, not to protect property values. 0.3 1.8 0.4 1.8 1.4 1.1
(+1) (+6) (+1) (+6) (+5) (+4)

Realistic Reformers do not believe that cleanup standards at brownfield sites will cause a lessening in pollution prevention standards.

OO/41 If we now say that some degradation is acceptable for certain sites, the incentive to prevent pollution could be drastically undermined. -1.3 -0.3 0.0 -1.4 -2.2 1.6
(-4) (-1) (0) (-4) (-6) (+5)

They believe that too much money is spent on environmental cleanups.

N/14 We tend to overdo things in the environmental area. We might have a site that is presenting relatively minimal danger to people and the environment and yet spend millions of dollars cleaning it up. 0.7 -1.1 -0.7 0.9 1.5 -1.1
(+2) (-3) (-2) (+3) (+5) (-3)

I/9 I don't think you can go in and clean up a part of a site and use it--all the contamination problems at the site should be fixed. -1.9 0.0 0.1 0.9 -1.7 0.7
(-6) (0) (0) (+2) (-5) (+1)

The feel that a participant should be able to withdraw if he discover through the course of the investigation that his redevelopment plan is not feasible.

li/60 A participant ought to be able to change his mind because he may find that after investigation of the site that his redevelopment plan is unfeasible. 0.8 -0.2 0.1 1.0 1.4 0.2
(+2) (0) (0) (+3) (+5) (0)

They have confidence that sites can be sufficiently remediated to allow productive reuse of the property.

H/8 My gut instinct is that once a site has been contaminated, it will never be totally clean. -0.8 1.1 -0.7 -1.7 -1.6 0.7
(-2) (+3) (-2) (-6) (-5) (+2)

RR/44 I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability. -1.9 1.1 1.5 2.0 -0.9 0.9
(-6) (+3) (+4) (+6) (-3) (+2)

AA/27 I think it needs to be real clear to companies that the state regulatory agency has the ultimate authority to say what is going to happen at the site.

0.6	0.9	0.1	1.4	1.1	0.9
(+1)	(+2)	(0)	(+4)	(+4)	(+3)

They do not feel that additional legislation is needed to hold owners of contaminated property responsible for the cleanup, i.e., current laws are sufficient, if enforced.

Dd/56 There should be legislation where the State holds the adjacent property owners liable for any contamination on their property if they refuse access to a company that is trying to clean up a problem.

0.5	-0.8	1.0	1.6	-1.1	-0.2
(+1)	(-2)	(+3)	(+4)	(-3)	(0)

They feel that there are many issues involved in the cleanup and reuse of contaminated properties but do not feel that DEQ should be involved in the economic issues associated with the redevelopment of brownfields .

C/3 Offering incentives for cleaning up Brownfields isn't fair to companies who have already come forward and cleaned up their mess.

-0.9	-0.4	-1.3	-1.0	-1.4	-1.8
(-3)	(-1)	(-4)	(-3)	(-4)	(-5)

M/13 At some point in time, there may be a need to consider economic issues or redevelopment of these sites, but I don't think that is DEQ's function.

-1.4	-0.7	-0.8	0.0	1.1	-0.9
(-4)	(-2)	(-3)	(0)	(+3)	(-3)

O/15 Contamination is only a minor part of the problem--there are a whole host of reasons for the reluctance to invest in older urban areas.

1.9	-0.3	0.8	0.6	1.2	-0.2
(+6)	(0)	(+2)	(+2)	(+4)	(-1)

Q/17 Real estate transactions, irrespective of the Brownfield issues, must make sense from a business perspective. Developers won't participate just to be good citizens.

0.9	0.2	1.7	-0.1	1.0	-0.9
(+3)	(+1)	(+5)	(0)	(+3)	(-3)

The feel that some people supported brownfields because they thought it would allow them to circumvent current laws.

DD/30 I think some people see Brownfields as a way to skirt or get around some of the cleanup requirements that are currently in existence.

-0.5	0.4	-1.8	-0.7	1.2	0.9
(-1)	(+2)	(-5)	(-2)	(+4)	(+3)

Realistic Reformers believe that DEQ has an obligation to protect human health and the environment and that it often fails to fulfill this obligation. They believe that the legislative politics involved in keeping an agency afloat are behind many of DEQ's decisions and that the desire to keep that fact hidden is responsible for much of the public distrust. They have concerns about risk assessments and their ability to estimate actual risk and are concerned about the ignorance of many regulators to the inherent problems associated with risk assessments. They feel that too much faith is put into the results of risk assessments by industry and regulators; however, they do believe that risk assessments are a useful tool in decision making. They believe that often too much money is spent on environmental cleanups, i.e., that there are many unnecessary expenses charged to project due to the nature of "for profit" environmental consulting. They feel that sites can be reused without returning them to pristine condition and tend to believe that in many cases it is improbable that a site could be restored its natural condition. They do not believe that flexible cleanup standards at brownfield sites will have any effect on existing pollution prevention standards. They believe that communities should be involved in the decision making concerning brownfield cleanup and redevelopment since it is the community that will ultimately be affected by the success or failure of the redeveloped property. They feel that the community will have a day to day, personal interest in the cleanup and reuse of the site, which the state does not share, and therefore, the community should always be involved in site decisions. They feel that cleanups should be performed under a binding legal agreement where DEQ makes the final determination about environmental issues at the site but do not feel that DEQ should be concerned with the economic issues of redevelopment. Realistic Reformers can be characterized by their belief that there is a need for fundamental reform in DEQ's policies (both overt and covert policies), but they believe that there are limits the level

of reform due to the structure of government and bureaucratic agencies within the governmental system.

The areas of disagreement between the Technical Optimists and the Realistic Reformers revolve around the proper function of DEQ and the amount of trust that should be placed in that institution. Technical Optimists are secure in a belief that DEQ will always act in the public's interest whereas Realistic Reformers are concerned that politics always drives decision making, especially when an agency's budget is controlled by politicians. Realistic Reformers and Technical Optimists also disagree on the value of risk assessments; the Technical Optimists feel confident that risk assessments are efficient tools for modeling actual risk whereas the Realistic Reformers have doubts about the validity of the claims for risk assessment models. Technical Optimists and Realistic Reformers agree that communities should be heavily involved in the decision making process because they will be the most affected by the cleanup and redevelopment of a brownfield site. Both factors contain environmental regulators; therefore, this factor indicates divergent attitudes within this community.

Realistic Reformers and Wary Environmental Stewards differ in their views on partial cleanups and the risks that contaminated sites present to the public. Realistic Reformers tend to believe that former industrial properties do not present as great a threat to the health of the community as is justified by the amount of money being spent to clean them up. Wary Environmental Stewards believe that these sites present a great threat to the community and the cost of cleanup should not be a concern of DEQ. Although Wary Environmental Stewards distrust DEQ to some extent, Realistic Reformers appear to have no faith in DEQ's ability or willingness to protect the public interest. Realistic Reformers and Wary Environmental Stewards agree on their views that risk assessments have limitations and should only represent a portion of the decision process.

have limitations and should only represent a portion of the decision process.

Economic Realists differ from Realistic Reformers concerning the amount of trust that should be placed in DEQ. Realistic Reformers do not feel that DEQ should be trusted to always protect the interests of the community, while Economic Realists put some faith in DEQ to protect the citizens' interests. Realistic Reformers believe that partial cleanups are safe and should be considered as a viable option for Brownfields whereas Economic Realists, although they recognize the economic necessity, are more comfortable with a policy that addresses all the site contamination. Economic Realists believe that DEQ should be involved in the economic issues surrounding brownfields projects whereas Realistic Reformers do not believe that economics should be DEQ's concern because they feel that is outside the staff's scope of knowledge and therefore should be handled by those most affected, the communities.

Concerned Neighbors differ from Realistic Reformers in the areas of partial cleanups and trust issues. Concerned Neighbors are concerned that all contamination should be removed from these sites while Realistic Reformers do not feel that is necessary nor possible to remove all the contamination associated with brownfield sites. However, Realistic Reformers do not believe that property must be returned to pristine conditions to be productively reused. Concerned Neighbors feel that DEQ will protect the citizens interests from infringement by the federal and local governments. Realistic Reformers do not feel that DEQ is worthy of such trust.

Environmentally Concerned Citizens. Two participants loaded on this factor. Those who loaded on Factor F are an educator and a transportation planner. There were no confounded loaders on this factor. Environmentally Concerned Citizens tend to feel that all contamination at brownfield sites should be addressed during cleanup.

SS/45 My feeling is that if you clean up the surface and ignore the ground water, the public perception is that the site is clean, when in reality, there is still contamination.

0.5 1.5 1.0 1.0 -1.1 2.0
(+1) (+4) (+4) (+3) (-3) (+6)

V/22 These sites need to be handled with some degree of finality so that the next generation does not have to worry about them.

1.2 1.1 1.6 0.4 0.3 1.8
(+4) (+3) (+5) (+1) (+1) (+5)

RR/44 I don't like the idea of leaving on site wastes that still have the ability to contaminate. If a company is going to be allowed to leave something on site, then I think they should not be relieved of any liability.

-1.9 1.1 1.5 2.0 -0.9 0.9
(-6) (+3) (+4) (+6) (-3) (+2)

Gg/59 Always requiring closure to go back to a background level is unrealistic, and there simply is not enough money to do that. We need to start getting realistic about this.

1.4 -0.8 -0.7 -0.4 0.6 -0.9
(+5) (-3) (-2) (-1) (+1) (-2)

D/4 My fear is that the property will not be properly taken care of for the foreseeable future.

-1.3 0.3 0.4 -0.3 -0.5 1.1
(-4) (+1) (+1) (-1) (-2) (+4)

They think DEQ should establish standards for the usability of aquifers, thereby protecting the aquifers for the future.

EE/31 For the purpose of environmental cleanups, DEQ should establish criteria to define whether an aquifer is usable or not.

0.9 -0.4 1.1 -0.3 -0.3 1.3
(+3) (-2) (+4) (-1) (-1) (+5)

They tend to feel that DEQ should reserve the right to reexamine sites in the future to ensure that they continue to be safe for their use.

C/10 Certificates of Completion should be legally binding agreements. I would not enter into an agreement if the government reserves the right to "change" its mind and reopen the site.

-1.3 -1.2 2.3 -1.0 0.7 -0.9
(-4) (-4) (+6) (-3) (+2) (-3)

They have concerns about the scientific foundation of environmental decision making.

B/2 My concern is that many chemicals have not been fully tested for their effect on human health--so how can you set

-0.7 0.8 0.1 .6 1.2 0.9
(-2) (+2) (0) (+5) (+4) (+2)

standards that are protective of human health?

However, they believe that some risks are inevitable, and risk assessments are an effective tools for determining acceptable cleanup levels.

YY/51 The general public needs to start understanding that they are going to have to accept some risks if they want to live in a society that's the industrial level that we are at--people are going to have to start accepting risks.

1.3 -1.7 -0.5 0.2 0.8 0.9
(+4) (-5) (-2) (+1) (+2) (+2)

X/24 Most risk-based assessments are very conservative, and so if you get an answer that's safe, then it is probably safe.

1.2 -2.2 0.4 -0.4 -1.4 1.1
(+4) (-6) (+1) (-1) (-4) (+4)

They trust DEQ to protect the public interest and do not feel that state oversight will serve as a disincentive for the redevelopment of brownfields.

T/20 I feel that ODEQ will look out for the interests of the community and the people whose lives, on a daily basis, are affected by a site and its cleanup.

1.6 -0.7 0.5 1.7 -1.6 1.8
(+5) (-5) (+2) (+5) (-5) (+6)

K/11 If you start creating too much oversight of these cleanups, you are going to provide disincentives for redevelopment.

-0.3 -0.8 0.1 1.0 0.3 -1.8
(-1) (-3) (0) (+3) (+1) (-5)

Ff/58 The big pressure to continue through on a project will come from the lending institutions...you're going to find that they're the ones that have far more effect on the situation than the state agency does.

0.1 -0.7 0.5 -1.0 -1.5 -1.6
(0) (-2) (+1) (-3) (-4) (-5)

TT/46 DEQ has a problem with never seeming to be able to fine anybody or punish anybody. It makes me wonder, if a business violates its Certificate of Completion, is anything going to happen to them? Will DEQ enforce?

-0.9 0.8 -1.0 0.0 1.7 -1.3
(-2) (+2) (-3) (0) (+6) (-4)

AA/27 I think it needs to be real clear to companies that the state regulatory agency has the ultimate authority to say what is going to happen at the site.

0.6 0.9 0.1 1.4 1.1 0.9
(+1) (+2) (0) (+4) (+4) (+3)

They believe that DEQ respects public opinion.

R/18 I think that public comments are often just recorded and added to a document rather than evaluated and responded to.

-1.2 0.9 -0.7 -1.0 0.8 -1.1
(-3) (+3) (-3) (-3) (+2) (-4)

Environmentally Concerned Citizens are concerned about the environment and the potential for pollution standards to be undermined.

OO/41 If we now say that some degradation is acceptable for certain sites, the incentive to prevent pollution could be drastically undermined.

-1.3 -0.3 0.0 -1.4 -2.2 1.6
(-4) (-1) (0) (-4) (6) (+5)

They feel that the privilege of property ownership has social responsibilities.

ZZ/52 My view on property rights is that there is a social responsibility tied to it.

0.7 1.2 0.4 0.7 -0.7 1.1
(+2) (+3) (+1) (+2) (-2) (+4)

They do not feel that developers view pristine lands as "more land to use up" and believe that lands that are already developed have a high potential for reuse if they can be cleaned up and the environmental liability addressed.

L/12 In a state like Oklahoma where people think there is more land to use up, anytime you want to reclaim an area that has already been used, you are not on a level playing field.

0.3 0.1 -1.2 -0.4 0.6 -2.5
(0) (+1) (-4) (-1) (+1) (-6)

They do not agree that environmental groups are viewed as "watch-dogs" for the public interest, and they believe that the state can and does protect the public interest.

VV/48 There is a perception that environmental groups are supposed to watch out for the public interest--I thought that was the State's function.

-0.7 -0.4 0.5 -0.4 0.1 -2.0
(-2) (-1) (+2) (-1) (0) (-6)

They are not concerned with the economic costs involved in cleaning up a site for reuse and do not think that costs should be DEQ's concern either. They just want the contamination cleaned up.

C/3	Offering incentives for cleaning up Brownfields isn't fair to companies who have already come forward and cleaned up their mess.	-0.9	-0.4	-1.3	-1.0	-1.4	-1.8
		(-3)	(-1)	(-4)	(-3)	(-4)	(-5)

M/13 At some point in time, there may be a need to consider economic issues or redevelopment of these sites, but I don't think that is DEQ's function.

B/28 They (the government) are going to have to give a company some kind of incentive to come in and set up a business on contaminated land over non-contaminated land.

C/29	I'd say that the program doesn't work if you have to add financial incentives.	-1.4 (- 5)	0.0 (0)	-1.0 (- 3)	-0.7 (- 2)	-0.8 (- 3)	0.9 (+3)
-------------	--	---------------	------------	---------------	---------------	---------------	-------------

PP/42 DEQ's job is to protect human health and the environment, not to protect property values.	0.3 (+1)	1.8 (+6)	0.4 (+1)	1.8 (+6)	1.4 (+5)	1.1 (+4)
---	-------------	-------------	-------------	-------------	-------------	-------------

N/14 We tend to overdo things in the environmental area. We might have a site that is presenting relatively minimal danger to people and the environment and yet spend millions of dollars cleaning it up.	0.7 (+2)	-1.1 (-3)	-0.7 (-2)	0.9 (+3)	1.5 (+5)	-1.1 (-3)
---	-------------	--------------	--------------	-------------	-------------	--------------

Ee/57 Financial institutions have often been blamed for not providing capital for Brownfields transactions; however, people need to understand banks must adhere to the dictates of federal and state banking regulations regarding their lending practices and credit risk appetite.	1.1 (+3)	-0.3 (-1)	0.5 (+2)	0.0 (0)	0.9 (+2)	-1.1 (-4)
--	-------------	--------------	-------------	------------	-------------	--------------

JJ/36 Often, regulatory agencies are not sensitive to the various costs of their decisions.	1.1 (+3)	-1.3 (-4)	+0.9 (+3)	-1.6 (-5)	0.7 (+2)	-0.9 (-2)
--	-------------	--------------	--------------	--------------	-------------	--------------

Environmentally Concerned Citizens do not believe that Native American issues belong in a discussion of the state's brownfield program. They feel that Native Americans are sovereign and will handle their own brownfield issues.

WW/49 Native people cannot just sell out and move away from contamination. Their homeplace, their lands are not something you can give away, get rid of, or exchange. Ancestral lands are	0.0 (0)	1.3 (+4)	0.8 (+3)	0.3 (+1)	0.2 (+1)	-1.4 (-4)
--	------------	-------------	-------------	-------------	-------------	--------------

forever.

Environmentally Concerned Citizens are not concerned with the economic issues involved in cleaning up these sites, and they do not feel that DEQ should consider the costs of cleaning up brownfield sites; they believe that the sites should be cleaned up-- whatever it costs to accomplish that result. They are not in favor of partial cleanups and believe that all the environmental problems should be addressed during cleanup. They tend to believe that although "we can't help what our ancestors did--if it needs to be cleaned up, we should do it." They wish that there was more trust in the world and feel that organizations cannot be trusted, and at the same time, they trust DEQ to protect the public interest and tend to trust all levels of government. They are concerned about allowing levels of contamination (above background) to remain on site and feel that it might, in the future, affect pollution prevention standards. They feel that risk assessments are valuable tools and feel that unfortunately, in a modern world, the public has to accept some environmental risks. Environmentally Concerned Citizens can be characterized by their belief that the current residents of the planet should atone for the sins of past generations. They don't think there should be an argument about who is responsible and who should pay the bills. They just believe that since the technology is available to remediate most of the contaminated sites, it is the duty of the current residents to clean up the mess.

Technical Optimists and Environmentally Concerned Citizens differ in their opinions of partial cleanups. Environmentally Concerned Citizens want all the contamination issues at a site addressed prior to reuse; whereas, Technical Optimists are comfortable with the idea of cleaning up just the area that will be reused. They also have differing views on the desirability of offering tax incentives to companies that remediate brownfields. Environmentally Concerned Citizens do not think that it is an important

issue, with Technical Optimists feel that it is very relevant to the redevelopment of contaminated properties.

The Wary Environmental Stewards differ from the Environmentally Concerned Citizens on the issues of the trust they place in government and the effectiveness of risk based assessments. Environmentally Concerned Citizens believe that the DEQ will protect the interests of public and utilize risk assessments in a responsible manner. Wary Environmental Stewards distrust DEQ's motives in its decision making process and feel that DEQ is always driven by economic and political issues. Environmentally Concerned Citizens feel that risk assessments are valuable tools to be used during the cleanup of contaminated properties. Wary Environmental Stewards have no faith in environmental risk assessment models or the risk assessor.

Economic Realists and Environmentally Concerned Citizens disagree on economic issues. Economic Realists tend to rally behind the slogan, "It's the economy, stupid!" To them, every aspect of brownfield reuse is economic. The Environmentally Concerned Citizen feels that brownfields are an environmental problem, which should be cleaned up regardless of the economic costs.

Concerned Neighbors differ from Environmentally Concerned Citizens in their views of the effect brownfield issues will have on future pollution control standards. Environmentally Concerned Citizens believe that there is a potential for pollution prevention standards to be negatively affected in the future if standards for brownfield cleanups are allowed to be less stringent than standards already in place. Concerned Neighbors feel that there should not be different levels of contamination allowed at brownfield sites and therefore no potential for the degradation of current pollution standards.

Realistic Reformers differ from Environmentally Concerned Citizens in the amount of trust placed in governmental institutions. Realistic Reformers have no trust

that DEQ will act in the public interest. Environmentally Concerned Citizens believe that governmental institutions protect their interests. Realistic Reformers are surprised by the trust that the public places in DEQ and tend to believe that DEQ does not honor the trust. Environmentally Concerned Citizens view environmentally contaminated sites as a major risk to human health and the environment which should be completely cleaned up, regardless of cost and capacity for reuse. Realistic Reformers tend to view that the risk posed by most brownfield sites in Oklahoma is generally over-estimated. They also differ on the faith they place in risk assessments. Environmentally Concerned Citizens view risk assessments in a positive light. Realistic Reformers have no faith in environmental risk assessments as models of actual risk.

Consensus Items

All but three items had at least one factor group that felt strongly about the idea reflected in the statement (z-scores of at least +/- 1.0). Those statements are reflected in the above discussion. However, the factor analysis indicated two consensus items:

F/6 You can have a public meeting, but most people won't pay any attention until the dirt is being moved.	0.5 (+1)	0.2 (+1)	-0.2 (-1)	0.6 (+2)	0.2 (0)	0.7 (+2)
W/23 Providing economic incentives for the cleanup of these sites gets political--there's not enough money to do it for everybody, so then how do you justify doing it for some?	-0.5 (-1)	-0.4 (-2)	0.3 (0)	-0.1 (0)	-0.2 (-1)	-0.5 (-1)

and an item that almost qualifies as a consensus item:

NN/40 It's my feeling that we don't always do a good job protecting property rights in this country.	-0.8 (-2)	0.3 (+1)	-0.5 (-2)	-0.7 (-2)	-0.1 (0)	-0.2 (0)
---	--------------	-------------	--------------	--------------	-------------	-------------

None of these items proved to be particularly salient. Nevertheless, they provide useful information about the views of the stakeholders.

Implications for the Brownfield Program

The factor interpretations presented above indicate specific issues concerning the Brownfield Program that DEQ should address. Many of the aspects considered to be germane to the concept of brownfields redevelopment and required by the state legislation have been questioned by stakeholders. Therefore, these issues need to be examined during subsequent focus group sessions.

Environmental Risk

The Oklahoma Brownfields Voluntary Redevelopment Act requires a risk-based system for all brownfield cleanups, in which site specific cleanup levels are determined by risk assessment and are based on proposed future uses. However, there is great disparity shown in the opinions that stakeholders express concerning the value of risk assessments.

Risk assessments are controversial. Participants in the study who oppose the use of environmental risk assessments tend to feel that (1) there are too many unknowns relating to the interactions within the natural ecosystem and concerning the interaction of chemicals in the environment, and therefore, no adequate risk assessment model exists; (2) there are other relevant decision criteria that are not accounted for in current risk assessments; and (3) there is too much room for manipulation of the results by the risk assessor.

Participants favoring of the use of risk assessments believe that risk assessments provide a tool that adequately models risks associated with contaminated sites. Technical Optimists, many who perform or review risk assessments, feel that the risk models are designed so conservatively that it is unlikely that a site would present a risk that an assessment would overlook. The use and public acceptance of risk assessments in the cleanup and reuse of contaminated sites is an area that needs further

study by the DEQ. Options could include: education; the use of risk assessments as a tool not a rule; public participation in the risk assessments; changing the law that required brownfields to be cleaned up using risk based methodology.

Partial Cleanups

The concept of partial cleanups at brownfield sites cannot be completely separated from risk assessments. Economically, the reuse of brownfields depends on the economic viability of the project. If the cleanup costs exceed the value of the property, the site will continue to lie dormant. One way to prepare sites for reuse, is to remediate only the areas that pose an unacceptable risk to human health or the environment based on the proposed future use of the site. Another way to cut costs is to require on site disposal of wastes, as long as it does not present a risk to future use of the site. Partial cleanups rely on risk assessments and the concerns surface.

Some stakeholders believe that wastes should not be allowed to remain on site. Their fear is that wastes left on site poses an unacceptable liability to future generations. They believe that all environmental problems at these sites should be permanently mitigated so that future generations do not have to deal with them. Other stakeholders expressed the opinion that permanent solutions should be found but that wastes should remain on site. They believe that it is better to deal with hazardous wastes on a site which is already contaminated rather than taken to another site to contaminate it. Still others favor leaving wastes on site as long as they are properly contained because they believe that this is the only way to economically address the problems presented by these sites.

Trust

Another issue that should be addressed for the program to work as conceptualized concerns trust. There appears to be general distrust of the motives of various stakeholder groups.

As expected, much of the criticism was directed at the perceived "political agenda" surrounding the issue of brownfields; however, distrust was also expressed about the "hidden agenda" of different stakeholders. For the new program to function efficiently, DEQ must not only build trust for the agency, but it needs to work towards creating an atmosphere of trust among the stakeholders. Trust of the regulated community and the general public is important to bureaucracies that wish to function as the decision maker. If trust is eroded, "stakeholders will insist that they be empowered to represent their own interests in decision making" (Focht 1996a, p. 10).

Who Should Be Involved in the Decision Making Process?

An issue related to trust involves who should be involved in the cleanup and redevelopment of a site. Developers acknowledge that the time frames involved in the development of property can be very tight. This has become a major problem in the promotion of brownfield properties. Developers can "turn around" greenfield properties quickly, but the time involved in the cleanup of brownfield sites is often unpredictable. Business interests also tend to perceive that the existence of additional "players" and the time allowed for increased public participation as disincentives to investing in a brownfield project. However, local stakeholders (the community and the public) feel that they should be involved in the decision process at brownfield sites because they "have to live with it." This suggests that a dilemma exists for which there is no solution that will please both sides. Solutions to this type of dilemma have been proposed. This study proposes that Focht's Synoptic Normative Theoretic Framework for Legitimated Environmental Decision Making provides an appropriate solution context.

One of the major "institutional controls" for a brownfield sites will be the

success of the redevelopment. If a site is cleaned up to commercial/industrial standards under a brownfield program, it is imperative that the site remain commercial/industrial. The success of the redeveloped facility will help ensure that the remedy is maintained. The failure of a redeveloped facility could mean that the site once again becomes idle, falls into disrepair, threatens the environment, and contributes to urban blight. Communities are fully aware of their role in the future success of these facilities and are demanding a voice in the decision making process for sites within their jurisdiction. However, neither the state brownfield law nor the implementing rules require the city to be a partner in the decision making process. DEQ should investigate alternate methods of community and public participation to help ensure success of the program.

Prospects for Avoidance of Conflict and Maximization of Stakeholder Approval

The Q data presented above indicates the current legitimacy context for DEQ's decision making procedures. The study identified the stakeholder parties and their interests, delineated their views on macro-level issues and on the salient scientific facts and the values of the stakeholders, outlined the disagreements and agreements on potential policy options, and the established the level of stakeholder trust in DEQ (Focht 1996a). The disparate views identified by Q methodology may seem insurmountable; however, the Environmental Dispute Resolution can be utilized to manage the conflicts. It is recommended that policy dialogue be utilized in facilitated focus groups composed of representative stakeholders to find solutions through negotiation to the problems identified by Q methodology and build consensus for the resulting policy thereby building legitimacy into the brownfield program.

Summary

Q factor analysis produced six factors that explained 46 percent of the total

variance. It is believed that the low percentage is in part due to the limited P-sample-- it was not representative of all points of view in the state. It is believed that some views that were expressed during the initial interviews were not held by the stakeholders participating in the Q sorts. Additional factors may have emerged if all the initial interviewees could have performed a Q sort. It is recommended that the people who professed the more adamant pro-business views during the initial interviews be invited to participate in the focus groups.

Important data was developed from the interviews and Q sorts concerning the stakeholders views on the redevelopment of brownfields and the differing issues involved in creating a brownfields program for the State of Oklahoma. The insights provided by the participants can also be applied to the overall decision making processes of the DEQ. Chapter V elaborates on the use of this information to clarify the current legitimacy context of DEQ's decision making process.

NOTES

¹ Significant loading is the loading on a factor that cannot be explained by random assignment. To determine the critical value for a significant loading criteria of $\alpha=.001$, providing a confidence level of 99.9%, the following formula was utilized:

$$SE_r * Z_{\alpha/2}$$

where:

SE_r = the standard error of the zero order correlation coefficient matrix
(in this case) $1/\text{square root of } 62$ (# of statements in the Q Sample)

$Z_{\alpha/2}$ = z-score for the specified level of significance from standard statistical tables (in this case 3.09) (Focht 1995).

² Ibid.

³ Communality is the sum of the squared factor loadings of the rows and represents the "percentage of a person's Q sort response associated with the responses of the other subjects in the study" (Brown 1980, p. 211). Purity is a "measure of 'clean-ness' of a respondent's loading on a factor (varies from 0 to 1)...pure factor representatives are those who load significantly on one factor only (i.e., are not

⁴Factor A accounts for 13% of the total variance and 18% of the explained variance.

⁵ Factor B accounts for 12% of the total variance and 12% of the explained variance.

⁶Factor C accounts for 9% of the total variance and 6% of the explained variance.

⁷ Factor D accounts for 7% of the total variance and 5 % of the explained variance.

⁸Factor E accounted for 5% of the total variance and 5% of the explained variance; however, it was 48% negative, so the negative items were extracted to form Factor F.

CHAPTER V

APPLICATION OF THE SYNOPTIC NORMATIVE THEORETIC FRAMEWORK FOR LEGITIMATED ENVIRONMENTAL DECISION MAKING

The knowledge derived from the stakeholders during the initial interviews and Q sorts provides an assessment of the existing legitimacy context surrounding the brownfields issue and DEQ's current method of environmental decision making. The following discussion applies Focht's (1995, 1996a) Synoptic Normative Theoretic Framework for Legitimated Environmental Decision Making to the current legitimacy context of DEQ's development of a Brownfield Program for the State of Oklahoma.

Focht (1995) reviewed seventeen theoretical perspectives of risk and NIMBY conflict in his distillation of a process and framework to guide environmental decision making toward more legitimate outcomes. The following is a discussion of Focht's framework, which will then be applied to the current decision making dilemma facing the formulation of DEQ's brownfield program.

Focht (1996a) contends that there are three components of political legitimacy which are relevant to environmental decision making: "substantive legitimacy (what should be considered relevant in decision making), process legitimacy (how the decision should be made), and stakeholder legitimacy (who should participate in the decision)" (abstract, p. 1). Focht (1996a) defines these dimensions as follows: (1) Substantive legitimacy "involves a determination of the relative importance of facts and values to the

decision, which in turn is determined by the stakeholders' judgments of the magnitude and distribution of health, environmental, and welfare impacts posed by the technology - which of course can involve both facts and values"; (2) "(P)rocess legitimacy is determined by examining the level of social consensus on preferred decision outcomes"; and (3) Stakeholder legitimacy is "determined by assessing the level of systemic trust that stakeholders have in decision making institutions" (p. 4).

In Focht's model, these context components are represented in three dimensional space. Each spatial dimension corresponds to a legitimacy component. Orthogonal intersection of the substantive legitimacy (facts vs. values) and process legitimacy (social consensus) dimensions produces four regions that correspond to four ideal types of decision legitimacy contexts: (I) Reformative; (II) Informative; (III) Transformative; and (IV) Conformative. The Reformative context is "characterized by facts dominating values and high social consensus in which the realms of facts and coercion overlap. If the existing state of affairs is inconsistent with the consensually desired state, action designed to reform the status quo is appropriate" (Focht 1996a, p. 9). The Informative context is characterized by facts dominating values but there is social dissensus on the preferred outcome. "If the existing state of affairs is inconsistent with the consensus scientifically-defensible and justifiable criteria, action designed to inform society in an effort to induce a particular action is appropriate" (Focht 1996a, p. 9). The Transformative context is characterized by values dominating facts with low social consensus on the desired outcome. Focht recommends that decision making strategies in this quadrant be process-oriented, encourage dialogue, and be designed to transform disparate interests and preferences into more encompassing stakeholder interests compatible with all points of view. The Conformative context is characterized by values dominating facts and social concordance on the desired outcome. Decision making in this context should "maintain unity of purpose, political cohesion,

and social order...to ensure that behaviors and decisions conform to social norms and widely held preferences" (Focht 1996a, p. 9).

When the dimension of stakeholder legitimacy (trust) is added to the model, the resulting eight regions correspond to high and low trust versions each of the four ideal types of decision legitimacy contexts. The issue of trust in institutional decision making can also be separated into two dimensions. One represents public trust in the technical competence of an agency and the other represents trust of the agency's attitude to its fiduciary responsibility (referring to the motives of the decision makers). Technical trust is important in Quadrant I (Reformative) and Quadrant II (Informative) where facts dominate values. Fiduciary responsibility is most appropriate in Quadrant III (Transformative) and Quadrant IV (Conformative) where values dominate facts.

Each dimension is represented on a continuum reflecting a range from high to low. Focht adjusts the framework so that the origin corresponds to the intersection of "fact domination, high social consensus, and high technical competency" (Focht 1996a, p. 13). This adjustment "leaves a very large region as represented by Quadrant III: the transformative design of legitimated decision and communication strategies. This region is large because it is meant to include the intersection of moderate and low scientific certainty and moderate and low social concordance issues within its domain. It is asserted that most environmental decision making and communication involve issues have more than a little uncertainty and fail to gain substantial social consensus" (Focht 1996a, p. 14).

Focht's three dimensional model corresponds to his table of idealized legitimacy contexts. The model diagram and the idealized context table are presented in Chapter 2, Figure 2.1 and Table 2.1, respectively.

Focht (1996a) contends that "trust is most important in determining who should participate as the primary decision maker...(actor) and who should be granted standing

as stakeholders and thereby permitted to participate directly in the decision..."(p. 21). The primary decision maker (actor) is determined by "whether or not stakeholders are willing to defer to institutional expertise (in the case of the technical competence dimension of systemic trust) or to the institution's discretion (in the case of the fiduciary obligation dimension of systemic trust)" (Focht 1996a, p. 21). If trust is high, then the institution can claim political authority to make the decision on behalf of the stakeholders. However, if trust is low, the decision making process must be opened to independent experts and/or all stakeholder parties -- power sharing is required.

Table 5.1 presents Focht's (1996a) table of stakeholder legitimacy claims and legitimated decision making and communication strategies. The last three columns of the table reflect Focht's recommendations for decision making and communication strategies that are considered legitimate under the synoptic framework he has outlined. Decision making scenarios that fall into the reformative regions of the model may use an instrumental (outcome based, substantive legitimacy) decision making strategy. This implies that traditional technocratic methods of decision making are acceptable, although validation may be needed if technical competence of the institution is questioned. For decisions falling in the informative region of the model, Focht recommends systematic instruction and other didactic strategies designed to transmit information to inform stakeholders concerning factual information concerning the decision. The transformative region of the model require discursive decision making strategies designed to build consensus among the stakeholders and to reduce factual uncertainties. If trust is high, the institution may act as facilitator for discussions in stakeholder advisory groups. However, if trust (as fiduciary obligation) is low, the institution is perceived as a stakeholder and cannot effectively mediate discussions. The conformative region is ideology-driven; therefore, "appeals to ideology (and rationality) are appropriate as legitimate justifications for decisions" (Focht 1996a, p. 22).

Table 5.1: Focht's Stakeholder Legitimacy Claims and Legitimated Decision Making and Communication Strategies.

Octant No.	Context Name	Primary Actor	Stakeholder Participation	Legitimate Decision Making Strategy	Legitimate Communication Strategy	Legitimate Tactics (examples)
I-A	reformative	decision making institution	institutional experts only	instrumental	one-way (to notify)	technocratic; gov't notices to public
I-B	reformative	independent technical organization	independent and institution experts	instrumental	one-way (to explain)	technocratic; private notices to public
II-A	informative	decision making institution	experts; (others passively)	didactic; educational	two-way (to inform, feedback)	communications media, schools
II-B	informative	independent educational organization	independent experts; (others passively)	didactic; educational	two-way (to inform, feedback)	communications media, symposia
III-A	transformative	decision making institution as mediator/facilitator	all	discursive	multi-way (to build consensus)	SH advisory groups; with alternative conflict mgt. techniques & gov't support
III-B	transformative	neutral fourth party mediator/facilitator	all, including decision making institution as a stakeholder party	discursive	multi-way (to build consensus)	SH d-m; with argumentation techniques & ideal speech; perhaps with independent tech. support
IV-A	conformative	government agency, as a trustee	government policy leaders and decision makers	ideologic	one way (to explain ideology; propaganda)	public announcements, rationale documents
IV-B	conformative	government agency, as a delegate	gov't decision elites; others involved as consultants & in oversight	ideologic	two-way (to explain process and seek feedback)	formal d-m processes; public hearing & community relations

In order to apply Focht's framework to the current decision making process, existing legitimacy dimensions must be reviewed. Information gained from the stakeholders will be examined to help determine the proper decision making context for the future development of Oklahoma's Brownfields Program.

Substantive Legitimacy

Evidenced by the information presented in Chapter IV, there is disagreement among the stakeholders as to the strength of the science supporting the use of risk assessments. This is especially true in the use of risk assessments to justify leaving wastes on site or conducting partial cleanups. Focht (1996a) contends that,

the degree of scientific certainty, ignorance and indeterminacy associated with the 'facts' relevant to a decision or communication context is assessed by the level of scientific consensus. Scientific consensus requires that factual statements be empirically verifiable (be determinate), be empirically verified (be convincingly supported by scientific observation and previously verified statements using scientific procedures), and be continuously accepted by peers (be scientifically legitimated). Therefore, what constitutes a scientific fact is what most, if not all, qualified scientists currently say is a fact. Facts are those statements that have achieved a status that demands that it be accorded a certain respect, confidence and faith. Scientific consensus, then, is the scientist's measure of the 'truth' of facts and, in the author's opinion, is partially determinative of the relative importance of facts in technological and environmental decision making. (p. 5)

Although Technical Optimists have a strong belief that risk assessments are useful tools with impressive scientific credentials, this view is not shared by other stakeholder groups. Since there is disagreement on the value of environmental risk assessments, it is necessary to investigate the issue further.

Risk assessments tend to convolute the distinction between what portion represents scientific facts and what portion represents the assessor's judgment. Risk

assessments attempt to model complex environmental systems. Many charge that EPA's, and therefore DEQ's, approach "involves an unwarranted simplification, of normative judgement (Dryzek 1990, p. 65). Dryzek continues, "The system modeler is inevitably caught between the Scylla of attempting to capture all elements and interactions and the Charybdis¹ of excessive simplification....(t)he risk of model simplification under complex conditions is simplemindedness" (p. 65). Risk assessments incorporate scientific facts and professional judgement in an attempt to model reality. However, "even under the best of circumstances it is difficult to evaluate quantitatively the risks associated with toxic chemicals" (Shapiro 1990, p. 216)." Rosenthal, Gray, and Graham, in their review of risk assessment applied to carcinogenic chemicals, state, "in spite of its appearance of precision, QRA (quantitative risk assessment) is fraught with gaps in knowledge that are filled with guesses and assumptions. Risk assessors have a great deal of analytical discretion in the conduct of cancer risk assessments....If agency officials believe that a statutory bright line is too stringent in a particular case, they can manipulate the risk calculation to produce a numerical estimate of risk that will allow them to justify their desired level of stringency" (as reported in Bates 1994, p. 70-71). Risk assessment is not viewed as an exact science, and therefore, many citizens object to its use for modeling risks to which they are involuntarily exposed.²

There appears to be a gulf in both the scientific and the stakeholders' view of the scientific validity of the use of risk assessments to model actual risk. This is evidenced in transcripts of the original interviews. Stakeholders in Oklahoma have disparate views of the value of risk assessment. For example, one stakeholder expressed the view that "I think risk based closures provide an excellent opportunity for facilities and properties that have historically been in industrial use and will continue to remain primarily in industrial use because it provides a cost effective option rather than trying to take them back to the pristine conditions of background or residential exposure

situations. In terms of risk assessment use, I think risk assessment is certainly a tool that should be utilized in making decisions for brownfields." Another perspective is "Risk assessment is nothing more than a numbers game. Risk assessment does not take into consideration the synergistic effects; it doesn't take into account different chemicals. It's just a numbers game--a way to rationalize things on paper." And yet another perspective is "Risk assessments do not take into consideration the native cultural uses of land. In many cases, cultural and spiritual uses of the land may put native cultures at risk from contamination on the land." In cases such as this, Focht (1996a) insists that "(i)f there is little scientific consensus on relevant facts, then they cannot properly play a major role in decision making and communication since there is little agreement on just what the facts are" (p. 7) Focht insists that if the facts cannot be agreed upon, values must dominate the decision criteria. Focht believes that the political system fails to consider community values in the decision making process and this often creates controversy (Focht 1996a).

Process Legitimacy

Focht (1996a) states that process legitimacy indicates the "degree of 'social consensus' on a preferred course of action....Consensus of course depends on widespread agreement on what is important" (p. 7). During the research project, no one voiced an opinion that would indicate an aversion to the concept of brownfields. There appeared to be an overall agreement that there should be a brownfield program in the state. One stakeholder voiced the opinion that the push to secure a brownfield program should not overshadow the "real problem," which he identified as the Superfund legislation and program. Indications are that there is wide support for developing a brownfield program for the State of Oklahoma.

There is much disagreement, however, among stakeholders as to what limits should be placed on the reuse of brownfield sites. Wary Environmental Stewards believe

that brownfield sites should only be reused for industrial purposes. Some individuals who loaded on this factor had supported the brownfield legislation with the understanding that the concept of brownfields hinged on the reuse being limited to industrial/commercial facilities. They were shocked and displeased to learn that the DEQ considers all types of future uses (residential, parks, schools, agricultural, as well as commercial and industrial) for brownfield sites as long as the proper cleanup standards are used to guide the cleanup. These stakeholders were also surprised that the legislation did not prevent such reuse of brownfields. Concerned Neighbors and Environmentally Concerned Citizens both would prefer that brownfields be cleaned to a point that would allow unlimited access--property with no restrictions concerning future use. In general, Technical Optimists and Realistic Reformers tend to believe that brownfields can be cleaned sufficiently to support whatever reuse is planned.

Although there is general consensus that creation of a brownfield program for Oklahoma is a proper course of action, there is dissensus on what is a proper future use for a brownfield site. Therefore, according to Focht (1996a) persuasion may be used to reach agreement on what type of policy should be implemented to address the brownfield issue.

Stakeholder Legitimacy

There is one safeguard known generally to the wise, which is an advantage and security to all, but especially to democracies against despots. What is it? Distrust.

--Demosthenes, Philippic 2, sec. 24--
(taken from Hart 1978, p. xi)

"Stakeholder legitimacy...is determined by assessing the level of systemic trust that stakeholders have in government decision making institutions" (Focht 1995, p. 296). If citizens do not trust the decision making institution, they will not defer to its

authority and will, instead, insist on representing their views directly in the process. If the "government insists on the unrestrained exercise of its discretion in the face of public distrust, then stakeholders may elect to defy the government's actions on the grounds that they are illegitimate" (Focht 1995, p. 305). Hart (1978) expands on the the issue of trust, "...the legitimacy of the polity depends on a more permanent assent to the forms of institutions and the principles which guide them; people will accept policies with which they disagree and the neglect of their own priorities, provided that they believe decisions have been reached by democratic processes" (p. 1).

Focht (1995) argues that it is important to understand whether it is the institution's abilities or motives, or both, are distrusted. Focht relies on Benjamin Barber's (1983) two dimensions of trust: technical competence and fiduciary obligation. Technical competency reflects the public's view of whether an institution can conduct its business in a technically effective and efficient manner. The initial interviews and the Q sorts did not reflect a general distrust of the technical competency of the DEQ; however, one stakeholder voiced the opinion that DEQ technical staff are often inexperienced due to the high turn-over in personnel and low pay scale. There are additional questions about the ability or willingness of DEQ to enforce its decisions through fines or other methods; therefore, DEQ's procedural competency, or efficiency, is somewhat distrusted.

Fiduciary obligation reflects "duty of the decision making institution to act in society's common interest" (Focht 1996a, p. 12). There appears to be distrust of the motives underlying DEQ's decision making processes, both at the institutional level and at the individual staff member level. This was especially evident during the initial interview phase of the project. Some stakeholders expressed concern over calling DEQ for advice on what to do at a site for fear of "opening a can of worms." One stakeholder expressed the following sentiment, "(e)arly on in the risk assessment battle, the

personality (of the DEQ project manager). I think that would also give people more confidence." Another stakeholder voiced this view, "We feel like we can't get the truth in situations because the DEQ is 'paid off,' you know, in permits and so forth. The truth is hidden, that is where the problem is and that's where the mistrust is. DEQ and EPA do not come to the citizens--they always go to the industry first." And finally, "You have individuals on the staff of a regulating agency that are probably not experienced, may have an ax to grind of their own, some other agenda that they are trying to carry out, their own view of the world, or they just do like a lot of bureaucrats do--they want to follow their rule, their way, and there is no flexibility."

The research indicates that brownfield stakeholders generally trust the technical competence of the DEQ, but there is eroded confidence in DEQ's commitment to its duty to protect human health and the environment. This is especially apparent in Q items number 1, 18, 19, 37, 42, 46, and 48 (Table 4.2). Therefore, stakeholders tend to feel that DEQ has a parochial interest in the policy and would not accept DEQ as a mediator in policy dialogues.

Selecting a Decision Rule

In order to select decision making process for future policy decisions concerning brownfields, a summary of the existing legitimacy context applicable to Focht's model is needed.

Technical Optimists tend to have confidence in risk assessments' ability to model actual risk, and they are confident that brownfield sites can be cleaned up to a level safe for their intended use; therefore, Technical Optimists believe that facts should dominate values in environmental decision making and Substantive Legitimacy is high. Technical Optimists tend to agree that there should be a state program to address the brownfield

issue, and they tend to feel that the future use of the site should only be considered when determining specific site cleanup levels (i.e., there should not be a legislated, prescribed future use for brownfield sites). Therefore, there is social consensus among Technical Optimists, and Process Legitimacy is high. Technical Optimists trust both DEQ's technical ability and the motives behind its decisions; therefore, systemic trust is high and Stakeholder Legitimacy is high. According to Focht's model, Technical Optimists occupy Octant IA, the Reformatory context--where facts dominate values, there is high social consensus and the realms of facts, coercion, and deference overlap. In this legitimacy context, legitimate decision making is instrumental and can be conducted in a technocratic manner without fear of stakeholder objection.

Wary Environmental Stewards question the scientific facts behind risk assessments. Their concerns about the redevelopment of brownfields reflect their concern about what is important. The express concerns about health, the quality of life, future generations, and protecting ecosystems. Therefore, Wary Environmental Stewards see values dominating the facts in brownfield decision making and Substantive Legitimacy is low. Wary Environmental Stewards, although they agree that there should be a state brownfield program, they are very concerned about the allowable future uses for brownfield property; therefore, there is no social consensus and Process Legitimacy is low. Although Wary Environmental Stewards seem to trust DEQ's technical competence, they distrust DEQ's motives and systemic trust (fiduciary obligation) and Stakeholder Legitimacy is low. With low Substantive Legitimacy, low Process Legitimacy, and low Stakeholder Legitimacy, Wary Environmental Stewards are in Octant IIIB of Focht's model where the realms of values, persuasion, and defiance overlap. This is a transformative decision context that requires discursive decision techniques where independently facilitated stakeholder groups use negotiation techniques to formulate policy. DEQ would be considered just another stakeholder group due to the distrust of its

motives.

Economic Realists do not have strong views on the science of redeveloping brownfield sites. They accept risk assessments and partial cleanups as necessary to the process. Therefore, Substantive Legitimacy is considered to be moderate. Economic Realists are major supporters of the need to develop a brownfield program in Oklahoma and therefore social consensus (Process Legitimacy) is high. Economic Realists tend to trust both DEQ's technical competence and motives; therefore systemic trust (Stakeholder Legitimacy) is high. Economic Realists fall into Octant IVA, in the conformative context where the realms of values, coercion, and deference overlap. Appropriate decision making strategies are ideologic and can be instituted through public announcements of decisions made within the agency.

Concerned Neighbors are concerned that the scientific facts do not support environmental decisions; therefore, Substantive Legitimacy is low and values should dominate the decision making process. There is social consensus among Concerned Neighbors that there should be a program to address brownfields and they believe that these sites should be cleaned up to allow unrestricted use of the property in the future. Therefore, Process Legitimacy is high. Although Concerned Neighbors expressed a concern about governmental policy, they indicated high trust (fiduciary obligation) in DEQ. Concerned citizens fall into Octant IVA and ideologic decision making strategies are appropriate.

Realistic Reformers are not convinced that the science backs up the claims of risk assessment. Therefore, values should dominate facts in the decision making process. Social consensus among Realistic Reformer is high for the development of a brownfield program in the State of Oklahoma; therefore, Process Legitimacy is high. Realistic Reformers distrust the motives behind DEQ decision making and therefore

exhibit low systemic trust (fiduciary obligation) for the agency. Realistic Reformers fall within Octant IVB in a conformative context where the realms of values, coercion, and defiance overlap. Legitimate Decision Making Strategies in this context are ideologic and legitimate tactics include public hearings and community relations.

Environmentally Concerned Citizens accept the value of risk assessments, but it is not a major issue for them. Therefore, Substantive Legitimacy is considered to be moderate, with both facts and values important to the decision making process. There is strong social consensus among Environmentally Concerned Citizens that Oklahoma should develop a program for the cleanup and reuse of brownfield sites; therefore, Process Legitimacy is high. Environmentally Concerned Citizens trust DEQ to make proper environmental decisions, therefore, systemic trust is high. Environmentally Concerned Citizens fall into Octant VIA in a conformative context where the realms of values, coercion, and deference overlap. Appropriate decision making strategies are ideologic where public announcements of decisions would be acceptable.

The research indicates that there is disagreement among the various stakeholder groups concerning the value of the science of risk assessments and their use in environmental cleanups. There is also disagreement among experts as to accuracy of the estimated risks representation of actual risks. Therefore, according to Focht (1996a), since there is disagreement on what the facts (the use of risk assessments to determine cleanup levels) are, values must dominate facts for the substantive legitimacy dimension.

There appears to be widespread support for the continued development of a brownfields program for the state of Oklahoma; however, there is disagreement on what reuses of brownfield sites should be allowed. Therefore, persuasion should be used to build consensus on residual risk levels and land use restrictions.

The area of stakeholder legitimacy represents the systemic trust the stakeholders

have in the decision making institutions and reflects two realms of trust. Trust in the technical competency of the institution and trust in the motivations of the decision makers of the institution. As reflected by the research, stakeholders appear to trust the technical competence of DEQ; some do not trust the institution's motives and some do not trust the motives of the individual staff members. It is interesting to note that the stakeholder group (identified by factor analysis) that distrust DEQ's motives the most are composed of DEQ regulators. Therefore, there is erosion of confidence that DEQ will act in society's common interest.

To recap, scientific consensus is low, social consensus is moderate, and systemic trust, represented by fiduciary obligation, is eroded, while technical trust is high. Referring to Table 2.1 (Focht's Characteristics of Ideal Legitimacy Contexts) and Figure 2.1 (Focht's Proportionally Adjusted Diagram of Idealized Legitimacy Contexts), the issues relating to the cleanup and reuse of brownfields fall within Quadrant III, as predicted by Focht (1996a), specifically it falls with Octant IIIB. Table 5.1, outlines Focht's conceptualization of the the proper decision making strategies for Octants IIIB.

Quadrant III represents the transformative context and legitimated decision making requires process-oriented actions that encourage discourse among the stakeholders (Focht 1996a).

From the information provided by the factor analysis, it appears that there is no systemic trust placed in DEQ by the stakeholders. Realistic Reformists, especially, distrust DEQ's commitment to its fiduciary responsibility. Therefore, the decision making context belongs in the realm of Octant IIIB. For decisions falling within this octant, Focht (1996a) recommends a discursive decision making strategy where the decision making institution is just another stakeholder. In this context, stakeholder groups are formed to discuss the pertinent issues, reduce uncertainties, and build consensus. Independent parties act a facilitator/mediator during the group discourses;

however, DEQ can properly provide technical assistance and resources. DEQ is considered a stakeholder (and not a primary decision maker) in this contexts because its motives are in question. According to Focht (1996a), "If it is perceived to be biased against or toward any particular stakeholder class, or appears to be pursuing its own interests, then it will necessarily be perceived as a party-at-interest and a stakeholder itself" (p. 21). If this is the case, the decision context falls into Octant IIIB, where a neutral fourth party mediator/facilitator must become the Primary Actor and the agency is considered a stakeholder with a parochial interest in the outcome.

Decision contexts are dynamic and techniques used to build trust and increase social consensus can move the decision context. It is recommended that the initial goal of DEQ should be to build trust in the motives behind DEQ decision making. Once this is achieved, the decision context will shift to Octant IIIA where DEQ is accepted as the facilitator of stakeholder advisory boards and the primary decision maker. Two goals would then become important (1) reduce scientific uncertainty and (2) build consensus as to the proper future uses and acceptable residual risk associated with brownfield sites. Each time a goal is reached the decision context should shift until it reaches IA where there is high scientific consensus, high social consensus, and high systemic trust where the legitimate decision making strategy is instrumental and technocratic tactics are acceptable to the stakeholders. Decision making strategies should not be changed without sufficient evidence to support the change. To determine if there is evidence to support the change, Q technique should be implemented followed by an R methodology survey to quantitate the findings.

NOTES

¹ "Between Scylla and Charybdis", is a phrase used to indicate a choice between two equally hazardous alternatives. Taken from Homer, Scylla was a nymph who was changed into a monster that terrorized Odysseus and other mariners in the Straits of Messina, and Charybdis was the daughter of Poseidon and Gaea who was thrown into the sea of Sicily by Zeus where she swallowed and spewed water creating a whirlpool.

² In the author's opinion, a major problem with the use of risk assessments by regulators is the way in which they are presented. Risk assessment models are provided for regulators to help in decision making, and often, the problems inherent in risk assessments are not discussed during training. This leads to regulators to placing too much faith in the tool and to their inability to discuss the public's fear of the modeled risks.

³ The methodology used by DEQ has since been published and is available on the DEQ home page: www.deq.state.ok.us/brownfields.

CHAPTER VI

SUMMARY AND RECOMMENDATIONS

There were many delays and difficulties associated with implementing this research study from within a state bureaucratic institution. However, the information gained during the process has informed many aspects of the evolving program. Through the process, contacts have been made and rapport has been established with stakeholders unknown to DEQ prior to the implementation of the study. Information gained during the study has aided DEQ in the production of several documents related to the evolving program. Most importantly, the process educated the researcher (and state Brownfield Coordinator) on the myriad interests of the stakeholder groups. This alone has been worth the struggles to complete the project.

The results of the Q research will be used to guide focus groups discussions, each group including representatives of the various stakeholder groups. In independently facilitated sessions, various stakeholders will articulate their interests and concerns and work to achieve mutual understanding. The focus groups will rely on a form of Environmental Dispute Resolution (EDR) known as policy dialogue, which utilizes negotiation techniques to solve environmental disputes (Lawler 1996). These focus groups are planned for the summer of 1998.

Information gained from the focus groups will be used to validate the definition of the brownfield decision context as Octant IIIB of Focht's model. It will also provide guidance on the proper participants and meeting schedules for future stakeholder decision negotiation meetings. The focus groups and the future stakeholder meetings will

be responsible for providing policy recommendations both to DEQ and the state legislature to help ensure the Oklahoma's brownfield program operates effectively and efficiently. An R methodology survey should be conducted to quantitate the support of the various recommendations.

REFERENCES

- American Society for Testing and Materials (ASTM). (1996). Annual Book of ASTM Standards: Water and Environmental Technology. Section 11, Volume 11.04. West Conshohocken, PA; author.
- Aristotle. (1966). Metaphysics. (H. G. Apostle, Trans.). Bloomington, IN: Indiana University Press.
- Association of State and Territorial Solid Waste Management Officials. (1995, August). 1995 ASTSWMO Brownfields Workshop (summary). Washington, DC: Author.
- Barber, M. R. (1977). Political participation and the creation of *res publica*. Bloomington, IN: The Poynter Center.
- Bates, D. V. (1994). Environmental Health Risks and Public Policy: Decision Making in Free Societies. Seattle, WA: University of Washington Press.
- Brown, S. R. (1993). A primer on Q methodology. Operant Subjectivity, 16(3/4), 91-138.
- Brown, S. R. (1980). Political subjectivity: Applications of Q methodology in political science. New Haven, CT: Yale University Press.
- Dahl, R. A. (1963). Modern political analysis. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- During, D. (1993). Participatory policy analysis in a social service agency: A case study. Journal of Policy Analysis and Management, 12(2), 297-322.
- Durning, D. & Osuna, W. (1994). Policy analysts' roles and value orientations: An empirical investigation using Q methodology. Journal of Policy Analysis and Management, 12(4), 629-657.
- Edsall, T. B. (1996). The era of bad feelings. Civilization, 3(2), 37-39.
- Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). Doing naturalistic inquiry: A guide to methods. Newbury Park, CA: Sage Publications, Inc.
- Focht, W. J. (1996a). Gaining stakeholder acceptance of technological and environmental decision making. Unpublished manuscript. Oklahoma State University, Stillwater, Oklahoma.
- Focht, W. J. (1996b). Identifying stakeholder preferences for legitimated siting decision criteria and processes. Presented at the Annual Meeting of the National

- Association of Environmental Professionals. Houston, Texas. June 4, 1996.
- Focht, W. J. (1995). A heuristic political inquiry into NIMBY conflict: Exploring solution to gridlock. Unpublished Ph.D. dissertation. Oklahoma State University, Stillwater, Oklahoma.
- Fox, W. M. (1990). Effective group problem solving: How to broaden participation, improve decision making, and increase commitment to action. San Francisco, CA: Jossey-Bass Publishers.
- Gargan, J. J. & Brown, S. R. (1993). 'What is to be done?' Anticipating the future and mobilizing prudence. Policy Sciences, 26(4), 347-359.
- Gormley, W. T., Jr. (1989). Taming the bureaucracy: Muscles, prayers, and other strategies. Princeton, NJ: Princeton University Press.
- Hart, V. (1978). Distrust and democracy: Political distrust in Britain and America. Cambridge: Cambridge University Press.
- The Harwood Group. (1991). Citizens and politics: A view from Main Street America. New York: The Kettering Foundation.
- Lawler, J. J. (1996). What is Policy Dialogue? Policy Dialogue and Other Cooperative Conflict Management Processes. (Unpublished Paper). Oklahoma State University, Stillwater, Oklahoma
- Lincoln, Y. S. & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage Publications, Inc.
- MacLean, D. (Ed.). (1986). Values at risk. Savage, MD: Rowman & Littlefield Publishers.
- Morganthau, T., Hosenball, M., Isikoff, M., Liu, M., Smith, V. E., Keene-Osborn, S., & Jorgensen, L. (1995). The view from the far right. Newsweek, May 1, 1995.
- Morone, J. A. (1990). The democratic wish: Popular participation and the limits of American government. USA: Basic Books, Inc.
- Nachmias, D. & Rosenbloom, D. H. (1980). Bureaucratic government USA. New York: St. Martin's Press.
- Oklahoma Department of Environmental Quality. (1995). Annual Report. Oklahoma City, OK: Oklahoma University Printing Services.
- Rice, A. (1985). The vampire Lestat. New York: Ballantine.
- Ruckelshaus, W. D. (Speaker). (1995). Stopping the pendulum (transcript). Washington, DC: Environmental Law Institute.
- Shapiro, M. (1990). Toxic Substances Policy. In P. R. Portney (Ed.), Public Policies for Environmental Protection (pp.195-241), Washington, DC: Resources for the Future.

- Stephenson, W. (1953). The study of behavior: Q-technique and its methodology. Chicago: The University of Chicago Press.
- Thucydides. (1986). History of the Peloponnesian War. (Rex Warner, trans.). Harmondsworth: Penguin.
- U. S. Congress (1980). Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). (Public Law 96-510). Washington, DC: U.S. Government Printing Office.
- U. S. Environmental Protection Agency. (1995b). The brownfields action agenda (directive). Washington, DC: Author.
- U. S. Environmental Protection Agency. (1996). Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), (computer database). Version 4.02. List 8, Site/Event Listing.
- van Tubergen, N. (1980). QUANAL (computer software). University of Kentucky.

BIBLIOGRAPHY

- Ahearne, John F. (1988). Addressing public concerns in science. Physics Today, 41, (9) 36-42.
- Altman, J. A., & Petkus, E., Jr. (1994). Toward a stakeholder based policy process: An application of the social marketing perspective to environmental policy development. Policy Sciences, 27 (1), 37-51.
- American Bar Association. (1996, March). Brownfields redevelopment: Cleaning up the urban environment. ABA satellite seminar (published proceedings).
- The American heritage dictionary, (2nd coll. ed.). (1991). Boston:Houghton Mifflin Company.
- American Psychological Association. (1991). Publication manual of the American Psychological Association (3rd ed.). Washington, DC: Author.
- American Society for Testing and Materials (ASTM). (1996). Annual Book of ASTM Standards: Water and Environmental Technology. Section 11, Volume 11.04. West Conshohocken, PA; author.
- Amos, B. (1996). The Role of insurance in brownfield site redevelopment. The Choice, 1st/2nd Quarter, 1996. Reliance National Insurance Company. <http://www.reliancenational.com/c029612a.html>.
- Aristotle. (1966). Metaphysics. (H. G. Apostle, Trans.). Bloomington, IN: Indiana University Press.
- Association of State and Territorial Solid Waste Management Officials. (1995, August). 1995 ASTSWMO brownfields workshop (summary). Washington, DC: Author.
- Bachrach, P. & Botwinick, A. (1992). Power and empowerment: A radical theory of participatory democracy. Philadelphia,PA: Temple University Press.
- Bank of America. (1995). Press Release: Bank of America applauds EPA Brownfields Initiative. Bank of America National Trust and Savings Association. Washington, D.C.
- Barber, M. R. (1977). Political participation and the creation of res publica. Bloomington, IN: The Poynter Center.
- Barlowe, R. (1990). Who owns your land? Mississippi State, MS:Southern Rural Development Center. SRDC No. 126.
- Bartsch, C. (1996). Financing brownfield cleanup and redevelopment. Northeast-Midwest Institute. <http://www.nemw.org/brownfin.htm>.

- Bartsch, C. & Collaton, E. (1997). Federal legislative proposals to promote brownfield cleanup and redevelopment in the 105th Congress. Northeast-Midwest Institute. <http://www.nemw.org/brownleg.htm>.
- Bartsch, C. & Munson, R. (1994). Restoring contaminated industrial sites. Issues in Science and Technology. Spring 1994. Washington, DC: Notheast-Midwest Institute.
- Bates, D. V. (1994). Environmental health risks and public policy: Decision making in free societies. Seattle, WA: University of Washington Press.
- Brown, S. R. (1974). The composition of microcosms. Policy Sciences, 5, 15-27.
- Brown, S. R. (1993). A primer on Q methodology. Operant Subjectivity, 16(3/4), 91-138.
- Brown, S. R. (1980). Political subjectivity: Applications of Q methodology in political science. New Haven, CT: Yale University Press.
- Byrd, J. (1997). Letter from Joe Byrd, Principal Chief, Cherokee Nation, Concerning Tribal Input into Oklahoma's Brownfields Program. Tahlequah, Oklahoma.
- Christian Social Action. (1996). Platform 1996. Christion Social Action Magazine. <http://www.igc.apc.org/umoun/csacurar.htm>.
- Conner, D. M. (1992). Constructive citizen participation. Victoria,BC:Development Press.
- Dahl, R. A. (1963). Modern political analysis. Englewood Cliffs, NJ:Prentice-Hall, Inc.
- Dryzek, J. S. (1990). Discursive democracy: Politics, policy, and political science. New York: Cambridge University Press.
- During, D. (1993). Participatory policy analysis in a social service agency: A case study. Journal of Policy Analysis and Management 12(2), 297-322.
- Durning, D. & Osuna, W. (1994). Policy analysts' roles and value orientations: An empirical investigation using Q methodology. Journal of Policy Analysis and Management, 12(4), 629-657.
- Edsall, T. B. (1996). The era of bad feelings. Civilization: The Magazine of the Library of Congress, 3(2), 37-39.
- Elliot-Jones, M. & Wade, W. W. (1996). Asset-enhancing effects of environmental remediation. (unpublished position paper) San Francisco, CA: Foster & Associates.
- Environmental Bankers Association. (1996). Brownfields background and summary. July 31, 1996. http://www.bankamerica.com/community/env_brown3.html.
- Environmental Defense Fund. (1995). Press release: EDF applauds EPA's Brownfields Initiative. Washington, D.C.

- Erlandson, D. A., Harris, E. L., Skipper, B. L., & Allen, S. D. (1993). Doing naturalistic inquiry: A guide to methods. Newbury Park, CA: Sage Publications, Inc.
- Focht, W. J. (1995). A heuristic political inquiry into NIMBY conflict: Exploring solution to gridlock. Unpublished Ph.D. dissertation. Oklahoma State University, Stillwater, Oklahoma.
- Focht, W. J. (1996a). Gaining stakeholder acceptance of technological and environmental decision making. Unpublished manuscript. Oklahoma State University, Stillwater, Oklahoma.
- Focht, W. J. (1996b). Identifying stakeholder preferences for legitimated siting decision criteria and processes. Presented at the Annual Meeting of the National Association of Environmental Professionals. Houston, Texas. June 4, 1996.
- Focht, W. J. (1997). Comparison of stakeholder perspectives in hazardous waste facility controversies. Unpublished manuscript. Oklahoma State University, Stillwater, Oklahoma.
- Fox, W. M. (1990). Effective group problem solving: How to broaden participation, improve decision making, and increase commitment to action. San Francisco, CA: Jossey-Bass Publishers.
- Gargan, J. J. & Brown, S. R. (1993). 'What is to be done?' Anticipating the future and mobilizing prudence. Policy Sciences, 26(4), 347-359.
- Gormley, W. T., Jr. (1989). Taming the bureaucracy: Muscles, prayers, and other strategies. Princeton, NJ: Princeton University Press.
- Guba, E. G. (1978). Toward a methodology of naturalistic inquiry in educational evaluation. (Center for the Study of Evaluation Monograph Series in Evaluation, No. 8). UCLA Graduate School of Education.
- Hart, V. (1978). Distrust and democracy: Political distrust in Britain and America. Cambridge: Cambridge University Press.
- The Harwood Group. (1991). Citizens and politics: A view from Main Street America. New York: The Kettering Foundation.
- Henry, E. C. & Muller, R. A. (1996). Private sector financing considerations for brownfields. Bank of America.
http://www.bankamerica.com/community/env_brown2.html.
- Hird, J. A. (1993). Environmental policy and equity: The case of Superfund. Journal of Policy Analysis and Management, 12 (2), 323-343.
- Keech, M. (1996). Post closure landfill development: Is there life after closure? Waste Age. April 1996, 75-83.

- Keller, G. M. (1987). Industry and the environment: Toward a new philosophy. Vital Speeches of the Day, LIV (5), 154-157.
- King, S. (1996). Brownfields - An industry's perspective. Transcript of speech given at the 1996 EFO Annual Meeting. Oklahoma City, Oklahoma.
- Kottke, R. R. (1996). Voluntary cleanup & brownfields redevelopment program: Revised program development plan. Unpublished DEQ document.
- Lacy, R. H., Jr. (1998). NIMBY in Ramona: Case study of a hazardous waste siting controversy. Unpublished master's thesis, Oklahoma State University, Stillwater, OK.
- Lasko, W. (1995). Statement by Warren Lasko, Executive Vice President, Mortgage Bankers Association of America, on the EPA's Brownfields Economic Redevelopment Initiative.
- Lawler, J. J. (1996). What is policy dialogue? Policy dialogue and other cooperative conflict management processes. (Unpublished Paper). Oklahoma State University, Stillwater, Oklahoma
- Lincoln, Y. S. & Guba, E. G. (1985). Naturalistic inquiry. Newbury Park, CA: Sage Publications, Inc.
- MacLean, D. (Ed.). (1986). Values at risk. Savage, MD: Rowman & Littlefield Publishers.
- Masmanian, D. A. & Nienaber, J. (1979). Can organizations change? Environmental protection, citizen participation, and the Corps of Engineers. Washington, DC: The Brookings Institution.
- Maxwell, J. Possible solutions to the discipline problem at Sill Middle School. Kent, Ohio: Center for Applied Conflict Management, Department of Political Science, Kent State University.
- Maxwell, J. Problem identification at Sill Middle School. Kent, Ohio: Center for Applied Conflict Management, Department of Political Science, Kent State University.
- McKeown, B. & Thomas, D. (1988). Q methodology. (Sage University Paper, series on Quantitative Applications in the Social Sciences, no. 66). Newbury Park, CA: Sage Publications, Inc.
- Morganthau, T., Hosenball, M., Isikoff, M., Liu, M., Smith, V. E., Keene-Osborn, S., & Jorgensen, L. (1995). The view from the far right. Newsweek, May 1, 1995.
- Morone, J. A. (1990). The democratic wish: Popular participation and the limits of American government. USA: Basic Books, Inc.
- Nachmias, D. & Rosenbloom, D. H. (1980). Bureaucratic government USA. New York: St. Martin's Press.

- National Environmental Justice Advisory Council, Waste and Facility Siting Subcommittee. (1995). Environmental justice, urban revitalization, and brownfields: The search for authentic signs of hope (Executive Summary). A report on the "Public Dialogues on Urban Revitalization and Brownfields: Envisional Healthy and Sustainable Communities." Washington, D. C.
- Niedzielski-Eichner, P. A. (1996). Public participation and reuse of federal facilities: Some lessons learned by DOE communities (discussion summary). Energy Communities Alliance
- Oklahoma Department of Environmental Quality. (1995). Annual report. Oklahoma City, OK: Oklahoma University Printing Services.
- Oklahoma Legislature. (1996). Oklahoma Brownfields Voluntary Redevelopment Act. 45th Legislature. (27 O.S. Supp. 1997, Sect.2-15-101 et seq.).
- Pellow, D. N. (1997). A community-based perspective on brownfields: Seeking renewal from the bottom-up. Northwestern University, Department of Sociology and Institute for Policy Research.
<http://www.sustainusa.org/hotissues/pellowessay.html>.
- Peterson, P. E. (1991). The rise and fall of special interest politics. Political Science Quarterly, 105(4), 539-556.
- Portney, P. R. (ed.). (1990). Public policies for environmental protection. Washington, DC: Resources for the Future.
- The President's Council on Sustainable Development. (1996). Sustainable America: A new consensus for prosperity, opportunity, and a healthy environment for the future. (ISBN 0-16-048529-0). Washington, DC: U.S. Government Printing Office.
- Reisch, M. (1997). Congressional Research Service, Issue Brief: IB95013: Superfund reauthorization issues in the 105th Congress. Mark Reisch Environmental and Natural Resources Division. <http://www.cnle.org/nle/waste-5.html>.
- Renn, O., Webler, T., Rakel, H., Dienel, P., & Johnson, B. (1993). Public participation in decision making: A three-step procedure. Policy Sciences, 26, 189-214.
- Rice, A. (1985). The vampire Lestat. New York: Ballantine.
- Rossman, E. J. Public involvement in environmental restoration: inadequacies of federal guidance on data collection for Superfund (CERCLA) community interviews. Environment, Technology, and Society. No. 62, 2-4.
- Ruckelshaus, W. D. (Speaker). (1995). Stopping the pendulum (transcript). Washington, DC: Environmental Law Institute.

- Scott, G. M. & Garrison, S. M. (1995). The political science students' writers manual. Englewood Cliffs, NJ: Prentice Hall, Inc.
- Schulze, W., McClelland, G., Balistreri, E., Boyce, R., Doane, M., Hurd, B., & Simenauer, R. (1994). An evaluation of public preferences for Superfund site cleanup. (supported by USEPA Cooperative Agreement #CR-821980). Unpublished manuscript.
- Sierra Club, Oklahoma Chapter. (1995). Draft brownfields guidance document. Edmond, OK: author.
- Stephenson, W. (1953). The study of behavior: Q-technique and its methodology. Chicago: The University of Chicago Press.
- Stouffer, J. (1996). Brownfields ahead: Proceed with caution. The Planet, 3(3). Sierra Club Activist Resource.
<http://www.sierraclub.org/planet/199604/brownfields.html>.
- Thomas, D., McCoy, C., & McBride, A. (1993). Deconstructing the political spectacle: Sex, race, and subjectivity in public response to the Clarence Thomas/Anita Hill "sexual harassment" hearings. American Journal of Political Science, 37(32), 699-720.
- Thucydides. (1986). History of the Peloponnesian war. (Rex Warner, trans.). Harmondsworth: Penguin.
- Turabian, K. L. (1982). A manual for writers of term papers, theses, and dissertations (5th ed.). Chicago: The University of Chicago Press.
- U. S. Congress. (1980). Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). Public Law 96-510). Washington, DC: U.S. Government Printing Office.
- U. S. Congress. House. (1996). CERCLA Amendments and Reauthorization. 104th Congress, 2nd session, H.B. 2500.
- U. S. Congress. Senate. (1996). Accelerated Cleanup and Environmental Restoration Act of 1996 (CERCLA reauthorization and amendments). 104th Congress, 2nd session, S.B. 1285.
- U. S. Environmental Protection Agency. (1997a). Brownfields national partnership action agenda (directive). May 1997. Washington, DC: Author.
- U. S. Environmental Protection Agency. (1997b). Brownfields national partnership action agenda, fact sheet. (EPA 500-F-97-090). Washington, DC: U.S. Government Printing Office.
- U. S. Environmental Protection Agency. (1995a). Assistance agreement/amendment. (ID No. V 006465-01-N). September 20, 1995.
- U. S. Environmental Protection Agency. (1995b). The brownfields action agenda (directive). Washington, DC: Author.

- U. S. Environmental Protection Agency. (1995c). The brownfields economic redevelopment initiative: Application guidelines for demonstration pilots (EPA/540/R-94/068). Washington, DC: U.S. Government Printing Office.
- U. S. Environmental Protection Agency. (1996). Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), (computer database). Version 4.02. List 8, Site/Event Listing.
- U. S. Environmental Protection Agency. (1988). Community relations in superfund: A handbook (EPA/540/G-88/002). Washington, DC: U.S. Government Printing Office.
- U. S. Environmental Protection Agency. (1990). Hazard ranking system: Final rule. Federal Register (14 December 1990). vol. 55, no. 241. Washington, DC: U.S. Government Printing Office.
- U. S. Environmental Protection Agency. (1992). Hazard ranking system guidance manual (EPA Publication 9345.1-07). Washington, DC: U.S. Government Printing Office.
- U. S. Environmental Protection Agency. (1988). National oil and hazardous substances pollution contingency plan (NCP). (EPA Publication 9200.2-14). Washington, DC: U.S. Government Printing Office.
- U. S. Environmental Protection Agency. (1995d). OSWER (Office of Solid Waste and Emergency Response) environmental justice action agenda (EPA 540/R-95/023). Washington, DC: U.S. Government Printing Office.
- Whillock, R. K. (1994). Dream believers: The unifying visions and competing values of adherents to American civil religion. Presidential Studies Quarterly, XXIV(2), 375-388.
- Williams, P. R. (1995). National Wildlife Federation: Statement on economic development. Statement before the Subcommittee on Commerce, Trade and Hazardous Materials, Committee on Energy and Commerce, U.S. House of Representatives. Washington, D. C.
- Worobec, M. D. & Ordway, G. (1989). Toxic substance controls guide. Washington, DC: Bureau of National Affairs, Inc.
- Wray, L. (1996). Sprawl steals more than urban residents, it undermines business and regional health. (opinion paper, Citizens League of Minneapolis, Minnesota). Fedgazette. Federal Reserve Bank of Minneapolis.
<http://www.woodrow.mpls.frb.fed.us/pubs/fedgaz/edi961B.html>.

APPENDICES

APPENDIX A

OKLAHOMA BROWNFIELDS VOLUNTARY REDEVELOPMENT ACT

(HB 2972, effective 6/14/1996)
27A O.S. §2-15-101 through 110
(unofficial formatting)

§2-15-101

"... shall be known ... as the "Oklahoma Brownfields Voluntary Redevelopment Act."

§2-15-102

A. The Oklahoma Legislature hereby declares that the purpose of the Oklahoma Brownfields Voluntary Redevelopment Act is to:

1. Provide for the establishment of a voluntary program by the Department of Environmental Quality;
2. Foster the voluntary redevelopment and reuse of brownfields by limiting the liability of property owners, lenders, lessees, and successors and assigns from administrative penalties assessed by the Department and civil liability with regard to the remedial actions taken by the applicant for environmental contamination caused by regulated substances, as required by a consent order, if the remedial action is not performed in a reckless or negligent manner; and
3. Provide a risk-based system for all applicable sites based on the proposed use of the site.

B. The Oklahoma Brownfields Voluntary Redevelopment Act shall not be construed to authorize or encourage any person or other legal entity to cause or increase environmental contamination, to avoid compliance with state and federal laws and regulations concerning environmental contamination or to in any manner escape responsibility for maintaining environmentally sound operations.

§2-15-103

For purposes of the Oklahoma Brownfields Voluntary Redevelopment Act:

1. "Applicant" means any person who or entity which:
 - a. has acquired the ownership, operation, management, or control of a site through foreclosure or under the terms of a bona fide security interest in a mortgage or lien on, or an extension of credit for, a brownfields site and which forecloses on or receives an assignment or deed in lieu of foreclosure or other indicia of ownership and thereby becomes the owner of a brownfield,
 - b. possesses a written expression of an interest to purchase a brownfield and the ability to implement a brownfield redevelopment proposal,
 - c. is the legal owner in fee simple of a brownfield,
 - d. is a tenant on or lessee of the brownfield site, or
 - e. is undertaking the remediation of a brownfield site;
2. "Brownfield" means an abandoned, idled or underused industrial or commercial facility or other real property at which expansion or redevelopment of the real property is complicated by environmental contamination caused by regulated substances;
3. "Certificate of Completion" means a document issued by the Department of Environmental Quality pursuant to §2-15-106 of this title upon a determination that an applicant has successfully completed agency-approved risk-based remediation;
4. "Certificate of No Action Necessary" means a document issued by the Department of

Environmental Quality pursuant to §2-15-106 of this title upon a determination that no remediation is deemed necessary for the expansion or redevelopment of the property for a planned use;

5. "Consent order" means an order entered into by the Department of Environmental Quality and an applicant, binding an applicant and the Department to specified authorizations, activities, duties, obligations, responsibilities and other requirements;

6. "Demonstrated pattern of uncorrected noncompliance" means a history of noncompliance by the applicant with state or federal environmental laws or rules or regulations promulgated thereto, as evidenced by past operations clearly indicating a reckless disregard for the protection of human health and safety, or the environment;

7. "Land use disclosure" means the Certificate of Completion or the Certificate of No Action Necessary, issued by the Department of Environmental Quality, which is required to be filed in the office of the county clerk of the county wherein the site is situated pursuant to §2-15-107 of this title;

8. "Remediation" means activities necessary to clean up, mitigate, correct, abate, minimize, eliminate, control and contain environmental contamination caused by regulated substances in compliance with a consent order from the Department of Environmental Quality; and

9. "Risk-based remediation" means site assessment or site remediation, the timing, type and degree of which are determined according to case-by-case consideration of actual or potential risk to human health and safety, or the environment from environmental contamination caused by regulated substances of a brownfield site.

§2-15-104

A. The Department of Environmental Quality may establish and implement a voluntary redevelopment program for brownfields. In administering the Oklahoma Brownfields Voluntary Redevelopment Act, the Department shall:

- a. approve site-specific remediation plans for each site as necessary, using a risk-based system,
- b. review and inspect site assessment and remediation activities and reports, and
- c. use risk-based remediation procedures as determined by the agency to establish cleanup levels.

B. Any brownfields program established pursuant to the Oklahoma Brownfields Voluntary Redevelopment Act shall be a voluntary program.

C. No state governmental entity regulating any person or institution shall require evidence of participation in the Oklahoma Brownfields Voluntary Redevelopment Act.

D. The provisions of the Oklahoma Brownfields Voluntary Redevelopment Act shall not apply to any person who is:

1. Responsible for taking corrective action on the real property pursuant to orders or agreements issued by the federal Environmental Protection Agency;
2. Not in substantial compliance with a final agency order or any final order or judgment of a court of record secured by any state or federal agency relating to the generation, storage,

transportation, treatment, recycling or disposal of regulated substances; or

3. Has a demonstrated pattern of uncorrected noncompliance.

E. 1. The Board of Environmental Quality shall promulgate rules necessary to implement the Oklahoma Brownfields Voluntary Redevelopment Act.

2. The Department is specifically authorized to promulgate emergency rules necessary pursuant to the Administrative Procedures Act to implement the provisions of the Oklahoma Brownfields Voluntary Redevelopment Act.

3. Such rules shall include but not be limited to provision for applications, consent orders, notice and public participation opportunities, brownfield remediation plans and no action necessary determinations issued by the Department.

§2-15-105

A. An applicant may apply to the Department of Environmental Quality for a consent order for risk-based remediation of a brownfield site or for a no action necessary determination.

B. The application shall, as a minimum, include:

1. A description of:

- a. the brownfield which is the subject of the application pursuant to the Oklahoma Brownfields Voluntary Redevelopment Act,
- b. the concentrations of contaminants in the soils, surface water, or groundwater at the site,
- c. the air releases which may occur during remediation of the site, and
- d. any monitoring of the brownfield which is to occur after issuance of the Certificate of Completion or Certificate of No Action Necessary;

2. A remediation plan for remediating any contamination caused by regulated substances on the brownfield or a proposal that no action is necessary to remediate the brownfield considering the present levels of regulated substances at the site and the proposed future uses of the property;

3. The current and proposed use of groundwater on and near the site;

4. The operational history of the site and the current use of areas contiguous to the site;

5. The present and proposed uses of the site;

6. Information concerning the nature and extent of any contamination caused by regulated substances and releases of regulated substances which have occurred at the site and any possible impacts on areas contiguous to the site;

7. Any analytical results from a laboratory certified by the Department of Environmental Quality or other data which characterizes the soil, groundwater or surface water on the site; and

8. An analysis of the human and environmental pathways to exposure from contamination at the site based upon the property's future use as proposed by the applicant.

C. Remediation or proposal for a no action determination shall be based on the potential risk to human health and safety and to the environment posed by the environmental contamination caused by regulated substances at the site, considering the following factors:

1. The proposed use of the brownfield;
2. The possibility of movement of the regulated substances in a form and manner which would result in exposure to humans and to the surrounding environment at levels which exceed applicable standards or which represent an unreasonable risk to human health and safety, or the environment as determined by the Department ; and
3. The potential risks associated with the remediation proposal or no action necessary determination and the economic and technical feasibility and reliability of such proposal or determination.

§2-15-106

A. The Department of Environmental Quality is not authorized to hold any public meeting or hearing to require information, make any determination, or in any manner consider the zoning or rezoning for any proposed redevelopment of a site. The Department must assume that any proposed redevelopment of the site meets or will meet any zoning requirements.

B. The Department may reject or return an application if:

1. A federal requirement precludes the eligibility of the site;
2. The application is not complete and accurate; or
3. The application is ineligible under the provisions of the Oklahoma Brownfields Voluntary Redevelopment Act or rules promulgated pursuant thereto.

C. The Department may enter into a consent order with the applicant for remediation of a site if the Department concludes that the remediation will"

1. Attain a degree of control of regulated substances pursuant to the Oklahoma Brownfields Voluntary Redevelopment Act, other applicable Department rules and standards, and all applicable state and federal laws as determined by the Department; and
2. For constituents not governed by paragraph 1 of this subsection, reduce concentrations such that the property does not present an unreasonable risk, as determined by the Department, to human health and safety or to the environment based upon the property's proposed use.

D. The Department may make a no action necessary determination if the application as required by the Oklahoma Brownfields Voluntary Redevelopment Act indicates the existence of contamination caused by regulated substances which, given the proposed use of the property, does not pose an unreasonable risk to human health and safety or to the environment as determined by the Department.

E. The consent order and the no action determination apply only to conditions caused by contamination on the property, to applicable state or federal laws and to applicable rules and

standards promulgated by the Board of Environmental Quality that existed at the time of submission of the application.

F. If an application is disapproved by the Department, the Department shall promptly provide the applicant with a formal written statement of the reasons for such denial.

G. 1. If the Department determines that the applicant has successfully completed the requirements specified by the consent order, the Department shall certify the completion by issuing to the applicant a Certificate of Completion. The certificate shall list the use specified in the consent order for the site. The certificate shall also include provisions stating that:

- a. the Department shall not pursue administrative penalties and civil actions against the applicant, lenders, lessees, and successors and assigns associated with actions taken to remediate the contamination caused by regulated substances which is the subject of the consent order,
- b. the applicant and all lenders, lessees, and successors and assigns shall not be subject to civil liability with regard to the remedial actions taken by the applicant for environmental contamination caused by regulated substances, as required by the consent order if the remedial action is not performed in a reckless or negligent manner,
- c. no person responsible for contamination caused by regulated substances who has not participated in the voluntary remediation process shall be released from any liability, and
- d. the Certificate of Completion shall remain effective as long as the property is in substantial compliance with the consent order.

2. If the Department determines that no remediation action is deemed necessary for the site, the Department shall issue the applicant a Certificate of No Action Necessary. The certificate shall list the use specified in the application for the site. The certificate shall also include provisions stating that:

- a. the Department shall not pursue any administrative penalties or civil actions against the applicant, lenders, lessees, and successors and assigns associated with the determination that no action is necessary to remediate the contamination caused by regulated substances which is the subject of the certificate,
- b. the applicant and all lenders, lessees, and successors and assigns shall not be subject to civil liability with regard to the determination that no action is necessary to remediate the site,
- c. no person responsible for contamination caused by regulated substances who has not participated in the application process for a no action necessary determination shall be released from any liability,
- d. the Certificate of No Action Necessary shall remain effective as long as the site is in substantial compliance with the certificate as determined by the Department, and
- e. the issuance of the Certificate of No Action Necessary shall not be construed or relied upon in any manner as a determination by the Department that the brownfield has not been or is not environmentally contaminated by regulated substances.

H. The Department shall keep and maintain a copy of the application, work plan, consent order, and other correspondence, record, authorization, and report received by the Department, and an official copy of the Certificate of Completion or the Certificate of No Action Necessary pursuant to the provisions of the Oklahoma Brownfields Voluntary Redevelopment Act relating to the site in an accessible location.

- I. Chapter 10A of Title 67 of the Oklahoma Statutes shall not apply to **any** records or copies required to be kept and maintained pursuant to this section.

§2-15-107

- A. 1. All land use disclosures shall be filed in the land records by the applicant in the office of the county clerk where the site is located.
2. Within thirty (30) days of receipt of the Certificate of Completion or the Certificate of No Action Necessary, the applicant shall submit to the Department of Environmental Quality an official copy of the land use disclosure filed with the county clerk in the county in which the site is located.
3. Failure to record the land use disclosure with the county clerk and submit the official copy to the Department as required by this section shall render the Certificate of Completion or Certificate of No Action Necessary voidable.
- B. Whoever knowingly converts, develops or uses a brownfield site in violation of an authorized use as specified in the land use disclosure shall be deemed guilty of a misdemeanor and, upon conviction thereof, shall be punishable by a fine of not more than One Thousand Dollars (\$1,000.00), imprisonment in the county jail for not more than one (1) year, or both such fine and imprisonment. Each day such violation continues shall be considered a separate offense.

§2-15-108

- A. 1. The Department of Environmental Quality shall not assess against an applicant administrative penalties or pursue civil action associated with the contamination which is the subject of the consent order or no action necessary determination if:
- a. the applicant is in compliance with the consent order during remediation or with the Certificate of No Action Necessary, and
- b. the applicant is in compliance with any post- certification conditions or requirements specified in the consent order.
2. After issuance of the Certificate of Completion or Certificate of No Action Necessary, the Department shall not assess administrative penalties or pursue civil actions associated with the contamination which is the subject of the consent order or no action necessary determination against any lender, lessee, or successor or assign if the lender, lessee, or successor or assign is in compliance with any post-certification conditions or requirements as specified in the consent order or Certificate of No Action Necessary.
- B. 1. Failure of the applicant and any lenders, lessees, or successors or assigns to materially comply with the consent order entered into pursuant to the Oklahoma Brownfields Voluntary Redevelopment Act shall render the consent order or the Certificate of Completion or the Certificate of No Action Necessary voidable.
2. Submission of any false or materially misleading information by the applicant knowing such information to be false or misleading shall render the consent order, Certificate of Completion, or Certificate of No Action voidable.
- C. 1. An applicant to whom a Certificate of Completion or a Certificate of No Action Necessary

has been issued pursuant to the Oklahoma Brownfields Voluntary Redevelopment Act and such applicant's lenders, lessees, or successors or assigns shall not be subject to civil liability with regard to the remedial actions taken by the applicant for environmental contamination caused by regulated substances as required by the consent order if the remedial action is not performed in a reckless or negligent manner.

2. Except as otherwise provided in this subsection, nothing in the Oklahoma Brownfields Voluntary Redevelopment Act shall be construed to limit or negate any other rights of any person from pursuing or receiving legal or equitable relief from the applicant or any other person or legal entity causing or contributing to the environmental contamination.

3. In those cases where an applicant conducts a voluntary remediation in conjunction with a party responsible for the contamination, the responsible party shall also be released from liability to the same extent as the applicant.

D. The release of liability from administrative penalties and any civil actions authorized by the Oklahoma Brownfields Voluntary Redevelopment Act shall not apply to:

1. Any environmental contamination and consequences thereof that the applicant causes or has caused outside the scope of the consent order or the certificate issued by the Department;
2. Any contamination caused or resulting from any subsequent redevelopment of the property;
3. Existing contamination caused by regulated substances not addressed prior to issuance of the Certificate of Completion or the Certificate of No Action Necessary; or
4. Any person responsible for contamination who has not participated in the voluntary remediation.

§2-15-109

The Department of Environmental Quality may require the applicant to reimburse the Department for reasonable costs described in the consent order for the review and oversight of any remediation reports, field activities or other services or duties of the Department pursuant to the Oklahoma Brownfields Voluntary Redevelopment Act which are performed by the Department prior to the issuance of the Certificate of Completion or the Certificate of No Action Necessary, unless otherwise authorized by the consent order.

§2-15-110

A. Except as otherwise specified by this section, any application for remediation of a site submitted to the Department of Environmental Quality prior to the effective date of this act which results in a consent order, and any consent order issued by the Department prior to the effective date of this act meeting the conditions and requirements established by the Department or as otherwise determined by the Department to be in compliance for such site is hereby ratified.

B. Any person who has entered into a consent order with the Department pursuant to this section may continue to rely upon the consent order if the person has accepted the conditions of and in other respects complies with the requirements so established and with the provisions of the consent order as determined by the Department.

C. Any benefits and releases of liability from administrative penalties and from civil action as provided by the Oklahoma Brownfields Voluntary Redevelopment Act shall apply and be made part of the consent order.

D. The provisions of this section shall apply to applications made and/or consent orders issued after January 1, 1988.

OAC TITLE 252 CHAPTER 220. BROWNFIELDS
(unofficial formatting)

SUBCHAPTER 1. GENERAL PROVISIONS

252:220-1-1. Purpose, authority and applicability

- (a) **Authority.** The rules in this Chapter implement the Oklahoma Brownfields Voluntary Redevelopment Act, 27A O.S. § 2-15-101 *et seq.*
- (b) **Promulgation.** 252:220 was promulgated and adopted pursuant to the Act, specifically 27A O.S. § 2-15-104.
- (c) **Qualification.** Any person who qualifies under § 2-15-103 of the Act may apply for a Certificate of Completion or a Certificate of No Action Necessary.

252:220-1-2. Methodology

All analytical and sampling methods used to comply with 252:220 shall be approved ASTM or EPA procedures or procedures approved by the DEQ. Any reference to an ASTM or EPA Method refers to the latest published procedure.

252:220-1-3. Definitions

The following words or terms, when used in this Chapter, shall have the following meanings, unless the context clearly indicates otherwise:

"Act" means The Oklahoma Brownfields Voluntary Redevelopment Act, 27A O.S. § 2-15-101 *et seq.*, as amended.

"ASTM" means the American Society for Testing and Materials.

"Certificate", as used in these rules, shall mean Certificate of Completion and Certificate of No Action Necessary.

"DEQ" means the Oklahoma Department of Environmental Quality.

"Draft cleanup plan" means "draft permit" as used in the Oklahoma Environmental Permitting Act.

"Final cleanup plan" means "final permit" as used in the Oklahoma Environmental Permitting Act.

"Regulated substance", for purposes of this Act only, means any substance regulated under the Environmental Quality Code or rules promulgated pursuant thereto.

"Tier I" [See 252:2-15.]

"Tier II" [See 252:2-15.]

252:220-1-4. Terms not defined by Code or rule

Any term not defined in the Oklahoma Environmental Quality Code or 252 (Oklahoma Administrative Code, Department of Environmental Quality), shall be defined by:

- (1) The Dictionary of Geological Terms, Latest Revised Edition, American Geological Institute,
- (2) EPA Guidance Documents,
- (3) Its generally accepted scientific meaning, or
- (4) Its standard dictionary meaning.

252:220-1-5. Consideration of other laws

The owner or operator of a Brownfield must comply with all applicable state and federal laws and rules.

SUBCHAPTER 3. APPLICATIONS

252:220-3-1. Application process

The application process for a Certificate, including notice and public participation, shall be in accordance with the Uniform Environmental Permitting Act and 252:002.

252:220-3-2. Application content

(a) **Eligibility.** The applicant must provide sufficient information to the DEQ for the DEQ to determine whether the applicant is eligible under the law to apply for liability protection under Brownfields.

(b) **Information.** The applicant shall provide the DEQ with the information specified in the Oklahoma Brownfields Voluntary Redevelopment Act and Subchapter 5, Rules 5-1 through 5-4, inclusive. [See 27A O.S. § 2-15-105.]

SUBCHAPTER 5. PROCEDURE

252:220-5-1. Site characterization

(a) **Memorandum of Agreement.** The applicant and the DEQ shall execute a Memorandum of Agreement (MOA) for site characterization, including a provision for reasonable oversight costs.

(b) **Required plans.** The applicant shall submit a work plan, a quality assurance project plan (QAPP), a sampling and analysis plan (SAP) and a health and safety plan (HSP) for site characterization.

(c) **Report.** The applicant shall submit the following necessary data in a site characterization report:

- (1) Summary of a title search document;
- (2) Complete operational history of the site;
- (3) Information about the current use(s) of the property;
- (4) Documentation which identifies all potential receptors, human and ecological, and potential contamination migration pathways;
- (5) Delineation of all sources of contamination associated with the site, including contaminated soil, and the location, size, constituents and concentrations of each source;
- (6) Delineation of the nature and extent of contamination; and
- (7) Any site specific information requested by the DEQ.

(d) **Previously prepared plans.** If the applicant has already performed an environmental assessment or investigation of the proposed Brownfield site prior to contacting the DEQ, that information may be presented as part of the required site characterization. DEQ may consider this information in determining the appropriateness of further investigation of the site. DEQ may require verification sampling to validate the information submitted. If the information submitted does not fully address the requirements of the program, DEQ may also require the applicant to collect additional data.

252:220-5-2. Risk assessment

(a) **Land use disclosure.** The applicant shall identify the future use of the contaminated property.

(b) **Risk-based cleanup levels.** Using risk assessment methodology approved by the DEQ, the applicant shall:

- (1) Calculate a default risk-based cleanup level; or
- (2) Conduct a risk assessment of the contaminated property to produce site-specific risk-based cleanup levels.

252:220-5-3. Remedial option evaluation

(a) **Remedial options.** The applicant shall identify remedial option(s) and shall submit narrative information which discusses risk-based cleanup levels, economic feasibility, technical feasibility, and reliability of each remedial option considered, including a discussion of institutional controls needed for each option to maintain future use of the site.

(b) **Preferred option.** The applicant shall identify the preferred option.

252:220-5-4. Remediation plan for preferred option

(a) **Statutory requirements.** The applicant shall submit information required by the Act in the remediation plan for the preferred option.

(b) **Other requirements.** The applicant shall also identify:

- (1) The remedial action objectives (RAOs);
- (2) All applicable state and federal laws, rules, standards, limitations, criteria and requirements;
- (3) Methods to verify how risk-based cleanup levels will be achieved; and
- (4) Future monitoring and maintenance requirements.

252:220-5-5. Draft site cleanup plan

The DEQ shall compile from documents submitted a draft site cleanup plan for public review.

252:220-5-6. Final site cleanup plan

The DEQ shall issue a final site cleanup plan in accordance with the Uniform Permitting Procedures, 252:002-15.

252:220-5-7. Consent Order

If a final site cleanup plan is issued, the applicant and the DEQ shall execute a Consent Order for site remediation.

252:220-5-8. Workplan

The applicant shall submit the workplan to the DEQ for approval, including but not limited to the following:

- (1) The design requirements to obtain the RAOs;
- (2) Project and construction management plans; and
- (3) A remediation schedule.

252:220-5-9. Final report

The applicant shall submit a final report which summarizes all remedial work, including the verification sampling results.

SUBCHAPTER 7. CERTIFICATES

252:220-7-1. No action determination

Upon a determination that no action is necessary, the DEQ shall issue a Certificate of No Action Necessary to the applicant in accordance with the Act.

252:220-7-2. Completion of Remediation Project

Upon final inspection and approval of work, the DEQ shall issue a Certificate of Completion to the applicant in accordance with the Act.

252:220-7-3. Filing

The applicant shall file the Certificate and submit a file-stamped copy to the DEQ in accordance with the Act. [27A O.S. § 2-15-107.]

Excerpts from Oklahoma's
UNIFORM ENVIRONMENTAL PERMITTING ACT
27A O.S. Supp. 1996, §2-14-101 *et seq.*
(unofficial format)

§2-14-101. Short title

§2-14-102. Intent

§2-14-103. Definitions

For the purposes of the Oklahoma Uniform Environmental Permitting Act:

(1) "Application" means a document or set of documents, filed with the Department of Environmental Quality for the purpose of receiving a permit or the modification, amendment or renewal thereof from the Department. "Application" includes any subsequent additions, revisions or modifications submitted to the Department which supplement, correct or amend a pending application;

(3) "Draft permit" means a draft document prepared by the Department after it has found a Tier II... application for a permit to be administratively and technically complete...and that such application may warrant the issuance, modification or renewal of the permit.

(4) "Permit" means a permission required by law and issued by the Department, the application for which has been classified as Tier I, II or III by the Board. The term "permit" includes but is not limited to: (a) specific types of permits and other Department authorizations including certifications, registrations, licenses and plan approvals...

(8) "Response to comments" means a document prepared by the Department after its review of timely comments received on a draft denial or draft permit pursuant to public comment opportunities which:

(a) specifies any provisions of the draft permit that were changed in the proposed or final permit and the reasons for such changes, and

(b) briefly describes and responds to all significant comments raised during the public comment period or formal public meeting about the draft denial or draft permit.

(9) "Tier I" means a basic process of permitting which includes application, notice to the landowner and Department review. For the Tier I process a permit shall be issued or denied by a technical supervisor of the reviewing Division or local representative of the Department provided such authority has been delegated thereto by the Executive Director.

(10) "Tier II" means a secondary process of permitting which includes:

a. the Tier I process,

b. published notice of application filing,

c. preparation of draft permit or draft denial,

d. published notice of draft permit or draft denial and opportunity for a formal public meeting, and

e. public meeting, if any.

For the Tier II process, a permit shall be issued or denied by the Director of the reviewing Division provided such authority has been delegated thereto by the Executive Director.

§2-14-104. Applicability

§2-14-201. Rules for Implementation

§2-14-202. DEQ - Powers and duties

A. The DEQ is hereby authorized to implement and enforce the provisions of the Oklahoma Uniform Environmental Permitting Act and rules promulgated thereunder.

B. In addition...the DEQ shall have the power and duty to:

1. Evaluate applications for administrative and technical completeness pursuant to the requirements of the Code and rules... and, when necessary to determine such completeness,

request changes, revisions, corrections or supplemental submissions.

2. Evaluate notices related to applications for sufficiency of content and compliance and require that omissions or inaccuracies be cured;
3. Consider timely and relevant comments received;
4. Prepare responses to comments, draft and final denials and draft...and final permits.
5. Coordinate with federal agencies as is required for federal review or oversight of state permitting programs;

...

...

§2-14-203 Repealed

§2-14-301. Notice requirements

A. Upon filing a Tier II... application with the DEQ, the applicant shall publish notice of the filing as legal notice in one newspaper local to the proposed new site or existing facility. The publication shall identify locations where the application may be reviewed, including a location in the county where the proposed new site or existing facility is located.

B. ...

§2-14-302. Draft denial or draft permit - Notice requirements - Public review

A. Upon conclusion of its technical review of a Tier II...application within the permitting timeframes...the DEQ shall prepare a draft denial or draft permit.

1. Notice of a draft denial shall be given by the DEQ and notice of a draft permit shall be given by the applicant.
2. Notice of the draft denial or draft permit shall be published as legal notice in one newspaper local to the proposed new site or existing facility. The notice shall identify places where the draft denial or draft permit may be reviewed, including a location in the county where the proposed new site or existing facility is located, and shall provide for a set time period for public comment and for the opportunity to request a formal public meeting on the respective draft denial or draft permit. Such time period shall be set at thirty (30) days after the date the notice is published unless a longer time is required by federal regulations... In lieu of the notice of opportunity to request a public meeting, notice of the date, time, and place of a public meeting may be given, if previously scheduled.

B. Upon the publication of a draft permit, the applicant shall make the draft permit and the application, except for proprietary provisions otherwise protected by law, available for public review at a location in the county where the proposed new site or existing facility is located.

§2-14-303. Public meeting - Procedure

The DEQ shall expeditiously schedule and hold a formal public meeting if the DEQ receives written timely request for such meeting pursuant to...§2-14-302 and determines there is a significant degree of public interest in the draft denial or draft permit.

1. Notice of the meeting shall be given to the public at least thirty (30) days prior to the meeting date.
2. The public meeting shall be held at a location convenient to and near the proposed new site or existing facility not more than one hundred twenty (120) days after the date notice of the draft denial or draft permit was published.
3. At the meeting, any person may submit oral or written statements and data concerning the draft permit. Reasonable limits may be set upon the time allowed for oral statements.
4. The public comment period shall automatically be extended to the close of the public meeting. Upon good cause shown, the presiding officer may extend the comment period further to a date certain by so stating at the meeting.

5. Such meeting shall not be a quasi-judicial proceeding.
6. The applicant or a representative of the applicant shall be present at the meeting to respond to questions.

§2-14-304. Issuance or denial of final permit - Administrative procedures

A. For draft permits or draft denials for Tier II applications on which no comment or public meeting request was timely received and on which no public meeting was held, the final permit shall be issued or denied.

B. For draft permits or draft denials for Tier II applications on which comment or a public meeting request was timely received and on which a public meeting was held, the DEQ, after considering the comments, shall prepare a response to comments and issue the draft permit as is, as amended or make final denial.

The response to comments shall be prepared within ninety (90) days after the close of the public comment period unless extended by the Executive Director upon a determination that additional time is required due to circumstances outside the control of the DEQ. ...

...

§2-14-401 Report to legislature

Excerpts from
OAC TITLE 252, CHAPTER 2
PROCEDURES OF THE DEQ
SUBCHAPTER 15. ENVIRONMENTAL PERMIT PROCESSING TIMES
(unofficial format)

252:2-15-1. Purpose and applicability

(a) **Purpose.** The rules in this Subchapter implement the Oklahoma Uniform Environmental Permitting Act, 27A O.S.Supp. 1995, § 2-14-101 *et seq.*, and apply to applicants for and holders of DEQ permits and other authorizations.

(b) **Supersedes inconsistent rules.** Except as otherwise provided by statute, the provisions of this Subchapter shall supersede any inconsistent provision of other Chapters of this Title.

(c) **Applicability.**

(1) Applications filed with the DEQ on and after July 1, 1996, are subject to the procedural requirements of 27A O.S.Supp. 1995, § 2-14-101 *et seq.*, this Subchapter and other applicable rules of the Board.

(2) Applications filed before July 1, 1996, are subject to the statutory and regulatory procedural requirements existing at the time of the filing unless the applicant elects to comply with the statutes and rules described in paragraph 1 of this subsection.

252:2-15-2. Definitions

In addition to terms defined in 252:2-1-2, the following words and terms, when used in this Subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

"Act" means the Oklahoma Uniform Environmental Permitting Act, 27A O.S. § 2-15-101 *et seq.*

"Administratively complete" means an application that contains the information specified in the application form and rules in sufficient detail to allow the DEQ to begin technical review.

"Application" See 27A O.S.Supp. 1995, § 2-14-103(1).

"Major facility", as used in air quality tier classifications, means a source subject to the permitting requirements of 40 CFR Part 70.

"Minor source", as used in air quality tier classifications, means a source that is not subject to the permitting requirements of 40 CFR Part 70.

"Off-site", as used in hazardous waste, solid waste and UIC tier classifications, means a facility which receives waste from various sources for treatment, storage, processing, or disposal.

"On-site", as used in hazardous waste, solid waste and UIC tier classifications, means a facility owned and operated by an industry for the treatment, storage, processing, or disposal of its own waste exclusively.

"Part" means a numbered Part of this Subchapter.

"Program" means a regulatory section or division of the DEQ.

"Submittal" means a document or group of documents provided as part of an application.

"Supplement" means a response to a request for additional information following completeness and technical reviews, and information submitted voluntarily by the applicant.

"UIC" means underground injection control.

252:2-15-26. Tier processes described

To implement the three tiered permitting processes of the Act, applications are classified in Part 5 as Tier I, II or III. The steps an applicant must follow for a Tier I, II or III application are shown in Appendix C of this Chapter.

252:2-15-27. Unclassified applications

The tier designation for any type of application not classified in this Subchapter shall be determined according to 27A O.S.Supp. 1995, § 201.

252:2-15-28. Permit decision-making authority

(a) **Designated positions.** The Executive Director may delegate in writing the power and duty to issue, renew, amend, modify and deny permits and take other authorization or registration action. Unless delegated to a Division Director by formal assignment or rule, the authority to act on Tier I applications shall be delegated to positions within each permitting program having technical supervisory responsibilities and, for local actions authorized by law, to environmental specialist positions held by the DEQ's local services representatives. The authority to act on emergency permits or Tier II applications shall be delegated to the Division Director of the applicable permitting division.

(b) **Revision.** The Executive Director may amend any delegation in writing.

252:2-15-29. Published notices

(a) **Notice content.** In addition to content requirements of the Act, all published legal notice(s) shall contain the:

- (1) Name and address of the applicant;
- (2) Name, address and legal description of the site, facility and/or activity;
- (3) Purpose of notice;
- (4) Type of permit or permit action being sought;
- (5) Description of activities to be regulated;
- (6) Locations where the application may be reviewed;
- (7) Names, addresses and telephone numbers of contact persons for the DEQ and for the applicant;
- (8) Description of public participation opportunities and time period for comment and requests;
- (9) Any other information required by DEQ rules; and
- (10) Any information the applicant deems relevant.

(b) **Proof of publication.** An applicant, within twenty (20) days after the date of publication, shall provide the DEQ with a written affidavit of publication for each notice published. In case of a mistake in a published notice, the DEQ may approve the publication of a legal notice of correction or may require that the entire legal notice be republished.

252:2-15-30. Tier I process requirements

(a) **Pre-application conference.** Prior to filing an application, an applicant may request a conference with the DEQ.

(b) **Application filing.**

(1) **Copies.** Two (2) copies of a Tier I application shall be filed with the DEQ except when the application form or instructions specifies that only one (1) copy is needed. Applicants for residential systems (OAC 252:640) and small public sewage systems (OAC 252:655-29) permits shall file their two copies with the local DEQ office for the county in which the real property is located.

(2) **Fees.** Fees established in DEQ program rules shall be payable at the time of application and are not refundable.

(3) **Notice to landowner.** Applicants must demonstrate to the DEQ that they are not seeking a permit for land or for any operation upon land owned by others without their knowledge. Applicants shall certify by affidavit filed with the DEQ that: they own the real property; or they have a current lease or easement which is given to accomplish the permitted purpose; or if they do not own the real property, they have provided legal notice to those who do. The DEQ may rely on the affidavit, and the applicants shall bear the burden of meeting any challenges. Legal notice is governed by Oklahoma law which, for example, authorizes: service by sheriff or private process server; service by certified mail, restricted delivery; or service by publication, if the person cannot be located through due diligence. Notice to the person who signed a lease or to the administrator or executor of a trust or an estate may be sufficient.

- (4) **Withdrawal.** An applicant may withdraw an application at any time with written notice to the DEQ and forfeiture of fees.
- (c) **Application review.** Unless stated otherwise in new laws or rules, applications are subject to the laws and rules of the DEQ as they exist on the date of filing and afterward as changed, up to the date of issuance or denial. See Part 7 for review procedures and time lines.
- (d) **Issuance or denial.**
 - (1) **Compliance required.** A new, modified or renewed permit or other authorization shall not be issued until the DEQ has determined the application is in substantial compliance with applicable requirements of the Code and rules of the Board.
 - (2) **Conditions for issuance.** The Department may not issue a new, modified or renewed permit or other authorization if:
 - (A) The applicant has not paid all monies owed to the DEQ or is not in substantial compliance with the Code, rules of the Board and the terms of any existing DEQ permits and orders. The DEQ may impose special conditions on the applicant to assure compliance and/or a separate schedule which the DEQ considers necessary to achieve required compliance; or
 - (B) Material facts were misrepresented or omitted from the application and the applicant knew or should have known of such misrepresentation or omission.
 - (3) **Issuance.** See 252:2-15-28.

252:2-15-31. Tier II process requirements

- (a) **Pre-application conference.** "Tier I" requirements apply. See 252:2-15-30.
- (b) **Application.** "Tier I" requirements apply. See 252:2-15-30, except the applicant shall file three (3) copies of the application with the DEQ and place one (1) copy for public review in the county in which the site, facility or activity is located.
- (c) **Published notice of filing.** See 27A O.S. § 2-14-301 and 252:2-15-29.
- (d) **Application review.** "Tier I" requirements apply. See 252:2-15-30.
- (e) **Draft permit or draft denial.** See 27A O.S. § 2-14-302.
- (f) **Notice of draft permit/denial.** See 27A O.S. § 2-14-302 and 252:2-15-29. For permit modification actions, only those issues relevant to the modification(s) shall be reopened for public review and comment.
 - (1) **Exception to notice requirement.** Applicants for solid waste transfer station permits shall be exempt from public comment and public meeting requirements if the board of county commissioners of the county of the proposed site, after opportunity for written or oral public comment, has found the application to be within the scope of the county's solid waste management plan. See 27A O.S. Supp. 1995, § 2-10-307.
 - (2) **Additional notice.** In addition to Section 302 notice:
 - (A) Applicants for a NPDES, RCRA or UIC permit are subject to applicable additional notice provisions of federal requirements promulgated as rules of the Board.
 - (B) Applicants for a proposed wastewater discharge or emissions permit which may affect the water quality or air quality of a neighboring state must give written notice to the environmental regulatory agency of that state.
 - (C) Applicants for a solid waste landfill permit shall provide notice by certified mail, return receipt requested, to owners of mineral interests and to adjacent landowners whose property may be substantially affected by installation of a landfill site. See *DuLaney v. OSDH*, Okl., 868 P.2d 676 (1993).
- (g) **Public comment and formal public meeting.** See 27A O.S. § 2-14-302 and 27A O.S. § 2-14-303. The DEQ shall determine the location of any formal public meeting to be held and the designated presiding officer shall establish its procedures.
- (h) **Response to comments.** See 27A O.S. § 2-14-304.
- (i) **Issuance or denial.** "Tier I" requirements apply. See 252:2-15-30.

252:2-15-64. Brownfields applications - Tier I

A Tier I application shall be required for a Memorandum of Agreement for site characterization.

252:2-15-65. Brownfields applications - Tier II

A Tier II application shall be required for all Certificates.

252:2-15-70. Common review procedures and time lines

(a) **Receipt of applications.** Unless otherwise provided in this Subchapter, upon the receipt of an application for filing and the proper fee, each Program shall:

- (1) File-stamp the application with the date of receipt, the Division and/or Program name and an identification number;
- (2) Assign the application to a named person who will do the review; and
- (3) Timely log this information.

(b) **Administrative completeness review.** Unless otherwise provided in the Code or this Subchapter, the reviewer shall have 60 calendar days from the logged date of filing in which to determine whether the application is administratively complete.

(1) **Not complete.**

(A) Upon determining that the application is not complete, the reviewer shall immediately notify the applicant by mail, describing with reasonable specificity the inadequacies and measures necessary to complete the application.

(B) This notice shall not require or preclude further review of the application and further requests for specific information.

(C) If the reviewer does not notify the applicant of inadequacies, the period for technical review shall begin at the close of the administrative completeness review period.

(2) **Complete.** When the application is administratively complete, the reviewer shall log the date and immediately notify the applicant by mail. The period for technical review begins.

(c) **Technical review.** Each Program involved shall have a certain time period to review each application for technical compliance with the relevant regulations and reach a final determination.

(d) **When times are tolled.** The time period for review is tolled (the clock stops) during litigation, during periods of public review and participation [includes public meetings and administrative permit hearings (and waiting periods), public comment periods, time required for DEQ preparation of responses to public comments received, and review by other federal or State agencies], or when the Program has asked for supplemental information and advised the applicant that the time period is tolled pending receipt, or during the time in which an applicant amends his application of his own accord.

(e) **Supplemental time.** To compensate for time spent in reviewing inadequate materials, the DEQ's notice of deficiencies and request for supplemental information may specify that up to 30 additional calendar days may be added to the application processing time. Requests for supplemental information and data may also specify that additional days for technical review equal to the number of days the applicant used to prepare and submit such supplement may be added to the application review time.

(f) **Failure to respond.** Except for good cause shown, failure by an applicant to supplement an application within 180 days after the mailing date of a notice of deficiencies, or by a date agreed to by the DEQ and the applicant, shall void the application and forfeit the fees. The DEQ shall notify the applicant of an opportunity to show cause why this should not occur. Failure to show cause shall result in an order appealable according to 75 O.S. § 318.

(g) **Extensions.** Extensions... may be made as provided by law.

252:2-15-71. Pending failures

(a) **Circumstances outside agency control.** Technical review times shall be tolled for specified

times when, prior to the deadline, the Executive Director certifies that a failure to meet a deadline is imminent and is caused by circumstances outside the control of the DEQ. Such circumstances include, but are not limited to, acts of God, a substantial and unexpected increase in the number of applications filed, and additional review duties imposed on the DEQ from an outside source.

(b) **Other circumstances.** Where circumstances that are not clearly outside the control of the DEQ may cause a failure to meet a deadline, then:

- (1) At least thirty (30) calendar days prior to the deadline the DEQ shall reassign staff and/or retain outside consultants to meet such deadline.
- (2) The applicant may agree to an extension of time for a specific purpose and period of time with refund of the entire application fee, unless a refund is prohibited by law.

252:2-15-76.1. Brownfields time lines

The technical review period for Brownfields applications and for each submittal and resubmittal shall be 60 days, subject to 252:2-15-70.

252:2-15-77. Pre-issuance permit review and correction

(a) **Review.** In addition to its own review, the DEQ may, for Tier I and II, and shall, for Tier III, at any time before issuance, ask an applicant to review a permit for calculation and clerical errors or mistakes of fact or law.

(b) **Correction.** The DEQ may correct any permit before it is issued.

(1) **Notice of significant corrections.** For permits based on Tier II and III applications, an applicant shall publish legal notice in one newspaper local to the site of any correction or change proposed by the DEQ which significantly alters a facility's permitted size, capacity or limits.

(2) **Comments.** The DEQ may open a public comment period, and/or reconvene a public meeting and/or administrative hearing to receive public comments on the proposed correction(s).

APPENDIX B

MARK S. COLEMAN
Executive Director



FRANK KEATING
Governor

State of Oklahoma
DEPARTMENT OF ENVIRONMENTAL QUALITY

Brownfields

"abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination."
(U.S. EPA)

On June 14, 1996, Governor Frank Keating signed the Oklahoma Brownfields Voluntary Redevelopment Act. The purpose of the Act is to encourage the cleanup and reuse of contaminated industrial properties by limiting environmental liability under certain conditions. The new law allows the Oklahoma Department of Environmental Quality (DEQ) to develop a voluntary redevelopment program for the state. Proposed rules, which implement the new law, are currently available for public comment.

The issues associated with brownfields are not just environmental – they involve economic development, urban planning, community needs, property rights, health issues, protection of natural resources, economics, legal liability, future generations' rights, etc. The DEQ wants to ensure that the new program functions effectively and meets the needs of the people of Oklahoma. In order to ensure that all aspects of the brownfields issue are considered in the implementation of the program, DEQ is researching the views, experiences, needs, preferences, and ideas of interested citizens. Your input will help direct the program.

Your Opinion is Important!

Participation in this investigation is easy. Just respond to this mailing, be sure to leave your name and telephone number, and an investigator will contact you. We appreciate your help in this important research study.

Please contact:

Rita Kottke
Principal Investigator
Waste Management Division
1000 NE 10th Street
Oklahoma City, OK 73117-1212

Telephone (405) 271-7071
Toll free 1-800-869-1400
FAX (405) 271-1342
e-mail Hal.Cantwell@OKLAOSF.state.ok.us

Please respond by January 24, 1996.

MEMORANDUM

Date: January 7, 1997

To: All Local DEQ Personnel

From: Rita R. Kottke
Senior Environmental Specialist
Waste Management Division

Re: Brownfields

The Waste Management Division is currently in the process of developing a program to encourage the voluntary cleanup and reuse of former industrial/commercial properties. Many of these sites have lost value due to the perception that they may be contaminated with hazardous substances from former operations at the site. Environmental laws such as the federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, aka Superfund) and state nuisance laws have attached heavy environmental liability to these sites. Lenders and developers have shied away from these sites for fear of becoming liable for the environmental cleanup.

EPA refers to these sites as "Brownfields" and is encouraging states to develop programs to encourage the redevelopment of such sites. Brownfields are generally considered to be an urban problem; however, because of Oklahoma's unique economic and cultural history, these sites are located throughout the state.

As part of program development, Waste Management is conducting an investigation into the experiences, needs, preferences, etc., of the affected population or "stakeholders." We want to ensure that the program meets the needs of Oklahomans. *We need your help.* You may know of area citizens who may have an interest in this issue—owners of such sites, bankers, developers, neighboring property owners, local environmental groups, local citizen coalitions, etc. If you know of anyone who might be interested in this issue, please pass along one of the enclosed flyers. Through this statewide investigation, we hope to identify all the differing concerns and needs of Oklahomans and ensure that they are considered in the formulation of the program.

We appreciate your help in this effort. Thank you.

PRESS RELEASE
Brownfields

The Oklahoma Department of Environmental Quality is in the process of creating a new program to implement the Oklahoma Brownfields Voluntary Redevelopment Act. The act, which was signed by Governor Keating on June 14, 1996, encourages the reuse of former industrial properties.

Many former industrial sites sit vacant because developers are concerned about buying a potentially polluted site. EPA refers to these sites as "brownfields" and defines them as "abandoned, idled, or under-used industrial and commercial facilities where expansion or redevelopment is complicated by real or perceived environmental contamination." These sites are being abandoned due to the heavy environmental liability which may be attached to them. Under the federal Superfund law whomever owns the property (and all the past owners and operators) can be held responsible for the entire cost of cleaning up pollution on the site. Under state law, environmental contamination of land is the responsibility of the land owner.

The problems associated with brownfields are not just environmental. The problem of brownfields affects everyone. When an industry closes its doors, the community suffers. There is immediate unemployment followed by a decrease in the community's tax base. Boarded up buildings add to urban blight and attract criminals. Existing roads and utilities go unused, while the taxpayer must fund the extension of roads and utilities to new industrial sites on the edge of town. This development of uncontaminated farmlands and natural areas surrounding cities adds to urban sprawl.

Your community may already own one of these environmental liabilities. Many communities have taken former industrial sites for back taxes or acquired the property for a token fee when a company left town. Banks have also acquired brownfields through foreclosures. As a result, banks have become very wary of lending money on former industrial properties.

Oklahoma's new brownfields law allows the DEQ to provide some relief from liability for owners and developers who voluntarily clean up contaminated land or show substantial evidence that the site is not a threat to human health or the environment. The law allows cleanup levels at each site to be based on the site's proposed future use and the risks to human health and the environment associated with that use.

DEQ wants to ensure that the new program reflects the needs of the state and the preferences of its citizens. The DEQ is studying the problem of brownfields in Oklahoma and is seeking input from affected and concerned citizens. The stakeholders in this issue possess valuable information which can aid the DEQ in creating a meaningful program. DEQ believes that the program will continue to evolve over time as the needs of communities and stakeholders become better defined. As required by the Act, DEQ has proposed emergency rules to implement the new law. The proposed rules are currently available for public comment. The Environmental Quality Board will consider the proposed rules in January 1997. For more information, please contact the DEQ Customer Assistance at 1-800-869-1400.

Consent Form

I, _____, hereby authorize or direct the Oklahoma Department of Environmental Quality (DEQ), or associates or assistants, of its choosing, to perform the following procedure.

To conduct an interview concerning the experiences, concerns, and ideas of the participant in relation to the redevelopment of Brownfields in Oklahoma. The interview will take two to three hours and will be recorded on audiotape; however, a portion of the participants will be asked to participate further in the study at a later date. The additional participation will involve ranking statements developed from the interviews by perceived importance. Some participants will be asked to participate in one of four focus groups. The focus group discussions will take four to five hours.

All statements will be used in the research analysis, and every effort will be made to keep the identities of the participants confidential. The transcripts of all interviews and focus groups, with identities deleted, will be kept in DEQ's files. All audiotapes will be erased after transcription. The Oklahoma Open Records Act requires that all state files be open to the public.

The interviews may be conducted in person or on the telephone, at the option of the participant. The additional participation will be conducted in person.

Participation in this is a direct opportunity to affect DEQ's policy on the redevelopment of contaminated properties. Decisions concerning the direction of the Brownfields Program will be directly affected by this research.

This is done as part of an investigation entitled "Developing a Brownfields Policy for the State of Oklahoma: Implementation of a Synoptic Normative Theoretic Framework for Legitimated Environmental Decision Making."

The purpose of the procedure is to inform the policy making procedure for DEQ's future Brownfields program.

I understand that participation is voluntary, that there is no penalty for refusal to participate, and that I am free to withdraw my consent and participation in this project at any time without penalty after notifying the project director.

I may contact Rita R. Kottke, Project Manager, at telephone number (405) 271-7071. I may also contact the IRB Executive Secretary, 305 Whitehurst, Oklahoma State University, Stillwater, OK 74078, Telephone #(405) 744-5700.

Page 1 of 2

I have read and fully understand the consent form. I sign it freely and voluntarily. A copy has been given to me.

Date; _____ Time: _____ (a.m./p.m.)

Signed: _____
Signature of Participant

I certify that I have personally explained all elements of this form to the subject before requesting the subject to sign it.

Signed: _____
Project Director or his/her authorized representative

Brownfields

The following demographic information is requested. This information will only be used in the statistical analysis of the data.

Participant Number _____

County of Residence _____

Age _____

Race _____

Gender _____

Education Level _____

Occupation _____

Income below \$ 10,000 \$ 10,001 - \$ 30,000

 \$ 30,001 - \$ 50,000 \$ 50,001 - \$70,000

 greater than \$ 70,000

Do you own real property? If so, what type? residential
 commercial
 industrial
 agricultural

What "stakeholder" group do you personally identify with?

Property Owner

Prospective Purchaser

Lending Institution

Insurance Industry

Municipality

State

Legislative

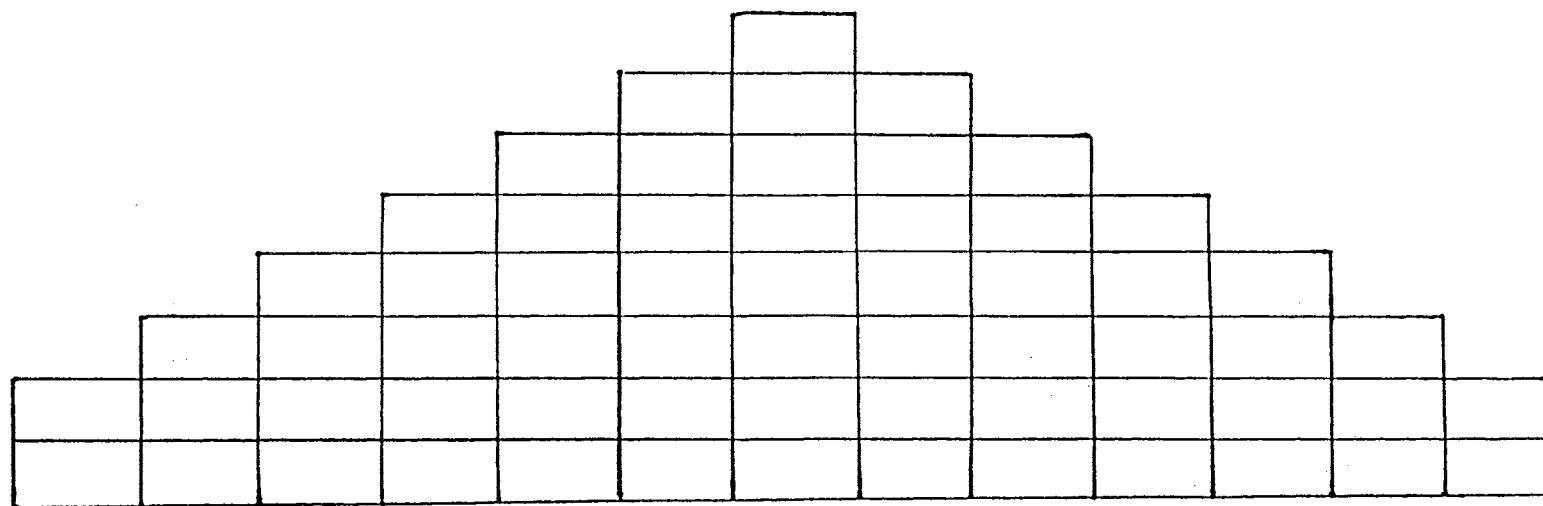
Environmental Justice Group

Environmental Group

Labor Group

General Public

Other (specify) _____



Most representative of my view

Least representative of my view

APPENDIX C

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 07-15-96

IRB #: AS-97-000

**Proposal Title: DEVELOPING A BROWNSFIELD POLICY FOR THE STATE OF OKLAHOMA:
IMPLEMENTATION OF A SYNOPTIC NORMATIVE THEORETIC FRAMEWORK FOR
LEGITIMATED ENVIRONMENTAL DECISION MAKING**

Principal Investigator(s): James Lawler, Will Focht, Rita Kottke

Reviewed and Processed as: Expedited

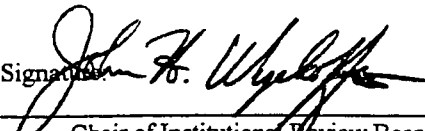
Approval Status Recommended by Reviewer(s): Approved

ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD AT
NEXT MEETING, AS WELL AS ARE SUBJECT TO MONITORING AT ANY TIME DURING THE
APPROVAL PERIOD.

APPROVAL STATUS PERIOD VALID FOR DATA COLLECTION FOR A ONE CALENDAR YEAR
PERIOD AFTER WHICH A CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE
SUBMITTED FOR BOARD APPROVAL.

ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR APPROVAL.

Comments, Modifications/Conditions for Approval or Disapproval are as follows:

Signature: 

Chair of Institutional Review Board

cc: Rita Kottke

Date: July 17, 1996

VITA

Rita Rae Kottke

Candidate for the Degree of

Doctor of Philosophy

Thesis: DEVELOPING A BROWNFIELDS POLICY FOR THE STATE OF OKLAHOMA:
IMPLEMENTATION OF A SYNOPTIC NORMATIVE THEORETIC FRAMEWORK FOR
LEGITIMATED ENVIRONMENTAL DECISION MAKING

Major Field: Environmental Sciences

Area of Specialty: Policy

Biographical:

Personal Data: Born in Oklahoma City, Oklahoma, February 1, 1958, the
daughter of Mr. and Mrs. W. E. Kottke, Guymon, Oklahoma.

Education: Graduated from Guymon High School, Guymon, Oklahoma, in May,
1976; received Bachelor of Science degree in Housing, Design, and
Consumer Resources from Oklahoma State University in 1980; received
Master of Science in Housing, Design, and Consumer Resources from
Oklahoma State University in 1982; completed requirements for admission
for candidacy for the Doctor of Philosophy degree at Oklahoma State
University in July, 1998.

Professional Experience: employed as a Senior Environmental Specialist for the
State of Oklahoma Department of Environmental Quality, Superfund and
Brownfields programs 1992-98.