

THERE'S SOMETHING HAPPENING HERE:
WHAT IS REALLY HAPPENING ON THE FRONT-LINES OF
ENVIRONMENTAL REGULATION

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DEDICATION

To my Mom-

Without hesitation, I humbly dedicate my dissertation to my Mom. Without her support, love, guidance, and her just being who she is, I would not be the person I am today nor would I be where I am today. It is with great humility I stand on her shoulders as she stood on the shoulders of her mother and all the women in our family before her.

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ABSTRACT

Environmental policy debates are gaining momentum in the public square from scholars and citizens alike. From all sides of the debate, a growing consensus is emerging that advocates a shift in the environmental regulatory system in the United States from one that emphasizes command and control regulations to one that advocates collaboration between the regulator and regulatee. Although this dialogue is expanding, the research literature largely remains silent on a critical component of the environmental regulatory system – the individuals on the front-lines. Most notably, these front-line workers are environmental compliance inspectors and the individuals that inspectors deal with at regulated facilities. Inspectors and facility personnel are largely responsible for the implementation of environmental regulation in the U.S., yet they are overlooked in the discussion of regulation, past and present. These key actors are of tremendous significance and must be considered in discussions of environmental policy. In particular, the interactions of these two important groups of actors merit exploration. This research examines the interactions of inspectors and facility personnel in Virginia and investigates contentions that the relationships in the environmental regulatory system lack trust. One-on-one interviews were conducted with nearly four dozen inspectors and facility personnel in Virginia to seek answers to the question: How does trust factor into the relationships between environmental compliance inspectors and facility personnel in Virginia? In contrast to presumptions in the literature, this study finds evidence of positive relationships between these two seeming adversaries and asserts that trust is present in these interactions. Accordingly, there are potentially significant implications of these findings for future environmental policy. These implications include the realization that the relationships are positive, that there may indeed be differences between relationships at the state versus federal level and the experiences at one level dominate prevailing perceptions, and that traditional assumptions of command and control regulations may not be as valid as previously thought.

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CHAPTER ONE INTRODUCTION

The topic of environmental policy frequently provokes debate and criticism in the United States because of its contentious nature. In this policy realm, questions rage from all sides about an assortment of subjects and concerns. Environmental debates frequently are intertwined with other broader issues, such as economics and moral obligations. Two real-life situations I experienced exemplify some of the debate in this policy arena. The two stories relayed below involve key actors in environmental regulation – government officials and those individuals regulated by the government.

Yacht builders, while making beautiful sea-going vessels that allow individuals to see the earth from a distinctive vantage point, also employ a variety of environmentally harmful chemicals and production processes. Accordingly, it was not surprising when a state environmental protection agency got a phone call from a particular yacht building company searching for help in identifying the source of the ammonia leeching into their wastewater streams, causing a significant permit violation. Agency staff gathered the appropriate information and set up a visit with the yacht builders. When the agency staff arrived, employees at the yacht builders were thrilled. Finally, they were going to get some answers regarding the mysterious ammonia, and they could stop violating their permit requirements. The two seeming adversaries worked together harmoniously; before the day was over, they were able to find the ammonia problem and solve it together. By the end of the afternoon, both sides appeared pleased with the events that transpired and were anxious to move forward. Such a response from a regulated firm seems to defy common anecdotes about the interactions of these parties.

A more plausible story about actors in the environmental regulatory system might be one like the following. Fuels are used in many facets of life and it would be absurd to try to list each one. The production process of fuels for their use in a host of functions includes storage of the

fuels at various points. Government bureaucrats, following standard and legally mandated procedures, visited such a fuel storage facility. Upon their arrival, the facial expressions and body language of the handful of employees at this facility said it all: the bureaucrats were ruining their day. The agency officials began their routine of checking permit records and conducting a physical inspection of the facility. While they were engaged in this process, the employees at the site had stopped what they were doing and were watching over the inspectors, grimacing. A few were on the phone with their company headquarters, prompting company executives to arrive at the facility and bemoan the presence of the inspectors. During the site visit, the agency staff uncovered a problem with polychlorinated biphenyls (PCB) levels. After informing the facility personnel of the problem and the likely enforcement action that would follow, tempers flew. Both sides quickly became argumentative and accused the other of various errors and protocol violations. As a result, there was no discussion of how to solve, or at least ameliorate, the PCB problem. In the end, neither party was happy, and both sides began to prepare for further confrontation. This story is more emblematic of those told about the relationship between government bureaucrats and the personnel at regulated firms.

Reflection on these two stories could easily leave one bewildered. What could explain the differences in these two situations? These experiences raise a fundamental question: what are the interactions like between the regulators (government officials) and the regulated (facility personnel) – are they more like the encounter with the yacht builder or that with the fuel storage facility?

Statement of the Problem

In pursuit of this intriguing question, I went to the scholarly literature. I was in search of information about the nature of these interactions that might help me understand why I had had such different experiences. My search proved futile because there was little to uncover. I found a few sources that dealt with the front-line workers in environmental regulation, but they were either

dated and contained only minimal mention of the topic (e.g. Bardach and Kagan 1982/2002) or were from other countries (e.g. Hutter 1997).

What accounts for this apparent deficiency in the literature? Why are scholars not pursuing questions about the nature of these interactions? From my vantage point, the relationships between bureaucrats and facility personnel are a very – if not *the* most – important part of environmental protection. The day-to-day execution of environmental laws occurs through the actions of front-line workers. Why then are these key actors mostly absent from the environmental policy literature?

Additionally, as I searched for information about and explanations of the nature of the interactions between regulators and regulated in environmental policy, I found further dialogue that amplified my desire for more knowledge. There is growing consensus in the environmental policy and regulation literature that it is time for the United States to move beyond the traditional command and control regulation that has dominated the regulatory system thus far and adopt “next generation” environmental policies (see, for example, NAPA 1997; Davies and Mazurek 1997; Kettl 2002; Durant, O’Leary, and Fiorino 2004). While the coming pages examine the particulars of next generation policies, it is important to highlight that the vast majority of these policies require a more collaborative approach to environmental protection between the regulator and the regulatee. In other words, next generation policies need a more cooperative environment and partnership between the front-line workers to be successful. These next generation policies require former adversaries, who have been conditioned to detest the other because of the powers one party exerts over the other, to work together and trust one another (Potoski and Prakash 2004, 154). Moreover, the notion of trust in these relationships compelled me because the command and control regulations appeared to require distrust, while next generation policies seem to require trust between the regulated and the regulator.

In my search for understanding my two very different experiences, I had not made much progress. First, I uncovered rather little in the environmental policy literature about the nature of the interactions between regulators and regulatees. Second, I did unearth scholarship about the nature of environmental regulation and what it should be like in the future, but the majority of that work focused on more macro levels of analysis than the micro level I wanted to learn more about. As a result, I began to question what the nature of the interactions was generally like between inspectors and facility personnel. Even more important than the need to answer this question was the realization that for the environmental regulatory system to adopt next generation policies, how were the interactions, the relationships, between these front-line workers needed to change. How were these actors going to move from a regulatory system in which they distrusted - maybe even hated - one another to a system in which they trusted each other and worked together as partners for environmental protection? Although it would be impossible to fully answer these questions in a single study, the research here endeavors to begin to explore what may be one of the most important questions in environmental policy today.

Research Question and Approach

More formally, I began this study with the aim of exploring the following question: What is the nature of the relationship between environmental compliance inspectors and facility personnel? Given the enormity of these interactions, the study employed an organizing concept of trust to help guide the investigation of these relationships. Preliminary research uncovered several scholars asserting the lack of trust among actors in the environmental regulatory system (see, for example, Kettl 2002; Fiorino 2006; Eisner 2006).¹ These statements provided a starting point for this

¹ It is important to note that the level at which trust is asserted to be low is unclear; in other words, these scholars may be referring to trust among agency leaders and environmental groups, among legislatures and the regulated community, and so forth.

research to examine the interactions between inspectors and facility personnel and to investigate if trust is part of these interactions.

As I started conducting one-on-one interviews with inspectors and facility personnel, I quickly uncovered evidence of the crucial role trust appears to play in these relationships. While I was still interested in the nature of these relationships, I was particularly intent on focusing on trust because its importance was contrary to my initial expectations. Therefore, as Berg (2007) (among others) suggests, qualitative research should be an iterative process, so I revised my research question to better emphasize the significance trust appeared to play in these relationships (25, 38-39). The research question that this research ultimately pursued in this research is: Does trust factor into the relationships between environmental compliance inspectors and facility personnel in Virginia; and if so, how?

To address this question, a multiple case study design was used, and I conducted one-on-one interviews with inspectors and facility personnel to gather information about their experiences working with each other. The study is limited to one state, Virginia, to control for state level influences, and it includes a relatively small sample of 44 front-line workers. These parameters of the research design are in keeping with a study that is exploratory.

Significance

Environmental policy is an increasingly visible policy realm in the U.S. Recently, it has been gaining considerable national attention – particularly due to the global climate change debate, but it has long been an area of study. Numerous actors in environmental policy – both academic and non-academic – have been advocating a move away from traditional command and control regulations to the next generation of environmental policies that are more collaborative and less adversarial. Missing in much of this discussion is consideration of the front-line workers: inspectors and facility personnel. These individuals and their interactions with one another are important parts of

environmental protection; yet, we lack a basic understanding of these relationships and interactions under the traditional model of environmental regulation. Without an understanding of these relationships currently, it would be difficult to advocate or oppose a move to embrace the next generation of environmental policies that relies heavily on the interactions of those individuals on the front-lines of environmental protection.

Accordingly, the purpose of this research is to begin to investigate the current relationships between inspectors and facility personnel. Since this area of inquiry has been largely overlooked, the potential significance of this and future research is great. First, empirical exploration of these relationships will be important for gaining preliminary insights into them. Second, the research is likely to spur future endeavors that will provide a more comprehensive view of these relationships. Third, conversation regarding the future of the environmental regulatory system arguably must consider these relationships, and research about their concerns currently should help encourage consideration of them in future environmental protection strategies. Fourth, although this research is primarily concerned with the environmental policy realm, the attention it draws to the front-line workers in regulation and its findings may prove useful for scholars and observers in other policy realms as well.

Organization

Before delving into these questions, background must be established. Chapter Two provides the context for the research by looking at the history of environmental regulation in the United States – past, present, and future. Such background is crucial to understanding the emergence and the evolution of the relationships between inspectors and facility personnel, providing an appreciation of the context in which the two operated for more than three decades. Since exploring U.S. environmental policy is a huge undertaking that can easily become unwieldy, the chapter is organized around a unifying theme of trust. As indicated earlier, trust appears to be a crucial

component of the next generation environmental policies that attempt to build cooperative relationships between the regulators and the regulated. Chapter Two demonstrates, however, that there has been very little basis for trust in the environmental regulatory system, since it was set up largely under conditions where trust was absent.

After discussing the broad context of environmental policy in the U.S., Chapter Three turns to exploring environmental regulation at the state level and demonstrates the centrality of the states in the implementation of environmental regulation. After establishing the significance of states, the chapter shifts to the importance of front-line workers in environmental regulation. It surveys the sparse literature that exists on the topic and builds a case for why these actors are so critical and merit focused research efforts. Trust, the organizing theme in Chapter Two, also is incorporated into this chapter by exploring its role in the nature of interactions between inspectors and facility personnel.

Chapter Four turns to the practical aspects of researching the relationships among these front-line workers. In particular, I explicitly lay out the research questions that guided the design of the empirical study. Based on the general literature on environmental policy and the limited literature on front-line workers, I offer a number of propositions before detailing how the research was conducted. The chapter also provides information about the research population and sample before elaborating on the data analysis techniques used. The remainder of the chapter discusses the limitations of this research.

Chapter Five details the results from the interviews I conducted with front-line workers throughout Virginia. The chapter begins by providing background information on the individuals interviewed to contextualize the findings. Then the interview findings are presented, organized around four themes: essential elements of “good” interactions, the nature of the actual interactions between inspectors and facility personnel, the presence and significance of trust in the interactions,

and the challenges and obstacles in these interactions. The chapter concludes with an assessment of the research propositions outlined in Chapter Four.

Chapter Six brings together the findings and develops a typology of relationships and trust between inspectors and facility personnel. Although the four categories of the typology are hardly definitive, they provide a good grounding for discussions of the findings as well as a springboard for future exploration of these important yet often overlooked aspects of environmental regulation. From the outset, the research is admittedly exploratory and only the first step to investigating the important relationships between inspectors and facility personnel. The chapter concludes with calls for future research to explore a variety of facets of this topic.

CHAPTER TWO
THE CONTEXT OF ENVIRONMENTAL REGULATION: PAST, PRESENT, AND FUTURE

“Never trusted anyone, let alone myself...”
- Green Day

Modern environmental regulation in the United States has grown rapidly and expanded its reach into many facets of life in a relatively short period of time. Since the birth of the environmental movement in the late 1960’s and the federal government’s foray into environmental regulation, more than 15,000 pages of federal environmental regulations have been promulgated, and the federal government has spent over \$200 billion to protect the environment (Fiorino 2006, 1). The addition of state and local environmental regulations to that figure undoubtedly brings the number of pages of regulations into the hundreds of thousands (Rondinelli and Berry 2000, 170). With the spending of billions of dollars on environmental protection, it is not surprising that a wealth of literature on the state of the environmental regulatory system in the U.S. has emerged (see, for example, NAPA 1997; Davies and Mazurek 1997; Kettl 2002; Durant, O’Leary, and Fiorino 2004). Such assessments of the environmental regulatory system have documented clear improvement in the health and overall condition of the environment, although the character and degree of that progress remain somewhat debatable. These improvement efforts, however, are unquestionably reaching a point of diminishing returns. More specifically, while the health of the environment is continuing to improve, dramatic improvements are no longer being realized. As a result, calls for fundamental changes to the national system of environmental regulation in the U.S. come from a variety of stakeholders.

Unfortunately, there is a disconnect in the discussion of the future of the U.S. environmental regulatory system. The current dialogue fails to adequately consider the past and present state of environmental regulation before prescribing future environmental regulatory structures. Before change can be recommended, it is imperative to understand where environmental regulation has

been and where it is currently. Delving into the massive body of literature on environmental policy in the U.S. is not an easy undertaking and necessitates a clear strategy and organizing focus. The focus proposed here is to consider environmental regulation in the U.S. through a lens of trust.

An emerging thread in the environmental policy literature in the U.S. is trust. Indeed, several scholars (see, for example, Kettl 2002; Fiorino 2004, 2006) expressly mention trust as a fundamental theme in their assessments of the current environmental regulatory system. Fiorino (2006) states that “[t]he issue of trust or lack of it in the old regulation has come up repeatedly” (205). Kettl (2002) notes that among the problems in the current environmental regulatory system “[p]erhaps even more fundamental...is the problem of trust” (184). Although these scholars indicate trust is an issue in the environmental regulatory system, the level at which trust is an issue is not specified. With the attention that the environmental policy literature is already devoting to the explicit mention of trust, it makes sense to examine past and present environmental regulation through the lens of trust before exploring the future of environmental regulation. Therefore, this chapter will proceed as follows: first, an overview of trust will be offered to provide a grounding for using the concept as a lens to explore environmental policy in the U.S.; next, I will review the history of environmental policy to provide the context for later discussions of the importance of relationships in this policy arena; and finally, the chapter will draw connections between trust and environmental policy.

Overview of Trust

Trust is a concept that is apparent in many aspects of life; yet it is hard to define and articulate concisely. Although increasing attention has been given to the concept, a universally accepted definition remains elusive, in part because many different academic disciplines have developed their own conceptions of trust (Kramer 1999, 571; Rousseau, Sitkin, Burt, and Camerer 1998). Scholars in a range of disciplines have endeavored to define trust – from economics to psychology and sociology. For example, economists tend to view trust as a rational calculation to

dictate behavior (e.g. Williamson 1993), whereas psychologists examine trust in terms of attributes of trustors (e.g. Tyler 1990), and sociologists consider trust in relationships among people (e.g. Granovetter 1985) or institutions (e.g. Zucker 1986). Even with these different views, trust is still both a “basic and ubiquitous construct” (Schoorman, Mayer, and Davis 2007, 344).

There are countless definitions of trust (see Kim 2005 for a comprehensive but by no means exhaustive list), and some of the often cited ones merit mention. Gambetta (1988) states that trust is “the probability that [a person] will perform an action that is beneficial or at least not detrimental to [themselves and] is high enough...to consider engaging in some form of cooperation with [another]” (217). Mayer, Davis, and Schoorman (1995) maintain trust is “the willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party” (712). Rousseau et al. (1998) define trust as “a psychological state comprising the intention to accept vulnerability based on positive expectations of the intentions or behavior of another” (395). Shaw (1997) views trust as the “belief that those on whom we depend will meet our expectations of them” (21). Moreover, trust does not simply exist or not exist; rather, it exists in varying degrees along a continuum (see, for example, Thomas 1998).

As these definitions indicate, there are different ways of conceiving of trust and varying components of this nebulous concept. The essential components of trust¹ are (1) expectations of how a party’s actions may impact another party that exhibits trust with the belief toward a party that the other’s interests are taken into account (LaPorte and Metlay 1996; Rousseau et al. 1998; Noteboom 2002; Möllering 2006), (2) risk (since action may be taken if trust is present that ultimately puts one party in a threatening position and the other in a threatened one; Gambetta 1988), (3) vulnerability to another party (Mayer, Davis, and Schoorman 1995), and (4)

¹ The components of expectations, vulnerability and risk were taken from Edelenbos and Klijn (2007), while I added the fourth, interdependence.

interdependence (because trust implies varying degrees of reliance [or the possibility of reliance] on others, Luhmann 1979, Lane 1998).

Each of these components may be considered in somewhat more detail. First, trust is built around expectations, expectations that someone or something will (or will not) act in a particular way; there is no way to know for certain how another will act, so trust must take hold. Second, risk is inherent in trust because the trusting party puts him/herself at risk if the party that is being trusted acts in a manner different than expected. Third, inherent in risk is vulnerability or placing oneself in a potentially weakened position based on trust put in another party. Finally, interdependence is the foundation of trust because if any one person or organization could do everything and be in control of everything, there would be no reason to make oneself vulnerable or at risk based on the expectations of another's behavior.

To apply these components, consider the following example as it relates to environmental regulation. Maplewood Company is regulated because it emits hazardous air pollutants as part of its production process. When the environmental regulator visits the Company, the employees at Maplewood have a choice to make because they have realized they have been unintentionally violating their permit – do they tell the regulator or try to hide it? If they trust the regulator, Maplewood representatives might tell the regulator, even though expectations of what the regulator will do vary. There is great risk and vulnerability to the Company because it is unknown if the regulator will seek to fine it, and the Company is left dependent on the actions of the regulator.

Additionally, the different levels² of analysis at which trust can exist – the micro or individual, the meso or organizational (e.g. Nyhan 2000; Tyler 2003), the macro or interorganizational (e.g. Zaheer, McEvily, and Perrone 1998), and in various combinations (e.g. Dirks and Ferrin 2001) – come into consideration at this juncture. Trust can exist between

² For a more thorough discussion of the different levels of trust, see Noteboom (2002) and Tyler and Kramer (1996).

individuals, between individuals within the same organization, between individuals in different organizations, between an individual and an organization, and between organizations.³ For the purposes of this study, trust is conceived as a condition that necessitates making oneself vulnerable by relying on a person, a group of people, or an organization in expecting a particular outcome.

In part because of the different fields that have contributed to the literature on trust, there are numerous ways to categorize it. These categorizations of trust, however, are generally of two kinds: trust as calculative and rational or trust as noncalculative or nonrational (Ruscio 1999). Rousseau et al. (1998) describe calculative trust as trust based on rational decision-making with an emphasis on utilitarian considerations in determining whether to grant trust. Noncalculative or nonrational trust is trust derived from a suspension of self-interest in favor of more collective orientations (Lane 1998). The latter view essentially portrays trust as more than simply a rational calculation in which an individual determines what is in his or her best interest; instead, that individual takes much more into consideration than just economic exchange. Ulsaner (2002), while rejecting a strictly calculative view of trust, uses the example of emergency situations in which people frequently trust total strangers without any real basis for that trust. Moreover, this conceptualization of trust allows for norms, values, and context to influence behavior (Ruscio 1990). Although the former view of trust is often asserted, Fichman (2003) concludes there is no evidence of the rational, self-interested person in trust dynamics, and such a model of trust is systematically violated when tested empirically.⁴

It also is valuable to examine what the presence of trust can contribute to a given situation. Drawing on an array of literature, Rousseau et al. (1998) maintain that trust can enable cooperative

³ The word “can” is used because there are varying perspectives regarding the different situations in which trust exists. For instance, Hardin (1998) argues that there cannot be trust between an individual and an organization because trust exists at the individual level only. Levi (1998) maintains as well that trust cannot exist between individuals and organizations, but “trustworthiness” can exist between the two (80).

⁴ For additional arguments for and against a calculative view of trust, see Noteboom (2002).

behavior, reduce harmful conflict, decrease transaction costs, facilitate the formation of groups, and promote effective response to crisis. Related to organizations, McEvily, Perrone, and Zaheer (2003) found that trust has direct effects on communication, conflict management, negotiation, satisfaction, and performance. Trust also can reduce uncertainty (Clegg and Hardy 1999, 424). Each of these effects of trust can have a direct impact in the relationships of individuals, and the notion of relational trust is vital in the broader discussion of environmental regulation – a system of regulation built on relationships.

The notion of relational trust surfaced in response to concerns that conceptions of trust were limited and based solely on a calculation of risk without taking into consideration other factors (e.g. social aspects) that influence trust (Kramer 1999, 573). Mayer et al. (1995) drew attention to this limitation in the conception of trust by arguing for a relational view of trust since trust occurs within relationships. Relational trust “emerges in real interactions with distinct others in the here and now” (Weber and Carter 2003, 48). In their assessment of the trust literature years later, Schoorman et al. (2007) conclude that the work that has followed their model “has accepted the view that trust is based in relationships” (345). “A common feature of [relational trust] models is their broader emphasis on social rather than purely instrumental (resource-based) motives driving trust behavior...” (Kramer 1999, 574). Relational trust is trust that forms through the repeated interactions between people over time (Rousseau et al. 98). This view of trust is important in considering environmental policy through the lens of trust because it is the conception of trust that scholars such as Kettl and Fiorino employ when linking trust and environmental regulation.

Relationships form the basis for regulations – environmental or otherwise. Numerous actors are involved with environmental protection, including legislative bodies; governors; presidents; federal and state judiciaries; federal, state, and local government agencies; representatives of the regulated communities; advocacy groups; and the general public. Accordingly, countless

relationships develop. Regulations are enacted by government to dictate behavior of individuals and organizations. In order to enforce these regulations, government regulators check compliance through a variety of means, including physical inspections and random searches. Compliance with regulations, thus, must be ensured through interactions with individuals and organizations. Compliance with government regulations requires at least minimal levels of cooperation. Kagan (2004) remarks that “[e]ffective regulation...requires whatever blend of rules and exhortation, threat and education, toughness and compromise...[to] best induce particular regulated enterprises to cooperate” (221).

The literature clearly demonstrates that cooperation is enhanced by trust (see, for example, Bachmann 2001; Hardy, Phillips, and Lawrence 1998). Over time, as the size and scope of regulations have shifted from direct observation to other forms of monitoring, Reiss (1984) notes that trust has become a crucial part of regulations and ensuring compliance. Regulators cannot rely only on strategies of surveillance because of the growth of the regulatory state, so they must rely as well on strategies of trust. Presumably, this is the starting point for comments such as those by Kettl and Fiorino when they mention trust as a fundamental component in environmental regulation. As the next section will demonstrate, strategies of environmental regulation have gone from direct observation and monitoring to more indirect means of ensuring compliance due to the ever-expanding size and scale of environmental regulations.

Environmental Regulation in the United States

Environmental regulation in the U.S. evolved following the birth of the modern environmental movement. A variety of approaches have been employed in U.S. environmental policies; however, the pervasive approach is command and control policies that attempt to change behavior through the imposition of explicit external controls (Dietz and Stern 2002, 4). This type of regulation has been practiced throughout the history of environmental protection in the United

States. While examining environmental regulations, it is worth considering the effects of these various instruments on the dynamics of trust embedded in this policy arena. Additionally, it is vital to think about the different relationships among a wide range of actors and the nature of trust in these relationships. Thinking about the history of environmental regulation in the U.S. involves contemplating several relationships: (1) the relationship between the government regulatory agency and the regulated organizations; this relationship can be thought of on an organizational level (e.g., a state environmental protection agency and a manufacturing firm) as well as an individual level (e.g., an EPA official and a chemical company's compliance officer); (2) the relationship between citizens and regulated organizations (e.g., a local citizen group and a waste management company); and (3) the relationship between the citizenry and the government regulatory agency (e.g., an environmental group and the EPA).

Widespread environmental regulation was not the norm during the first part of the 20th century in the U.S. Environmental regulation at that time was limited primarily to local policies protecting public health; state and federal policies were even less frequent (Sussman, Daynes, and West 2002, 20). Several presidential executive orders dealt with issues of land use and national parks, but the federal government and, in particular, President Dwight Eisenhower, asserted that pollution and environmental quality were state and local responsibilities (Sussman et al. 2002, 4, 20). Hoffman (2001) demonstrates that prior to the 1970's, there was a widespread belief on the part of industry that it could deal with any pollution problem, and "government intervention was unnecessary" (12). A consensus existed that industry could handle pollution problems and government involvement was unnecessary, thereby exhibiting a degree of trust between the two actors. If trust was not present between the two, governments arguably would have had a greater propensity to take action as a means to ensure the behavior of the regulated community instead of leaving it to the discretion of the regulated.

In the late 1960's and 1970's, however, the federal government assumed a larger role in environmental regulation. Fiorino (2006) notes three dominant reasons for the expansion of the role of the federal government: (1) the cross boundary nature of pollution, (2) the lack of will and capacity in the states to effectively address environmental problems, and (3) the pervasive fear that lax environmental standards in each state would be used as a way to promote economic growth and development. In addition, the increasing focus of the public on environmental issues and concerns, gains in scientific knowledge, and the realization of significant interstate variation of environmental regulation also propelled federal involvement in environmental regulation.

Between 1964 and 1979, Congress passed, or significantly amended, more than two dozen laws to protect the environment, and federal agencies issued hundreds of administrative regulations (Kubasek & Silverman 2000, 123; Sussman et al. 2002, 21). These federal laws brought about changes in the roles of the states in environmental protection. In this new political environment, states were in the operational role of environmental protection - called upon to implement the new federal laws (Plater et al. 1998, 316).⁵ The federal agency established to protect the environment, the Environmental Protection Agency (EPA), was designed to assist the federal government in fulfilling its new role (Yandle 1989, 7; Plater et al. 1998, 316; and Sussman et al. 2002, 5).

During this period, the regulated community looked toward the EPA for “the definition of their environmental responsibilities” (Hoffman 12). Here, a change in the relationship between government and the regulated community is clear. No longer was the regulated community perceived to be self-reliant. Rather, the regulated now relied on the national government to define environmental problems and prescribe solutions. As a result, it can be argued that some degree of trust between the two actors eroded during this time as the regulated community became more dependent on the government. Additionally, as evidenced by the large number of environmental

⁵ A more detailed discussion of the role of federalism can be found in Chapter 3.

laws, it could be argued that the federal government and the citizenry no longer trusted the regulated community to deal with environmental problems the way they once had. After all, a major impetus for many major environmental laws was public demand to curb the practices of the regulated community.⁶

The 1980's saw major changes in environmental protection. Sussman, Daynes, and West (2002) outline several of the defining characteristics of the period, including greater reliance on administrative decision-making as opposed to legislative action and little additional legislation, decreases in federal funding, less emphasis on enforcement, and the mobilization of industry to “curb the growth of environmental legislation” (22). Essentially, these changes can be attributed to growing concern over the cost of environmental regulations; during the explosion of environmental regulations in the previous decade, there had been little concern over cost and now the tide was shifting (Kubasek and Silverman 123).

Many of these changes occurred under President Ronald Reagan's administration. Reagan reduced the size and funding of the EPA and relaxed many environmental regulations and enforcement mechanisms (Kubasek and Silverman 124). Increasingly, the White House and Congress began to pressure federal agencies to pay more attention to economic considerations as they related to the environment, because it was commonly thought that “the congressionally mandated procedures for standards were ‘too often insensitive to costs’” (Rosenbaum, 1998, 158). The “...relationship between government and industry in these early days was largely one of conflict” (Fiorino 2006, 43).⁷ These criticisms are evidence of decreasing levels of trust in this policy arena: many elected officials and others believed the regulations were no longer appropriate. When the trust various actors have towards others diminishes, criticisms frequently ensue and debate rages.

⁶ In addition the increasing calls for environmental regulation could have reflected the increased knowledge about the causes and effects of pollution.

⁷ “Early days” refers to the 1970's and early 1980's.

During the 1990's there was renewed interest in environmental policy and protection, particularly under President Bill Clinton (Kubasek and Silverman 124-125, 128).

The [Clinton] Administration also pushed strongly for “reinventing environmental regulation” that would help address some of the most persistent criticisms of environmental policy, such as its high cost, burdens on industry and state and local governments, inflexibility, and inefficiency (Kraft 2007, 106).

The federal government began attempting to reduce the regulatory burdens on states and localities, and the federal courts began to question long held views on national regulatory authority (Sussman et al. 2002, 22). These changes also indicate shifts in the levels of trust between actors. Although citizens still viewed government as instrumental in establishing measures to protect the environment, the level of government they trusted to undertake environmental protection had shifted somewhat from the national back to the states.⁸

The start of the 21st century included another shift in environmental regulation in the U.S. The George W. Bush administration clearly signaled a change in the environmental agenda; it has “pushed a pro-growth and development agenda, especially on the extraction and use of natural resources” (Fiorino 2006, 54). Much criticism has been levied at the Bush administration for the environmental policies it has advocated, which have tended to favor growth and development over environmental protection (see, for example, Vaughn and Cortner 2005 for a more comprehensive examination of the Bush administration’s environmental policies and initiatives). For instance, efforts have been made to revise the New Source Review (NSR) component of the Clean Air Act and to relax earlier efforts to reduce mercury emissions. Although the Bush administration has signaled a shift in environmental regulation, the “roll-backs” that frequently are cited are not nearly as severe as those enacted during the Reagan presidency (Fiorino 2006, 54-55).

⁸ Chapter 3 discusses the role of the states in environmental regulation.

First-Generation Environmental Policy: Command and Control Regulations

Throughout the history of environmental regulation in the United States, one particular regulatory tool has dominated the policy arena – command and control regulation. It is this strategy that has become synonymous with the phrase “first generation environmental policies.” Command and control implies a top-down model that is heavily centralized (Hoffman et al. 2002, 821; Kraft 2001, 202-203).

Under command and control, government agencies develop a set of rules or standards. These determine technologies to be used or avoided; amounts of pollutants that can be emitted from a particular waste pipe, smokestack, or factory; and/or the amounts or kinds of resources that may be extracted from a common pool such as a fishery or a forest. The agencies issue commands in the form of regulations and permits to control the behavior of private firms, other government agencies, and/or individuals (Dietz and Stern 2002, 3).

Command and control regulations are premised on several key assumptions that indicate a great deal about the nature of the relationships that are likely with the utilization of this regulatory strategy. First, environmental protection is assumed to be fundamentally at odds with the economic interests of firms; therefore, there is a zero-sum game between environmental protection and economic interests. As a result, if a firm is to comply with environmental regulations, it will hurt its bottom line. Second, government agencies are assumed to be in a position to devise environmental goals and policies to achieve those goals, including the determination of production methods and the best available control technologies that should be employed. Ultimately, command and control regulations are based on a rules and deterrence strategy of regulation; rules are made by the regulators, and the rules will be complied with the simple reason that there are consequences if they are not followed.

Most of the major environmental legislation in the U.S. is based on command and control regulation. As stated earlier, these statutes have resulted in dramatic improvements in the health and overall condition of the environment (see, for example, Davies and Mazurek 1997; Andrews 1999; Kraft 2007). Significant reductions in major air pollutants have been realized, and many harmful

pollutants have been all but eliminated (e.g. lead, CFCs). In addition to improving the environment, one other key result is pertinent to the study of relationships and trust. King (2006) and Fiorino (2006) note that adversarial relations between actors in environmental policy have proliferated under command and control regulations. Ultimately, first generation policies “...generated distrust, created barriers to communication and innovation, and built a system full of transaction costs” (Fiorino 2006, 28).

Fiorino (2006) outlines five key limitations of this kind of regulation. First, command and control regulations impede innovation because they prescribe specific environmental goals and processes to achieve these goals; there is no incentive to go beyond compliance with regulations. For example, if a company is emitting 1.8 tons of nitrous oxides (NO_x) and its environmental requirements are to emit no more than two tons of NO_x, why would the company bother to try and reduce its emissions? In fact, the company may decide to expand its operations to emit a full two tons as its permit allows.

Second, command and control regulations are inflexible, legalistic, and fragmented. As previously mentioned, these regulations set specific standards and often particular ways of achieving those standards, leaving little room for flexibility or innovation. Regulated companies have few, if any, incentives to try new methods of reducing their pollution levels because of a regulatory system built around rules that, if violated, will land a company in court faced with an assortment of charges and fines. Additionally, these regulations generally are media specific (e.g. focusing on air, water, or waste) and fail to account for entire ecosystems.

A third limitation is that command and control regulations can be expensive. Frequently, achieving specific environmental goals is costly. Specific technologies can be expensive, as can adopting particular production processes and recordkeeping. This criticism is often the most

pervasive and widely supported. Many firms fail to comply with environmental regulations because it is simply more cost effective not to do so.

Fourth, command and control regulation is becoming increasingly irrelevant to many environmental problems and is therefore ineffective. The nature of environmental problems has changed dramatically in the last 30 plus years. No longer are rivers frequently glowing or on fire; rather, it has become much more difficult to pinpoint the causes of environmental problems, such as the loss of biodiversity, and to design solutions. The strategies that are advocated for curbing environmental problems also are changing. Initially, the aim was simply to contain waste and other pollutants; now the focus is shifting to preventing pollution before it happens (Fiorino 2006, 81). Regulations that were designed to dictate what to do with hazardous wastes after they were generated have little to do with helping companies reduce waste generation in the first place.

Finally, command and control regulations are challenging to implement – and not just for those that are regulated. One of the underlying assumptions of command and control regulation was that government “knew it all” and could dictate environmental standards and means of achieving those standards; that has proven far from the case. Technology changes rapidly as do the environmental challenges, and the time that it takes to pass legislation and promulgate regulations often cannot keep up with those changes. Moreover, Rosenbaum (1998) has outlined three specific enforcement problems. First, regulated firms frequently turn to litigation to work out problems with the regulations, and that can create an “enforcement nightmare.” Second, command and control regulations depend heavily upon self-monitoring and reporting by the regulated community due to the sheer volume of regulations. The often less than adequate government compliance and enforcement staff amplifies the need to rely on self-monitoring. Third, those government personnel who enforce command and control regulations have a significant amount of administrative discretion when determining compliance, and that power can be abused (Rosenbaum 187).

The effects of command and control regulation relate to trust in several different ways. First, command and control regulations arose out of a lack of trust between government and the citizenry,⁹ on the one hand, and industry and other regulated organizations, on the other. The advent of modern environmentalism was marked by a shift from relying on industry to deal with pollution problems to having government at the forefront (see Hoffman 2001). This change was marked by widespread public outcry about the health of the environment. Second, as command and control regulations have come under heavy criticism, the trust citizens once placed in them to protect the health of the environment is no longer as pronounced. Instead, it could be argued that many citizens no longer trust these regulations to protect and ensure the health of the environment the way they once did. Williams and Matheny (1995) contend that the public has a “deep distrust of the regulatory apparatus” when it comes to hazardous waste regulations (93). It is arguable whether the regulated community has ever trusted command and control regulations themselves to protect the environment and the officials responsible for creating and implementing them.

Public opinion regarding environmental protection in the U.S. is worth considering since opinion on policy issues provides a way to ascertain citizens’ degree of trust as it relates to a particular issue. In a recent Harris Poll, nearly half of the respondents said, “there is too little government regulation and involvement in the area of environmental protection” (Harris Poll #77, October 13, 2005 Press Release). These results are consistent with polls conducted over time regarding Americans’ perceptions about government’s role in environmental protection. One might conclude that Americans do not trust government when it comes to environmental protection if they consistently say government needs to do more. Or, one may infer that Americans want government to do more to protect the environment, because they do not trust the regulated community to protect the environment without government intervention. Both interpretations

⁹ See Nye, Zelikow, and King, eds. (1997) for a more thorough discussion of the decline of public trust in government.

highlight deep concerns about trust.¹⁰ In March 2005, Gallup asked Americans¹¹ which levels of government they thought would best protect the environment. Respondents were asked: “please tell me how much you trust each of the following to protect the quality of our nation’s environment.” The results, as conveyed in Table 2.1, were mixed.

**Table 2.1
Americans’ Level of Trust in Organizations to Protect the Environment**

	GREAT DEAL	MODERATE AMOUNT	SLIGHT AMOUNT/NONE AT ALL
National Environmental Organizations	25 percent	42 percent	30 percent
Local Environmental Organizations	26 percent	43 percent	28 percent

Source: Carlson 2005, 21.

When the same poll asked about trust in national and state environmental agencies to protect the environment, responses again were mixed (see Table 2.2).

**Table 2.2
Americans’ Level of Trust in Federal & State Agencies to Protect the Environment**

	GREAT DEAL	MODERATE AMOUNT	SLIGHT AMOUNT/NONE AT ALL
Federal Environmental Agencies like the EPA	22 percent	42 percent	32 percent
State Environmental Agencies	16 percent	48 percent	34 percent

Source: Carlson 2005, 21.

More broadly, Americans are fairly split on the levels of trust and confidence they have in the national government to handle problems. According to a Gallup Poll conducted in September 2005, 53 percent of Americans responded that they trust the national government to handle “domestic problems,” while 46 percent did not (Moore 2006, 46).¹²

¹⁰ An additional interpretation may be simply that these poll results are pointing to environmental problems.

¹¹ These results are from a nationwide telephone poll conducted 7-10 March 2005 with 1,004 adults over the age of 18.

¹² These results may reflect the low approval ratings of both Congress and the Presidency. Unfortunately, more recent polls were not available after the 2006 mid-term elections.

With all of the criticism of command and control regulation, alternative proposals inevitably have emerged. The most frequently suggested alternative is the utilization of market-based instruments for environmental protection.

Alternatives to Command and Control: Market-Based Instruments, Voluntary Initiatives, & Collaborative Strategies

One of the most common threads among the arguments for an alternative is the search for tools that consider costs (Sussman et al. 29). Market-based instruments are one such alternative. “Market-based instruments are regulatory devices that shape behavior through price signals rather than explicit instructions on pollution control levels or methods” (Hockenstein et al. 1997, 14). Stavins and Whitehead (1997) state that market-based instruments

provide incentives for businesses and individuals to act in ways that further not only their own financial goals but also environmental aims such as reducing waste, cleaning up the air, or reducing water pollution (105).

Although their use has been part of the environmental policy landscape for almost as long as modern environmental regulations have been in place in the U.S., a steady shift toward these tools became evident in the latter part of the 20th century (Kubasek and Silverman 125; Hockenstein et al. 1997, 12).

Many types of market-based instruments exist. Some examples include tradable permits, deposit refund systems, pollution charge systems (which charge per unit of pollution), and the elimination of government subsidies (Stavins and Whitehead 1997, 106-109 and Hockenstein et al. 1997, 14). Not only are market-based instruments more cost effective according to their proponents, but they also provide incentives for technological innovation and the diffusion of that new knowledge (Hockenstein et al. 1997, 15).¹³

¹³ Of course, there is some debate about whether or not such “economic solutions” to environmental problems are even appropriate (Rosenbaum 1998, 157).

Thus far, however, these tools have had a mixed record of success. “Even those analysts who have been among the strongest supporters of market-based environmental tools, however, recognize their limited achievements to date” (Kraft 2001, 204). Although market-based instruments generally have failed to meet the initially high expectations, they have “produced attractive results and promise additional benefits” (Hockenstein et al. 1997, 12). Stavins and Whitehead (1997) come to a similar conclusion: market-based instruments have worked well in some limited cases (105).

If market-based instruments are so often touted as such promising alternatives to command and control regulation, why have their results frequently been less than stellar? Hockenstein et al. (1997) advance three explanations (18-19). First, predictions about the success of market-based instruments have been unrealistic because they failed to account for a variety of factors that exist in the “real world” that do not exist in the ideal conditions the predictions are based upon. Second, market-based instruments thus far have been flawed in their design and implementation, which limits their success (Kraft 2001, 205). Last, numerous organizational features impede the success of such instruments, such as internal structures, management practices, and lack of expertise. Stavins and Whitehead also point to another reason: obstacles have been “thrown up by the regulated” community (Stavins and Whitehead 1997, 105). For instance, the regulated community has been somewhat ambivalent about the adoption of market-based instruments and has undermined their use; although in theory the regulated community demands flexibility, in reality it often hesitates to promote any new (and unpredictable) form of regulation (see, for example, Stavins and Whitehead 1997, 105; Hockenstein et al. 1997, 15-16). Additionally, many regulated firms are concerned that instruments, such as tradable permits, would convey an image to the public that the firm is “buying the right to pollute” (Hockenstein et al. 1997, 18).

Aside from the firms' perspective, government agencies also have not fully embraced the use of market-based instruments. If there were more widespread adoption of market-based instruments, government regulators would need a different set of skills, and some contend that current regulators simply do not want to make themselves obsolete (Hockenstein et al. 1997, 15). Clearly, a deeply entrenched culture is predisposed to command and control rather than market-based regulations (Rosenbaum 1998, 170).

The role of trust and relationships with market-based instruments is different than with command and control regulation. With market-based instruments, trust is implicit, not necessarily in government but in the "market" to ensure environmental protection. The government, the citizenry, and the regulated community must trust markets to reach equilibrium between cost and environmental pollution. Trust, both in government and in the regulated community, is not as pronounced because neither is relied upon directly to protect the environment. In terms of relationships, there is less emphasis on the role of government, and therefore on the relationships between government and the regulated. Additionally, there is greater stress on the relationship between citizens and the regulated facilities because citizens (in theory) ultimately dictate the actions of the market. For example, if citizens are displeased with actions of a particular tire manufacturer and the manufacturer's environmental compliance history, then they are expected to express their disapproval by purchasing tires from other manufacturers.

In light of these considerations, where does that leave the debate surrounding improvement of environmental regulation in the United States? Clearly, both command and control regulations and market-based instruments have problems. What then might be done to make environmental regulation better? More recently, other noncoercive strategies have been discussed, including voluntary initiatives and collaborative strategies. These might be argued to be approaches that attempt to restore trust among the various actors involved in environmental regulation.

Voluntary initiatives, for instance, have widespread appeal. In essence, such strategies attempt to encourage the regulated community to seek ways to improve its environmental impact without rigid governmental enforcement. Wilbanks and Stern (2002) contend that these initiatives “allow for a decentralization of decision making to actors who are in the best position to evaluate what works for them” (337). Examples of voluntary initiatives include environmental management systems/ISO 14001, pollution prevention (P2), and life cycle analysis/supply chain management (Rondinelli and Berry 173-179).

An environmental management system (EMS) is a systems-based approach to managing and improving environmental performance. It is based on a plan-do-check-act model that emphasizes continual improvement and addresses both short term and long term impacts of a firm’s operation on the environment. Firms that implement an EMS can seek third party certification of their EMS through ISO 14001 certification, and this certification may give a firm a competitive advantage in the marketplace.¹⁴

ISO 14001 defines an approach companies could take to monitor and manage their environmental impacts with an eye on improving efficiency, reducing waste generation and pollution, and reducing liabilities (NAPA 31).

EMSs typically spur firms to go beyond minimum regulatory compliance and significantly reduce their environmental impacts (Rondinelli and Berry 2000, 173). It is important to note, however, that adoption of an EMS or even achieving ISO 14001 certification does not mean that a firm does not pollute; rather, it simply has a system in place to address environmental impacts.

EMSs may coincide with pollution prevention (P2) efforts because an EMS encourages firms to continually examine their operations and seek ways to reduce negative environmental impacts. Adoption of EMSs and P2 practices have numerous alleged advantages, including increased

¹⁴ There is some evidence that a competitive advantage may result after ISO 14001 third party certification; however, that evidence is mixed and plagued with questions about determining what exactly is a “competitive advantage” (see, for example, Coglianese and Nash 2001).

efficiency, cost savings, improvement of ethical image, and reduced legal liabilities (Rondinelli and Berry 180).

Life cycle analysis and supply chain management encourage firms to look more broadly at the products that they utilize in their production processes and the products they produce. In terms of products used in production, firms are encouraged to pay closer attention to how those products are produced and how the physical environment may be impacted by production processes at a supplier's facility. Many firms, including major automotive manufacturers in the U.S., increasingly have become involved in supply chain management and have mandated that all of their suppliers implement EMSs and seek third party certification. Life cycle analysis is related and promotes consideration of how a firm's product is disposed of and the extent of the product's impact on the environment after its useful life has passed.

Voluntary initiatives require trust from the government and the citizenry in the regulated community because it is up to companies to adopt, implement, and maintain the integrity of the various initiatives they adopt. For example, a firm can adopt an EMS and have it certified; however, if the firm does not constantly strive for improvement in ways that are consistent with the ideals of EMSs, then it becomes easy to argue that the firm has adopted the EMS for the sake of appearances rather than out of a desire to protect the environment. Thus, trust must exist in the firm to adopt an EMS and vigorously maintain it.

Another alternative strategy involves collaborative efforts that bring together multiple stakeholders in environmental protection as a means to utilize more informal mechanisms in resolving disputes and establishing rules and regulations.

[T]he collaborative phenomenon is a pragmatic attempt by participants in environmental politics to come up with institutional arrangements that are more effective at resolving the complex regulatory dilemmas found in a traditionally adversarial policy arena (Weber 1999, 144-145).

Instituting collaborative efforts has numerous advantages, including time savings for both decision making about and implementation of new practices, behavioral transformations by the regulated, less litigation, and better methods of problem solving that result in higher quality solutions because all players are involved. There also may be greater communication, greater potential for innovation and cost effectiveness, increased transparency and, therefore, legitimacy (Weber 1999, 124-127). Among the pitfalls to the utilization of collaborative strategies, however, are some citizens' suspicions of the strategy, questions of access to the collaborative process by all stakeholders, concerns about accountabilities, and institutional barriers to government agencies giving up their traditional roles (Weber 1999, 135-138 and Hoffman et al. 2001, 831-839).¹⁵

Such alternatives to command and control regulations¹⁶ and market-based instruments approach environmental protection from a more collaborative and inclusive perspective. As a result, they appear more likely to build trust among the parties in this policy arena. Two major concerns are associated with these approaches, however. First, they remain largely untested; in the few cases where some of these strategies have been implemented, not enough evidence exists to answer the question of their likely success at improving environmental outcomes. Second, and more importantly, these approaches would require major changes in the current environmental regulatory regime, and there is substantial and well-founded concern that the levels of distrust in the regime would impede efforts to make such shifts.

Trust and relationships factor into different voluntary initiatives in ways unlike they do with command and control regulations or market-based instruments. First, trust is of greater significance

¹⁵ More specifically, collaboration opportunities may only include certain stakeholders and be guided by predetermined objectives by key actors in the process.

¹⁶It is important to note that there is not uniform agreement that these "next generation" policies are more desirable than existing command and control regulations. In terms of performance and outcomes, attempts at various next generation policies have produced decidedly mixed results (see, for example, Andrews, Amaral, Darnall, Gallagher, Edwards, Huston, D'Amore, Sun, and Zhang 2003; Coglianese and Nash 2001). There is some concern that greater flexibility will enable the private sector to effectively control environmental regulation instead of the government (see, for example, Coglianese 1999).

with voluntary initiatives because the regulated firms are trusted to take action to improve their own environmental performance without the direct control of government. Second, the relationships between regulator and regulated change dramatically with these strategies, because the dominant authority figure (the regulator) is no longer in that role when more collaborative relationships are utilized to achieve environmental goals. At least on the surface, voluntary initiatives and collaborative strategies promote more partnership and trusting relationships than do command and control regulations or market-based instruments.

Relationships in the Environmental Regulatory System

As the environmental regulatory system continues to shift over time, one facet remains constant – the importance of the relationships among the actors involved in environmental protection. No single party can achieve environmental protection alone. Governments can set standards and expectations, but they are not the primary cause of pollution. Various companies can form their own views on environmental protection and take their own actions, but they alone cannot change the course of the environmental regulatory system in the U.S. The same holds for citizens and interest groups.

It is at the relationship level that trust enters into play. All the actors in the environmental regulatory system are interdependent with one another, they have expectations of one another, they put themselves at risk, and they are vulnerable to each other.

The future of environmental regulation in the U.S. hinges on these relationships. First generation policies of command and control regulation are slowly giving way to second generation policies that embrace voluntary practices and other collaborative strategies (see, for example, Durant et al. 2004; Coglianese and Nash 2001). However, the regulatory system is marred by its history; “[c]onflict and mistrust were standard features of environmental policy making in the early days” (Fiorino 2006, 48). The widespread acknowledgement of the conflict-ridden, adversarial

relationships has led many scholars (see, for example, Kettl 2002; Fiorino 2006; Eisner 2006) to conclude that “[u]nfortunately, the relationships between the regulated and the regulators are permeated by distrust” (Eisner 2006, 177). This lack of trust has profound consequences. Fiorino (2006) articulates three significant consequences of distrust (205-206). First, distrust is an obstacle to dialogue, communication, and innovation. Second, it increases transaction costs. Third, distrust stifles focusing on environmental performance while directing attention instead to narrow issues of compliance. It is important to discern where in the environmental regulatory system the lack of trust lies – among bureaucrats, elected officials, the regulated community, environmental groups, or with others.

Conclusion

The discussion of the history of environmental regulation in the United States through a lens of trust enabled a focus on the essence of environmental regulation – the relationships among the different actors. The recent literature on environmental regulation in the U.S. argues that trust is missing and this contention is particularly problematic as the environmental regulatory system shifts and embraces second generation environmental policies or at what level trust is missing. Unfortunately, to date the literature has not systematically explored these contentions or at what level trust is missing. After reading recent works on environmental policy, it is reasonable to conclude that there is little trust in the regulatory system. Before exploring this issue empirically, I first consider the different, vital relationships in environmental policy, and in particular the most often overlooked actor, the front-line worker.

CHAPTER THREE
THE SIGNIFICANCE OF FRONT-LINE WORKERS IN ENVIRONMENTAL REGULATION

“There’s got to be someone we can trust...”
- The Wallflowers

After examining the larger context of federal environmental regulation in Chapter Two, I narrow the focus in this chapter to the role and significance of front-line workers in environmental regulation. Much of the implementation of environmental regulation occurs at the state level with individuals in both the public and private sectors working to make environmental protection happen. Those at the front-lines in the public sector are environmental compliance inspectors. They typically are lower-level state government employees tasked with monitoring all sorts of facilities for compliance with both federal and state environmental laws. Meanwhile, at the front-lines of environmental regulation in the private sector are those individuals in particular facilities charged with the responsibility of maintaining compliance with environmental regulations. These private sector workers include numerous individuals with diverse backgrounds, knowledge, and positions in a regulated facility. This chapter first discusses state level environmental regulation before shifting to the significance and role of front-line workers in environmental regulation.

Environmental Regulation and the States

As Lowry (1992) succinctly states: “[s]tates matter. Policies are not simply created by national officials and then routinely implemented by state and local governments as if they were unquestioning automatons in some Weberian machine” (3-4). In other words, states are not simply the puppets of the federal government and do all that the federal regulations dictate they do. Instead, states are heavily involved in regulation because of their position in between the regulated facilities and the federal government.

As the last chapter noted briefly, states have played varied roles in environmental protection. Initially, states and localities were the entities that dealt with environmental matters, and they did so

long before the federal government became involved. The primary role of the states changed in the late 1960's and early 1970's, however, when the federal government engaged in environmental regulation for many reasons, including the belief that states were "...unable to take a serious role in environmental policy" (Rabe 2006, 34). Since the creation of federal environmental regulations, the federal government has largely dictated environmental standards and delegated to the states the authority for ensuring the standards are met.

As states have been granted more and more authority for meeting federal environmental standards, their responsibilities have grown. "Consequently, the operational responsibility for most of EPA's major programs currently lies with the states, and EPA routinely relies on states to implement the full range of environmental responsibilities associated with these" programs, such as the Clean Air Act and the Clean Water Act (GAO 2002, 4). These broad authorizations have given the states "considerable latitude" in environmental regulation (Sigman 2003, 108). EPA promulgates regulations (particularly for air pollution control and hazardous waste handling) and then delegates authority to implement and monitor these programs to the states. EPA delegates authority after approving various types of agreements and plans submitted by the states outlining how they will meet EPA standards.

Several indicators depict the scope of state involvement in environmental regulation. The Environmental Council of States (ECOS) reports, for example, that the states regulated over 1.75 million sites, inspected those sites more than 500,000 times and made over 449,000 additional compliance evaluations in a single year (ECOS 2001).¹ According to Rabe (2006), the states

collectively issue more than 90 percent of all environmental permits, complete more than 75 percent of all environmental enforcement actions, and rely on the federal government for less than 25 percent of their total funding on environmental and natural resource concerns. Many areas of environmental policy are clearly dominated by states, including most aspects of waste management, groundwater protection, land use management, transportation, and

¹ Unfortunately, more recent data are not available from the ECOS on the numbers of regulated facilities and inspections conducted by the states.

electricity regulation. Even in areas that bear a firm federal imprint, such as air pollution control and pesticides regulation, states have considerable opportunity to oversee implementation and move beyond federal standards if they so choose (35-36).

Further, the states have collected over 94 percent of the data in EPA's databanks on environmental protection (Eisner 2006, 36). Thus, "[i]t is no exaggeration to conclude that policy depends on the capacity and willingness of individual states to implement federal policy" (Eisner 2006, 36).

As might be expected, the states have adopted various ways of meeting their federal obligations. Most states have at least one state agency devoted to environmental matters. Not only do states implement federal regulations, they increasingly set their own environmental standards as well as establish and maintain a host of environmental programs (Teske 2004, 165). States employ hundreds – and in some cases thousands – of government employees of all ranks and positions to handle environmental protection. With this wide range of tasks, vast numbers of employees and millions of dollars in annual expenditures, it would be reasonable to expect that state environmental regulation has been well studied and understood; however, the opposite is the case (Teske 2004, 8, 166). Most of the study of environmental regulation has been at the federal level with little attention extended to the states (with a few exceptions) and even less to those front-line workers who play a significant role in environmental protection.²

Front-Line Workers in Environmental Regulation

Front-line workers arguably are among the most important actors in environmental protection. They are the ones on both sides of regulation – the regulator and the regulated – that work on a day-to-day basis to put environmental regulations into action. Environmental compliance inspectors work for state environmental protection agencies to monitor regulated facilities in order

² Ringquist (1993), for example, examines why some states adopt more stringent environmental regulations than other states do, focusing on a broader state level examination rather than looking at the front-line workers in state environmental regulation (see also Ringquist 1994). Other scholarship on states and environmental protection focuses on determinants of state expenditures on environmental policy (see, for example, Bacot and Dawes 1997) or concentrates on a particular type of environmental problem and explores differences in state responses (see, for example, Rabe 2004).

to ensure they are in compliance with environmental regulations and to interact with the people at those facilities.³ Front-line private sector personnel are those individuals at a regulated facility who are responsible for ensuring that the facility they work for is in compliance with environmental regulations and dealing with the regulators as needed. Before exploring the interplay of these front-line workers, the roles and responsibilities of each is considered separately.

Environmental Compliance Inspectors

Environmental compliance inspectors are key figures in environmental protection agencies in the current regulatory regime because they are on the front-line in ensuring compliance with existing environmental regulations. In most environmental protection agencies, environmental compliance inspectors specialize in a particular environmental media (or area), such as air, water, or waste. An individual inspector is responsible for an array of facilities that hold a permit to operate and emit specified levels of pollution in a given media. The actual number of facilities for which an inspector is responsible can range from 20 or 30 to several hundred, depending on the type of facility and why it is regulated. The facilities that an inspector is responsible for generally are scattered over a given geographic area and the types of operations can vary dramatically. For example, an inspector may be responsible for inspecting facilities that range from a cigarette producing plant to a metal scrap yard to a dry cleaners. Thus, the inspector must be conversant with the operations and pollution abatement technologies for a wide array of often unrelated facilities.

Perhaps the central component of an inspector's job responsibilities is the physical site inspection of a facility to determine compliance with environmental regulations. "As the word 'inspector' suggests, routine inspections and check visits are the 'traditional' methods of operation for many regulatory officials and ones which are regarded as fundamental by field staff" (Hutter

³ There are EPA inspectors but they serve more oversight roles than state level environmental compliance inspectors do. Additionally, EPA inspectors come in behind state inspectors and audit particular facilities. EPA inspectors also may be called in for facilities for which the federal government is pursuing formal legal charges.

1997, 107). My conversations with inspectors in Virginia across media, verified by EPA training documents for inspectors, portray a fairly uniform approach to the actual inspection. A physical site inspection typically begins when the inspector arrives at a facility, generally unannounced, and makes his/her presence known and requests admittance for purposes of compliance verification. In the unlikely event that an inspector is denied admittance, he/she has the ability to obtain a warrant and secure appropriate law enforcement to accompany him/her on return to the facility. Once on site, an inspector typically informs the facility personnel of the purpose of the visit and goes over anything that merits attention immediately before beginning a facility tour and inspection. After the physical tour and inspection, the inspector reviews the facility's records and a preliminary discussion of the facility's compliance status occurs. After leaving a facility, the inspector is required to draft a formal inspection report that is ultimately sent to the facility after internal agency review.

In addition to the physical site inspections that must be conducted, the inspector has a variety of other duties. Each inspector is responsible for extensive recordkeeping associated with each facility as well as for conducting complaints investigations and attending public hearings and particular enforcement proceedings should the need arise. Along with many others, Hawkins (1984) maintains that out in the field is where the "real work" is done and that paperwork often keeps inspectors from doing the real work.

More profoundly, the inspector serves as a key liaison between government and the regulated facility. As an EPA inspector training manual notes, "[t]he inspector is the personification of the entire agency he/she represents because it is the inspector that knocks at the public's door" (2002, iii). Most of the time, the inspector is the representative of government for a particular facility, and the facility's experiences with government (at least as they relate to environmental protection) are largely the result of the interactions it has with its inspector(s). For example, if an inspector is constantly criticizing a facility over very small compliance details, facility officials more

than likely are going to have rather negative views of government. Additionally, the inspector visits the facility throughout the year, speaks with representatives, reviews and approves assorted reports and data submissions, and is heavily involved in deciding whether or not a particular facility is deemed in or out of compliance with a variety of environmental laws.

All of these responsibilities indicate that environmental compliance inspectors are street-level bureaucrats. Lipsky (1980) defines street-level bureaucrats as “public service workers who interact directly with citizens in the course of their jobs, and who have substantial discretion in the execution of their work” (3). Street-level bureaucrats occupy a critical position in society, and their actions constitute the services of government (Lipsky 3). The actions of street-level bureaucrats are what members of the public often perceive as “government.”

Lipsky’s characterization of street-level bureaucrats is one of the best known discussions on front-line government workers, and other scholars have built upon his work. Maynard-Moody and Musheno (2003), for example, present two different narratives of front-line workers in an effort to articulate the circumstances in which front-line workers function. The “state-agent narrative” is the prevailing narrative, in which the emphasis is on strict adherence to law. The “long tether of hierarchical relationships” binds street-level bureaucrats who are supposed to emphasize rules and procedures (Maynard-Moody and Musheno 10). In contrast, the “citizen-agent narrative” stresses a focus on norms and cultures. In this view, street-level bureaucrats utilize their “street-level discretion, or workers’ adaptations of laws, rules, and procedures to the circumstances of the cases” and are thereby more flexible and adaptive than a rigid adherence to set rules and procedures might allow (Maynard-Moody and Musheno 10).

These two narratives are consistent with the changes that are occurring in the environmental regulatory system. The state-agent narrative is emblematic of the dominant, command and control approach to environmental protection. Under the traditional mode of environmental regulation,

inspectors are tasked with enforcing the stringent regulations that dictate exactly how emissions levels should be reduced, for example. By contrast, the citizen-agent narrative is consistent with next-generation environmental policies. For example, collaborative strategies are indicative of next-generation policies, and they require all parties involved to be flexible. Moreover, the regulators would need to operate in a different capacity – as collaborators instead of enforcers. As might be expected, these two narratives often are in tension with one another, thus exacerbating the challenges facing street-level bureaucrats.

Tension exists because “a great deal of street-level work remains hidden from direct supervision” (Maynard-Musheno and Moody 10). For example, when an environmental compliance inspector is inspecting a facility, he/she is generally conducting the inspection alone and away from any direct agency supervision so he/she has the potential to respond to a particular situation in different ways – some more aligned with the state-agent narrative (e.g., following regulations closely and citing a facility for failure to comply) and some closer to the citizen-agent narrative (e.g., upon finding a minor problem, helping the facility identify its cause and then not writing up the facility for an infraction that can be quickly remedied, such as covering the drums of solvent soaked rags). Because of this ability to respond in different ways to the same situation, street-level bureaucrats are positioned to have profound effects on how the regulated community perceives government as a whole.

Some of the ideas that Maynard-Musheno and Moody discuss regarding the behavior of front-line workers in social policy and law enforcement also can be found in the regulatory literature. Although scholarship on inspectors is lacking overall, and most certainly deficient when it comes to environmental inspectors, some useful observations have been made. Bardach and Kagan (1982/2002), for example, discuss environmental inspectors as part of their larger examination of “regulatory unreasonableness” in the United States. In the lone chapter specifically devoted to

inspectors, they address the characteristics of “good inspectors” by drawing parallels with the literature on “good cops.” According to Bardach and Kagan, an inspector should be adept at resolving disputes and other problems while endeavoring to keep disagreements and difficulties from turning into adversarial relationships; inspectors should have sufficient knowledge and understanding of technical issues. They also should display advantageous personality traits, such as the capacity to empathize with the regulated without being overly zealous, congeniality, reasonableness, cooperativeness, patience and persistence. Ultimately, a good inspector should be able to secure cooperation in order to achieve compliance with laws and regulations (Bardach and Kagan 130).

An inspector’s paramount goal is “responsible social behavior,” according to Bardach and Kagan, and such behavior can be achieved through responsiveness, forbearance, and provision of information (130-150). First, an inspector must be responsive in that he/she is fair to the regulated facility by listening to their explanations and concerns and responding with seriousness and respect.

One premise of the concept of responsiveness is the old assumption that power can be abused: the government might be wrong; the regulations might be overinclusive; governmental officials entrusted with a single altruistic mission might be unduly self-righteous or narrow-minded (Bardach and Kagan 130-131).

Second, an inspector must be able to show forbearance and delay the enforcement of regulations in particular circumstances.

Forebearance [sic] entails: (1) overlooking violations that pose no serious risk under the circumstances; (2) not enforcing regulatory requirements that would be especially costly or disruptive in relation to the additional degree of protection they would provide; (3) granting reasonable time to come into compliance and accepting measures that would provide substantial if not literal compliance; and (4) making allowance for good faith efforts on the part of the regulated enterprise (Bardach and Kagan 134).

Finally, an inspector must supply information to aid in obtaining compliance from the regulated facility. Invariably, regulated facilities have much to learn about what is needed to secure compliance, and the good inspector will help educate facilities on these matters.

Some scholars have attempted to define the different roles inspectors fill. Gormley (1997), based on his work with child care facility inspectors, presents five different roles or types of inspectors. This typology is worthwhile to note because it depicts different kinds of inspectors, all of whom might be considered “good inspectors.” First, an inspector who is a *persuader* will, upon identification of a problem, talk to the facility’s director about resolving the problem immediately. Second, a *fixer* will do what it takes to get a problem fixed immediately upon its discovery with the facility personnel who can fix the problem quickly. Third, a *mobilizer* will enlist various participants to solve problems that were identified in more of a group setting. Fourth, a *bargainer* would stipulate conditions to permit or license renewals to achieve compliance. Finally, after the discovery of a problem, an *enforcer* will return to his/her agency and seek fines and revocation of the facility’s permit or license.

Other work examines how inspectors and regulatory agencies should seek compliance, asking what regulatory style might be adopted and what strategies ought to be employed. While the terminology can vary, the scholarly literature takes two dominant approaches. A compliance or accommodative approach is primarily concerned with preventing violations and fixing any underlying problems that are resulting in non-compliance (Hawkins and Thomas 1984, 13). This approach would foster a more collaborative exchange between the regulator and the regulated in solving compliance issues. In contrast, a deterrence or sanctioning approach to regulation focuses on finding violations and punishing those responsible (Hawkins and Thomas 13). The latter strategy evidently produces an accusatory and adversarial environment that focuses on the specific regulation and ensuring exact compliance with them.

These approaches can be embodied in both an entire agency and the individual inspector, according to the literature. May and Burby (1998) discuss three areas in which a characteristic approach to regulation may be identified: agency practices, agency strategies, and agency

enforcement philosophy. Agency practices are the observable actions of inspectors and others in the field that indicate where on an enforcement spectrum⁴ the parties might be placed. Agency strategies are those actions that an agency pursues to secure compliance with regulations. Finally, at the most abstract level, an agency enforcement philosophy is the underlying orientation an agency adopts to compliance with regulations.

Empirical investigations of compliance approaches find that a mix of styles and strategies may be found at various levels (see, for example, Hawkins 1984; Hutter 1997; May and Burby 1998; May and Winter 2000). While empirical explorations of these approaches do exist, they generally do not focus on the inspector level but rather emphasize how the inspector approaches compliance as a means of discerning the agency's overall approach to compliance and how that approach is implemented by lower level employees (see, for example, Kagan 1994). Focusing on the individual inspector is neglected in order to better understand an agency's overall approach.

As a result, much of the information about inspectors in the regulatory literature focuses on inspectors only insofar as their behaviors provide a way to understand an agency or a particular type of regulation, rather than seeking to understand the inspectors themselves and the significant role they play in regulation. Although existing research has different aims than those of the study here, it is worthwhile to recap some of characteristics of inspectors that the literature sets forth as the exploration of front-line workers in environmental regulation continues. Table 3.1 lists characteristics of "good" inspectors drawn from Bardach and Kagan (1982/2002) and Hawkins (1984), although other characteristics undoubtedly also are important.

⁴ An enforcement spectrum refers to the differences in approaches that might be utilized to ensure compliance, ranging from a strict deterrence to a more accommodative approach. The term spectrum is particularly relevant as these approaches are not an either/or and may be considered as a spectrum rather than two distinct categories.

Table 3.1⁵
Characteristics of a “Good” Inspector

Is able to resolve disputes	Is friendly
Avoids adversarial relationships	Is patient
Avoids zealotry	Possesses knowledge, experience
Is cooperative	Provides information
Empathizes with regulated	Is reasonable
Is Fair	Is reciprocal
Is forbearant	Is responsive

Sources: Bardach and Kagan (1982/2002); Hawkins (1984)

Facility Personnel

Another set of workers are those on the regulated side of environmental regulation. Facility personnel are on the front-lines of interacting with environmental regulators – including everyone from the inspectors to other officials at the regulatory agency (Hutter 1997). Employed by an array of organizations, facility personnel are responsible for dealing with environmental matters on a routine basis. In large, well-established facilities, these individuals are often full-time environmental managers who may have an entire staff or department devoted to compliance with environmental regulations, and they are likely to be well trained in environmental engineering, science, or related fields. At the other end of the spectrum are facility personnel who are responsible for environmental matters as just one of many job duties. Frequently, these individuals do not have extensive backgrounds in environmental matters and may even be the owners of small businesses who shoulder the responsibility for everything the business does. It is extremely difficult to succinctly characterize facility personnel because they are such a diverse group.

While the regulatory literature frequently overlooks front-line government workers, front-line facility personnel are neglected even more. Bardach and Kagan (1982/2002) simply talk about the “good apples” and the “bad apples” that environmental inspectors encounter and provide little elaboration. They do conclude, though, that most of the time inspectors encounter “good apples,”

⁵ The characteristics in Table 3.1 are arranged in alphabetical order.

but the experiences with the “bad apples” tend to sour the experiences for everyone involved in environmental regulation.

Hawkins (1984) focuses somewhat more on the people inspectors interact with, but only insofar as to assert four categories of “images of polluters”⁶: socially responsible, unfortunate, careless, and malicious (110-113). According to Hawkins, most of the time inspectors encounter facility personnel who are socially responsible and are endeavoring to comply with regulations as a matter of principle. Typically, inspectors view this category of “polluters” as helpful and responsive to the demands of regulators. The “unfortunate” group of polluters struggles with compliance because of technical inabilities or the lack of physical or economic capacity to comply. Inspectors tend not to judge facility personnel in this category too harshly, because they appear willing to comply but they lack the expertise or resources to do so. This is not the case with those polluters who are labeled “careless.” This category is reserved for facility representatives that behave as they have historically; sloppy management, incompetence, and inadequate internal controls prohibit them from complying with environmental regulations. The worst category of “polluters” are “malicious.” Those in this category deliberately pollute, and they present the biggest challenge for inspectors.

Although Hawkins’s depictions of “polluters” is somewhat biased and clearly dated, it is useful for two reasons. First, scant attention has been paid to the facility personnel with whom inspectors interact, and Hawkins’s attention to them at least provides scholars the opportunity to ponder the role of facility personnel if only for a brief time. Second, Hawkins does point out several key characteristics of desirable facility personnel: cooperativeness, “good” attitudes, and helpfulness (113).

⁶ Hawkins’s use of the word “polluters” to label facility personnel is vexing. Clearly, the term communicates that such actors are “bad” and cannot possibly be “good.” It might be noted that inspectors pollute as well – think of all the driving inspectors have to do to physically get to a facility for an inspection! Such a characterization of facility personnel is outdated and reflects more adversarial perceptions about regulated facilities.

Hutter (1997) builds on existing literature (notably Bardach and Kagan’s “good” and “bad apples”) by arguing that there are finer distinctions among facilities: poor, reasonable, fairly good, responsible, very good, and exemplary. Based on her study of inspectors in the United Kingdom in the 1990’s, Hutter found six main factors that influenced where a facility fell on the spectrum: company commitment, attitude of staff towards compliance, past record of compliance, quality of management, ability to comply, and the treatment of employees. Although Hutter did not include facility size, she, like Hawkins, notes the potential for size to influence a facility’s compliance with regulations. Most of Hutter’s analysis is at the facility level, but she does mention that the facility personnel who interact with inspectors vary in their job duties, from those whose jobs are solely devoted to compliance with regulation, to senior personnel, to those who have other primary responsibilities.

Much of the regulatory literature discusses the behavior of regulated firms, but focuses on the behavior of the entire organization rather than the front-line facility personnel who routinely interact with inspectors. For instance, a wealth of research examines why some facilities go above and beyond compliance, while others disregard compliance with environmental regulation altogether (see, for example, Winter and May 2001). As a result, information about the characteristics of “good” facility personnel (see Table 3.2) is much sparser than that on “good” inspectors.

Table 3.2⁷
Characteristics of a “Good” Facility Official

Is cooperative	Is helpful
Has a “good” attitude	Is willing to comply

Sources: Hutter (1997); Bardach and Kagan (1982/2002); Hawkins (1984)

Challenges in these Relationships

It is important to consider the potential challenges inspectors and facility personnel may encounter in their relationships with one another. These challenges fall into several categories:

⁷ The characteristics in Table 3.2 are arranged alphabetically.

difficulties in the relationships among the front-line workers themselves and organizational and structural obstacles. First, inspectors and facility personnel confront several potential difficulties. In addition to the technical capabilities and legal knowledge required of inspectors, “certain personality traits and communication skills are especially important” (Bardach and Kagan 1982/2002, 127). In the absence of good communication skills and the ability to empathize with those subject to regulations, it is difficult to build a good relationship. Additionally, facility personnel frequently are “unhappy with the overly zealous inspector” (Bardach and Kagan 127). The specific characteristics of facility personnel also are important in these relationships. In Hawkins’s (1984) discussion of images of polluters, he notes that assessments of facility personnel’s behavior, such as whether their misconduct is deliberate, can have dramatic effects on their interactions with inspectors (110-118).

The second significant category of challenges to these relationships has to do with the organizational issues and structural barriers that inspectors and facility personnel encounter. Bardach and Kagan (1982/2002) discuss at length the challenges inspectors face in an “unreasonable” regulatory system. Inspectors are forced to contend with regulations that are daunting and complex, and they often lack discretion to effectively implement the regulations. Although Bardach and Kagan do not explicitly extend the challenge of “unreasonable” regulations to facility personnel, such a connection may easily be made as facility personnel have to deal with the confusing and overwhelming regulations as well. Karkkainen (2002), among others, argues that the current system of environmental regulation is grounded in an organizational model that is rigid, inflexible, and does not promote coordination. Additionally, environmental protection agencies must contend with stakeholders who perceive these organizations to be ineffective, inefficient, incompetent, and adversarial (Bardach and Kagan 1982/2002).

These sorts of factors contribute to the widespread belief that the environmental regulatory system fosters adversarial relationships. It is important to consider these potential obstacles to

smooth trusting relationships between inspectors and facility personnel as attention turns to the significance of these relationships in environmental regulation.

Significance of Front-line Workers in Environmental Regulation

Repeatedly in policy implementation studies, the key to understanding policy implementation is to examine what is going on at the ground level or on the front lines. Hawkins astutely notes that "...the ambivalence, tensions, and dilemmas prompted by the opposing interests in regulation are continuously worked out in the day to day enforcement decisions of field officers" (13). Moreover, if there is desire to change any aspect of the regulatory system, one must deal with street-level bureaucrats, as Lipsky (1980) observed almost three decades ago (8).

In my view, the significance of these front-line workers in environmental regulation stems predominately from the interaction and the relationships between them.

We often judge the performance of environmental regulation in light of the concentrations of principal pollutants, assigning regulators the credit (or blame) for the results. Unfortunately, policy analysts often forget that "policy outcomes" are more correctly viewed as the product of a complicated set of relationships and decisions...(Eisner 2006, 153).

At the most basic level, inspectors and facility personnel are tasked with putting environmental regulations in motion and ensuring compliance with them. Neither party can do this alone. Facility personnel frequently rely on inspectors to help them in achieving compliance, and the inspectors rely on the various facilities to educate them about various operations and different processes for mitigating negative effects on the environment. Hawkins (1984) calls this relationship "symbiotic" because both the inspector and the facility official "depend upon each other for information and assistance" (45). Sometimes these parties may interact with one another on a nearly daily basis, while in other instances interaction may be limited to a few times a month or year. Ultimately, a "substantial amount" of an inspector's time is "spent creating and preserving good relations" with facility personnel (Hawkins 42). Hutter (1997) also notes that inspectors and facility personnel "often build up quite a close working relationship" (167).

Therefore, the conclusion that “[t]he regulatory community is at the core of the compliance process and the relationship between regulators and the regulated emerges as vital to our understanding of regulatory control” seems compelling (Hutter 237). How should this key relationship be explored, however, since there are so many facets to consider? As in the last chapter, a useful lens through which to look at these relationships is trust, and such a lens may be applied here. McCaffrey, Smith, and Martinez-Moyano (2007) note that “[h]ow regulators, firms, and the individuals are involved with each other depends heavily on their mutual familiarity and levels of trust between them” (321). Although McCaffrey et al. make this point in the context of financial regulation, the same may be said for environmental regulation. First, environmental regulation requires inspections and frequent interactions with the regulated, just as financial regulation does. Second, the broader literature on environmental regulation, as Chapter Two discussed, highlights lack of trust as a significant problem.

Noteboom (2002) maintains that trust is a process that develops between people through their interactions and relationships. Thus, examining the relationships of environmental compliance inspectors and facility personnel focusing on relational trust is fitting. Hutter (1997) found little evidence that inspectors and facility personnel were as calculative as some models might indicate (189). It seems appropriate then to employ the relational view of trust rather than the calculative view. Using a relational view of trust as a way to explore the relationships between inspectors and facility personnel, the next step is determining how to identify trust in actual relationships. Drawing on the diverse array of literature on trust from a host of fields, Kim (2005) notes the different indicators of the presence of trust offered by the literature. Table 3.3 draws on Kim’s work.

Table 3.3
Trust Indicators⁸

Ability	Faith in Performance
Acceptance	Goal Formation and Achievement
Accountability	Good Faith Efforts
Availability	Honesty
Benevolence	Information Flow
Cautious Decision Making	Integrity
Communication with Others	Loyalty
Competence	Not Taking Advantage of Another
Concern for Others	Openness
Confidence	Predictability
Consistency	Promise Fulfillment
Cooperation	Receptivity
Credible Commitment	Reciprocity of Duty and/or Interest
Data flow of both information and perception	Reliability
Discreetness	Respect
Ethical Behavior	Responsiveness
Equal Treatment	Transparency
Fairness	

Source: Adapted from Kim (2005)

An initial glance at the indicators in Table 3.3 suggests a clear conclusion: these are aspects of the relationship between inspector and facility personnel that one would expect to be vital to maintaining a good relationship between the two parties. Such a conclusion is supported by the limited amount of evidence available on inspectors. For example, “[a] central feature of the regulatory relationships...is co-operation [sic]” (Hutter 1997, 187). Some researchers go so far as to say trust is a key component of those relationships. “[T]rust is of crucial importance to an enforcement agency’s detection and compliance processes” (Hawkins 1984, 30). Parker and Braithwaite (2003) state: “[t]rust between regulator and regulatee simultaneously builds efficiency and improves the prospect of compliance. If regulatees trust regulators as fair umpires who administer and enforce rules that have important substantive objectives, then the evidence is that

⁸ The table is adapted from Kim (2005) where he lists numerous studies with proxies or measures of trust the researchers used (623-624). Additionally, these variables are from research that take different views of trust, views based on the rational/calculative and relational conceptions of trust. The measures are listed in alphabetical order.

compliance levels will be higher, and resistance and challenges to regulatory action will be lower” (134).

Such conclusions merit more in-depth consideration. In the earlier discussion of inspectors, Table 3.1 reviewed the characteristics of “good” inspectors appearing in the literature. Comparison of those 14 characteristics with the list of indicators of trust yields a striking finding. Five of these 14 (competence, cooperation, fairness, reciprocity, and responsiveness) appear explicitly in Table 3.3. The remaining nine that are not listed Table 3.3 (ability to resolve disputes, friendly, patience, provision of information, avoid zealotry, reasonable, avoid adversarial relationships, forbearance, and empathy with the regulated) evidently are encompassed by other indicators. For instance, “provide information” as a characteristic of a good inspector appears in Table 3.3 as data flow of both information and perception, information flow, and openness. “Acting reasonable” seems to be tapped by, for example, concern for others, fairness, not taking advantage of another, and receptivity. The characteristics of being a “good” inspector evidently coincide closely with the indicators of trust Kim assembled.

Unfortunately, there is less scholarship to draw on in reaching a similar conclusion that the characteristics of “good” facility personnel also embody trust. Hawkins (1984) and Parker and Braithwaite (2003) note that trust is important in the relationship itself between the regulator and the regulated. Yet, when comparing Tables 3.2 and 3.3, only one of the four characteristics of “good” facility personnel appears as an indicator of trust – cooperation. However, as with inspectors, most of the remaining characteristics appear closely related to other indicators of trust. For example, “willingness to comply” is a characteristic of “good” facility personnel, and parallels can be made to the trust indicators such as credible commitment, ethical behavior, faith in performance, not taking advantage of another, promise fulfillment, reciprocity of duty, and transparency. Similar

comparisons may be made between good attitude as a characteristic of facility personnel and cooperation, receptivity, responsiveness, and respect.

In sum, being a “good” inspector or facility official could require many of the indicators of trust. In “good” relationships between inspectors and facility personnel, trust appears to be a key component. It is important to note, however, that while a link between the characteristics of being a “good” inspector or facility official and trust is plausible, it is not definitive. In other words, the desirable characteristics of inspectors and facility personnel may simply be explained as indicative of professionalism. Regardless, these relationships are significant. “Understanding how relationships between regulatory organizations and firms affect compliance thus is essential to understanding regulatory implementation” (McCaffrey et al. 2007, 308). Put simply, the essence of understanding regulation and its implementation is intertwined with the relationships between the regulator and the regulated.

The Nature of the Relationships Between Front-line Workers in Environmental Regulation

At this point, the question that invariably arises is: what is the actual nature of the relationship between these inspectors and facility personnel in environmental regulation? The sparse literature indicates that these relationships are crucial to understanding regulation, so what are they like in environmental regulation? More specifically, is trust present in these relationships and indeed an important aspect of them? Or is trust the noteworthy problem that many scholars have asserted? Unfortunately, no ready answers have been found. The only inferences that the literature offers are in reference to relationships at unknown levels of analysis and they are somewhat cynical. Kettl (2002b) concludes a forward looking text on environmental governance with this dismal thought while discussing the challenges for the future: “[p]erhaps even more fundamental, however, is the problem of trust” between the actors in environmental regulation (184). Others echo these thoughts. Robert E. Roberts, executive director of the Environmental Council of the States (ECOS)

is quoted as saying “[r]egulators don’t trust regulatees, and regulatees don’t trust regulators” (as quoted in Kettl 2002b, 184). “Unfortunately, the relationships between the regulated and the regulators are permeated by distrust,” according to Eisner (2006) (177). Fiorino (2006) also makes similar comments.

Based on the previous discussions of these regulatory relationships and their connection with trust, one is left to conclude that, generally speaking, cooperation, willingness to comply, competence, responsiveness, and many other components of relationships are not occurring in the very important relationships between front-line workers in environmental regulation.

Conclusion

This chapter has explored the role and significance of front-line workers (inspectors and facility personnel) in environmental regulation. Examination of environmental regulation in Chapter Two shifted in this chapter from the federal level where much of the environmental regulation is formulated to the state level in order to spotlight those actors who are responsible for making environmental regulation happen on a day-to-day basis. Unfortunately, the literature too often has neglected these critical actors and the work that does exist is dated or focused outside the U.S.

Further, scholarship that details the future of American environmental regulation paints a grim portrait, suggesting an utter lack of trust between the front-line workers in environmental regulation. Yet, few of these pessimistic conclusions are substantiated with evidence. No one has explored what is happening on the front-lines of environmental regulation. Sorely needed then is an empirical exploration of the front-lines of environmental regulation, of the nature of the relationships between environmental compliance inspectors and facility personnel. The next chapter presents one way to pursue gathering evidence about what is happening on the front-lines.

CHAPTER FOUR
EMPIRICAL EXPLORATION OF THE INTERACTION BETWEEN
FRONT-LINE WORKERS IN ENVIRONMENTAL REGULATION

“I wish I was the verb to trust...”
- Pearl Jam

After establishing the significance of front-line workers in environmental regulation and the importance of their relationships, an important research question emerges: what are these interactions really like? There has been little empirical exploration regarding either inspectors or facility personnel that is pertinent to the realities of 21st century environmental regulation in the United States. The minimal research on inspectors is unquestionably dated (e.g. Bardach and Kagan 1982/2002) and frequently set in contexts outside of the U.S. (e.g. Hawkins 1984; Hutter 1997). If the environmental regulatory and governance literature continues to assert that trust is a problem (see, for example, Kettl 2002; Fiorino 2006; Eisner 2006), then the next logical step is empirical investigation of this contention.

Undoubtedly such an exploration is daunting and easily leaves one wondering where to start. Realizing that there is no way to definitively address all of the propositions in the literature, one might begin with smaller studies that examine such issues in particular contexts. This research endeavors to explore the issues in a particular state, Virginia. Through qualitative research in Virginia, insights into these broader concerns can be gained and set the stage for future work. This chapter details the study’s methodology by discussing the research questions and propositions, research design, background on the Virginia Department of Environmental Quality, data collection and analysis, and limitations.

Research Questions and Propositions

Although this research focuses broadly on the relationships between inspectors and facility personnel to provide some understanding of the interactions between the two, the research question is narrower, focusing on trust in these relationships: Does trust factor into the relationships

between environmental compliance inspectors and facility personnel in Virginia; and if so, how?

Along with this overarching question are a number of secondary questions:

- How do inspectors and facility personnel characterize their relationships with each other?
- Do inspectors have different types of relationships with facility personnel?
- Do facility personnel have different types of relationships with inspectors?
- What are the important factors in the relationships between the two parties?
- What are some of the factors that make for “good” relationships versus “bad” relationships?
- What are some of the obstacles in these relationships?¹

Several propositions related to these questions can be derived from earlier discussions of the nature of environmental regulation in the U.S. and the character of the relationships between inspectors and facility personnel. First, given the adversarial nature of environmental regulation in the U.S., I expected that the relationships between inspectors and facility personnel would reflect these tensions, and neither side would consider the relationships to be “good” or positive. Second, I predicted that the relationships between these two parties will vary; for instance, I anticipated that some relationships were decent while others were hostile. Third, I predicted that the few “good” relationships between inspectors and facility personnel would contain evidence of trust, as indicated through variables drawn from previous research (as Chapter Three discussed). Finally, a variety of factors may complicate these relationships, including the adversarial nature of environmental regulation, the complexity of that regulation, and personnel issues (such as high turnover and staff shortages) among inspectors.

Research Design

These questions and propositions center on the complex nature of human relationships. Marshall and Rossman (2006) indicate that qualitative research is most appropriate when an

¹ Based on the literature previously discussed, I was eager to explore the barriers inspectors and facility personnel encountered in working with one another and their difficulties in achieving compliance with environmental regulations. For example, did facility personnel struggle with inspectors because inspectors always seemed too rigid and did not allow any flexibility?

understanding of the complexities of social interactions is sought (2). Simply selecting a qualitative approach is not enough, however; for it does not indicate how broad research questions might be explored empirically.

Here, an instrumental multiple case study design was chosen. Gerring (2004) defines an instrumental case study as “an intensive study of a single unit for the purpose of understanding a larger class of (similar) units” (342). Case studies are well suited for descriptive, in-depth, and exploratory research (Gerring 346), and all of these characteristics are features of this research. The individual cases are the *relationships* between inspectors and facility personnel. All of the cases were drawn from a single state, allowing state-level influences (e.g. variations in inspection procedures, regulations) to be held constant. Although case studies do suffer from an inability to generalize broadly (Johnson 2002, 51), I sought to incorporate as much diversity into the cases selected as possible (see below), while acknowledging that this study will be only the first in a series to fully probe the relationships between inspectors and facility personnel. Additionally, Yin (1989) notes that analytical generalizability is possible with case studies when statistical generalizability is not. Some of the results of this study may be generalizable to the theoretical propositions that grounded the research.

The primary data collection strategy I employed was the semi-structured interview. These were conducted with both the state inspector for a particular facility and the facility personnel who interacted regularly with the inspector. Interviews provide a “solid, deep understanding of what is being studied” (Rubin and Rubin 2005, 35). In-depth interviews have numerous advantages. First, they allow for the gathering of large amounts of data quickly; second, they can be used to explore a wide variety of information; third, they enable the immediate follow-up and clarification of information (Marshall and Rossman 2006, 101-102). Additionally, interviews allow for participants to identify other factors not already considered by the researcher that may underlie the relationships

and interactions in focus. Overall, interviewing is well suited for understanding the complexity and the dynamics of the relationships between inspectors and facility staff.

Other data were collected from a variety of sources. Background research on DEQ was conducted through the agency's extensive website; various agency documents also were reviewed, such as the DEQ enforcement manual. Other documents, such as facilities' pending consent orders and information on the Virginia Environmental Excellence Program, also were obtained from DEQ.

Research Site

This research examined relationships between environmental compliance inspectors of the Virginia Department of Environmental Quality (DEQ) and facility personnel from regulated facilities in the Commonwealth. There were three primary reasons for selecting these relationships in Virginia. First, according to the most recent state rankings, Virginia is among the middle range and majority of states in its commitment to and capacity for environmental protection (O'Leary and Yandle 2000).² Selecting a state in the middle range allows for an assessment of relationships based on where the typical state in the U.S. falls on a spectrum of environmental commitment and protection capacity. Second, as already mentioned, examining relationships within one state allows the research to control for state variation. Third, the feasibility of any research project is always a concern. I have worked as an intern for the Virginia Department of Environmental Quality,³ and I probably was better able to secure access to environmental compliance inspectors because of my connection, albeit limited, with the agency several years ago.

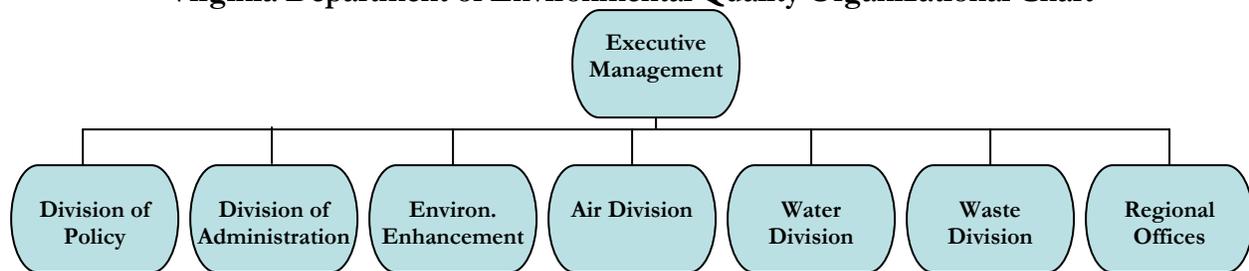
² O'Leary and Yandle (2000) report the Lester Environmental Protection Grades for the 50 states, which are compiled based on a state's commitment to environmental quality and its institutional capacity for environmental management. Virginia received a "C" rating and the majority of states (30) fell in the range of either a "B" or "C" rating.

³ I worked for DEQ during the Summers of 2003 and 2004 in the Office of Air Compliance within the Air Division.

Virginia Department of Environmental Quality

At this juncture, it is important to consider some background on the Virginia Department of Environmental Quality (DEQ) to provide a greater context for the population of inspector/facility official relationships from which the sample of front-line workers was drawn. In 1992, DEQ was created by the Virginia General Assembly. To form DEQ, the General Assembly merged four existing state environmental protection agencies: the Department of Air Pollution Control, the Department of Waste Management, the State Water Control Board, and the Council on the Environment (JLARC 1997). Official operation began on April 1, 1993. DEQ's activities stem from mandates in the Virginia Constitution; Article IX discusses protection of the state's environment and natural resources. The mission statement of the agency is "to protect and improve the environment and well being of all Virginians" (DEQ Website).

Figure 4.1
Virginia Department of Environmental Quality Organizational Chart



Source: DEQ Website

As with any large government agency, DEQ has a complex organizational structure (see Figure 4.1). First, like other state environmental protection agencies, DEQ implements numerous federal environmental statutes as delegated by EPA along with state environmental statutes. To facilitate implementation, DEQ is organized into separate divisions based on the major environmental media (air, water, and waste) and is primarily concerned with enforcing the aforementioned statutes.

In addition to the air, water, and waste divisions, DEQ has a variety of other offices and programs, including a policy division and a pollution prevention office within the environmental enhancement division. The pollution prevention office merits additional emphasis. It administers various programs designed to encourage improved environmental performance, such as the Virginia Environmental Excellence Program (VEEP), through more innovative strategies than command and control regulations. Although DEQ has a few such programs, it has not experimented with next generation environmental policies to the extent other states (such as North Carolina and Wisconsin) have or engaged in such innovations for a sustained period of time. Indeed, the Resource Renewal Institute in its 2001 *State of the States* report indicated that Virginia is “low” in environmental policy innovation.⁴ The implications of Virginia’s ranking in environmental policy innovation indicates that the state is operating in a more traditional, command and control approach to environmental regulation. As noted earlier, this is important because before discussions of the future of environmental regulation occur, understanding is needed about the interactions in traditional systems of environmental regulation. Additionally, Virginia’s Joint Legislative Audit and Review Commission (JLARC) conducted an extensive review of DEQ at the General Assembly’s direction in 1996 and 1997 and concluded that the agency only ranked “satisfactory” in one area (air enforcement), “satisfactory with improvement needed” in three areas (protecting air quality, permitting, and monitoring), and “unsatisfactory” in protecting water quality, inspections, water enforcement, environmental planning, and internal management (JLARC 1997, i).

In addition to divisions and offices housed in Richmond, DEQ has seven regional offices that are responsible for the day-to-day operations of environmental regulatory compliance. Initially, DEQ was highly centralized, and the Richmond office directed compliance with regulations. The

⁴ This categorization is based on numerous indicators including: standards more stringent than federal standards, pollution prevention legislation and state support, renewable energy projects, environmental leadership programs, climate change action plans, and state mandated disclosures. Twenty-six percent of states were classified in the same category as Virginia. A more recent update of this ranking is not available.

agency's operations were later decentralized, and several regional offices were created.⁵ As of mid-2007, seven regional offices divide the state geographically (see Table 4.1 and Figure 4.2).

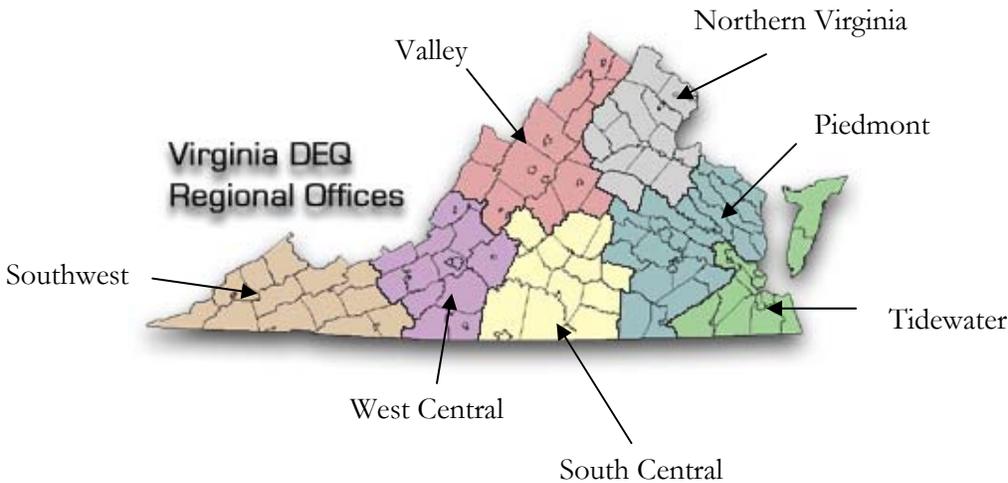
Table 4.1
DEQ Regional Offices

Regional Office	Location	Counties/Cities Included
Northern Virginia	Woodbridge	<u>Counties:</u> Arlington, Caroline, Culpeper, Fairfax, Fauquier, King George, Loudoun, Louisa, Madison, Orange, Prince William, Rappahannock, Spotsylvania, Stafford <u>Cities:</u> Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, Manassas Park
Piedmont	Glen Allen	<u>Counties:</u> Amelia, Brunswick, Charles City, Chesterfield, Dinwiddie, Essex, Gloucester, Goochland, Greensville, Hanover, Henrico, King and Queen, King William, Lancaster, Mathews, Middlesex, New Kent, Northumberland, Powhatan, Prince George, Richmond, Surry, Sussex, Westmoreland <u>Cities:</u> Colonial Heights, Emporia, Hopewell, Petersburg, Richmond
South Central	Lynchburg	<u>Counties:</u> Amherst, Appomattox, Buckingham, Campbell, Charlotte, Cumberland, Halifax, Lunenburg, Mecklenburg, Nottoway, Pittsylvania, Prince Edward <u>Cities:</u> Danville, Lynchburg
Southwest	Abingdon	<u>Counties:</u> Bland, Buchanan, Carroll, Dickenson, Grayson, Lee, Russell, Scott, Smyth, Tazewell, Washington, Wise, Wythe <u>Cities:</u> Bristol, Galax, Norton
Tidewater	Virginia Beach	<u>Counties:</u> Accomack, Isle of Wright, James City, Northampton, Southampton, York <u>Cities:</u> Chesapeake, Franklin, Hampton, Newport News, Norfolk, Poquoson, Portsmouth, Suffolk, Virginia Beach, Williamsburg
Valley	Harrisonburg	<u>Counties:</u> Albemarle, Augusta, Bath, Clarke, Fluvanna, Frederick, Greene, Highland, Nelson, Page, Rockbridge, Rockingham, Shenandoah, Warren <u>Cities:</u> Buena Vista, Charlottesville, Harrisonburg, Lexington, Staunton, Waynesboro, Winchester
West Central	Roanoke	<u>Counties:</u> Alleghany, Bedford, Botetourt, Craig, Floyd, Franklin, Giles, Henry, Montgomery, Patrick, Pulaski, Roanoke <u>Cities:</u> Bedford, Clifton Forge, Covington, Martinsville, Radford, Roanoke, Salem

Source: Virginia Department of Environmental Quality

⁵ According to JLARC (1997), this push for decentralization came from both internal and external agency actors and encompassed the fourth phase of organizational evolution at DEQ and began in May 1995 (6).

Figure 4.2⁶
Map of DEQ Regional Offices



Each of these regional offices includes air, water, and waste inspectors. The number of inspectors in each media varies with the size and demands of the region. Some inspectors are assigned facilities that they are responsible for over the course of numerous inspection cycles, while in other regions and/or media, inspectors are given an inspection plan that details all the facilities they are responsible for during a particular inspection cycle (an inspection cycle is a federal fiscal year). Regional offices operate independently of one another, although there are informal ties among the seven regions.

Research Sample

Attention now shifts to how I drew the sample of relationships between front-line workers in environmental regulation in Virginia. Although I sought to draw the best sample possible, the most important factor determining the sample was access granted to these front-line workers. The first step in drawing the sample was to gain access to the inspectors at DEQ because I anticipated

⁶ DEQ Region Map taken with permission from the Virginia Department of Environmental Quality's Website. Website accessed 19 June 2007. (<http://www.deq.virginia.gov/regions/homepage.html>)

that they would be more difficult to contact for interviews given the nature of their jobs and the perceived limited amount of time they spend in their offices.⁷

Inspectors

The population of inspectors in DEQ that I sampled from appears in Table 4.2.

Table 4.2
Population of Inspectors *Budgeted* for by DEQ

	West Central	Southwest	South Central	Valley	Piedmont	Northern Virginia	Tidewater	<i>Totals</i>
Air	6	5.65	5	6.25	11.60	24.50	7	66
Water	10.70	5.5	5.3	12.30	10.5	9.8	12.6	66.7
Waste	4.2	2.2	3.7	4.7	6.65	6.55	7.3	35.30
<i>Totals</i>	20.9	13.35	14	23.25	28.75	40.85	26.9	168

Two comments must be made about the figures in Table 4.2. First, these figures were obtained via a formal Freedom of Information Act (FOIA) request to DEQ, and the data were provided from the FOIA office in DEQ’s Central Office rather than from the regions. Second, the figures reflect the number of inspectors budgeted by region and media rather than the actual number of inspectors employed by the agency. At almost any given moment, DEQ has vacant positions for inspectors throughout the agency.

To secure access to inspectors, a key insider⁸ indicated that the best way would be through their regional compliance managers. In each region, all three media have a compliance manager who supervises the inspectors in that particular media. I contacted the three compliance managers in each of the seven regions via email. I told the managers of the research project’s aims and requested access to some or all of the inspectors under the managers’ supervision.

⁷ Additionally, DEQ inspectors work on the federal fiscal year calendar and by far their busiest months are July, August, and September as they approach the end of the federal fiscal year and have to complete a particular number of inspections. The timelines of inspectors was yet another reason for conducting inspector interviews first, once the Virginia Tech Institutional Review Board approval was granted for this research at the end of March 2007.

⁸ Bailey (1996) suggests alternative language for the “key informants” in research projects; that language is adopted here because of the negative connotation associated with the term key informant (55). I had served as an intern with DEQ during the summers of 2003 and 2004 in the Richmond air compliance office. During my tenure there, a full time employee and I built a relationship and have stayed in contact since then. This employee served as an invaluable insider during the entire development and execution of this research.

As one might expect, I received a range of responses from managers. Some were enthusiastic about the research and granted me access to any or all of their inspectors. Other managers were more cautious and only granted access to a handful of inspectors whom the managers chose for unknown reasons. Finally, some managers declined to respond to my requests altogether.⁹ I received responses from all of the air inspectors' supervisors and was able to schedule interviews in six of the seven regions (the missing region was Tidewater). Unfortunately, my response rate with the other two media was not as high. Among water supervisors, I was only able to schedule interviews in the South Central and Tidewater regions due to the responses from the supervisors. In the waste division, I was only able to schedule interviews in the West Central, Piedmont, Northern Virginia, and Tidewater regions.¹⁰ Once I obtained permission from the supervisors, they provided access to their inspectors and I was able to schedule interviews with the inspectors without incident.¹¹

After I received permission to contact the inspectors for interviews, I emailed the inspectors directly, explaining the research project and requesting their assistance by granting me an interview. As with the compliance managers, some inspectors responded eagerly, anxious to assist with the research and evidently thrilled that a researcher was paying any attention to them and their role in environmental regulation. Others, however, did not respond to the direct requests for interviews. It

⁹ As the sampling progressed I called upon another key insider in a regional office that I had previously worked for when I was having difficulty getting any of the managers from two particular regions to respond to the requests. This key insider previously had offered to help in any way he could and was called upon to help elicit responses from the two silent regions. His contacts with particular regions were vital in getting responses from the two regions that had been unresponsive to my requests.

¹⁰ It is important to note that I did receive responses from some of the supervisors in the regions where I was not able to schedule interviews, but I do not want to specify which regions I had some level of response from and which I did not hear from at all because it is very easy to obtain information about the supervisors, and I do not want to single any of the individuals at DEQ out in the course of this research.

¹¹ Often, the supervisors would reply to my inquiries and copy their inspectors (either all or some of the inspectors that they selected for me to interview) on the email, so there was little likelihood that the inspectors would not agree to an interview since the request was coming from their supervisors. This does point to some additional concerns about any coercion that inspectors may have experienced from their supervisors regarding participation. However, knowing how busy inspectors and their supervisors are, I am not overly worried that inspectors were forced to participate by their supervisors.

is difficult to compute actual response rates because in many of the cases, the manner of arranging the interview was different. For instance, sometimes the supervisor set up the interviews and I just emailed inspectors to confirm; in other cases, I was told to show up at a particular time and interview whomever was available; in still others, I was supposed to wait to be contacted by the inspectors directly if they were interested in participating. For the most part, inspectors readily agreed to participate. In only three instances where I emailed an inspector did the inspector not respond. If I was able to establish contact via email with an inspector, I generally scheduled an interview.¹²

The email correspondence between the inspectors and me facilitated the arrangements for the face-to-face interviews. All but three of the 22 inspector interviews were conducted face-to-face. The three interviews that were not done in person were at the request of the inspectors. These interviews were conducted via the telephone.¹³ Although initial plans for the research had included obtaining interviews from a diverse group of inspectors who represented different environmental media, the various geographic regions, and the length of time as an inspector, interviews were arranged based on the access I was granted to inspectors. In the end, however, a relatively diverse group of inspectors was interviewed. By way of a preview of the following chapter, I interviewed 22 inspectors: 13 air inspectors, 4 water inspectors, and 5 waste inspectors. The inspectors represented all seven regions of the state. I also interviewed 22 facility personnel from all the regions in Virginia.

The majority of the interviews with inspectors were completed before the interviews with the facility personnel began. This sequence was strategic for several reasons. First, I believed that obtaining access to the inspectors would be more difficult and should be attempted first in case difficulties in securing interviews with inspectors in a particular region or a particular media proved

¹² In one instance I had an interview scheduled, and the inspector did not show up for the interview because she was admitted to the hospital the night before.

¹³ These three inspectors were based in the Tidewater Regional Office, and one inspector is actually stationed on the Eastern Shore of Virginia.

to be nearly impossible. If this unfortunate circumstance played out, the sampling strategy for facility personnel would have to be adjusted. Second, I had the opportunity to accompany a number of inspectors on actual inspections during my time as an intern with DEQ; accordingly, I believed I was more conversant in the language and particulars of the job of an inspector and felt they would be the better interviews to conduct first.¹⁴ As the conclusion of the inspector interviews was drawing near, my focus shifted to sampling the facility personnel.

Facility Personnel

The approach for sampling facility personnel was different from that of the inspectors. The first step in drawing a sample from the larger population required obtaining from DEQ a comprehensive list of all the facilities that it regulated in Virginia. Under a FOIA request, I sought and received a list of all the regulated facilities in Virginia for each of the three media. Along with that information, I requested facility contact information, the contact name at the facility that DEQ has on file, and the inspector assigned to that facility. DEQ also complied with this request. Upon receipt of the data, I went through the spreadsheets to tidy the information. After having worked at DEQ and on advice of some of the DEQ employees who supplied the data, I went through the spreadsheets looking for duplicate facility entries, of which I found many, and removed them. I was interested in each facility having equal chance of being included in the study; therefore facilities with duplicate records needed to be eliminated. After this step, I was left with thousands of possible facilities for inclusion in the study. Table 4.3 summarizes the population of facilities considered for this study by region and media.

¹⁴ It should be noted that the design of this research would have been greatly improved if I had been allowed to be a participant observer. It would have been particularly helpful if I had been able to accompany inspectors on actual facility inspections; indeed one of the compliance managers suggested I do that. However, upon further investigation into this possibility, it quickly became evident that liability concerns of DEQ would prevent me from observing the actual interactions between inspectors and facility personnel.

Table 4.3
Sampling Frame of Facilities in Virginia by Region and Media

	West Central	Southwest	South Central	Valley	Piedmont	Northern Virginia	Tidewater	<i>Totals</i>
Air	450	465	321	545	720	923	542	3966
Water	398	638	176	576	229	455	394	2866
Waste	65	46	40	39	141	57	91	479
<i>Totals</i>	913	1149	537	1160	1090	1435	1027	7311

It is imperative to note that facilities frequently have air, water, and waste permits and therefore could appear in Table 4.3 at least three times. Cross-checking the lists of facilities by media would have been extremely tedious and was not done for this study.

Initially, I planned to speak with the inspector and some of the facility personnel with whom that particular inspector interacted; however, as the time came to begin sampling facility personnel, a number of factors had changed, and the research approach was altered. First, I discovered that the water division does not assign inspectors in the DEQ database (Comprehensive Environmental Database System – CEDS) to a particular facility. This meant that I would be unable to solicit interviews with facility officials assigned to the water inspectors I interviewed. Second, two of the inspectors who were interviewed became inspectors after the FOIA request was granted. Third, I was cautious about making sure that a broad range of facility types was included in the sample, and I was concerned that only drawing facility personnel to interview based on the inspectors already interviewed might unduly limit the diversity in the sample of facility personnel. For all of these reasons, I elected to draw a sample of facilities from the entire population of regulated facilities DEQ provided.

In order to sample from the thousands of facilities regulated by DEQ, I devised a multi-stage, cluster sampling approach. First, all of the facility information was sorted by environmental media (air, water, and waste) and by DEQ regional office (Northern Virginia, Piedmont, South Central, Southwest, Tidewater, Valley, and West Central). Once the facility data were divided into

21 spreadsheets, the data were exported into a statistical software package¹⁵ and sorted randomly. Thus, the initial sampling was a stratified random sample of regulated facilities. Then, the facility at the top of the list for the air division in each of the seven regions was called to seek an interview. Based on the responses and the types of facilities that granted interview requests, a purposive sample was drawn from the random sort of the facilities to ensure a diversity of regional representation as well as facility type. For example, I did not want to interview staff at 10 landfills because they happened to be at the top of 10 of the 21 spreadsheets; rather, I wanted to make sure that while I did interview landfill personnel I also talked with individuals at facilities that were manufacturers and auto body shops.

I called approximately 70 facility officials and secured interviews with 22 of them, giving the study a response rate of around 30 percent. When I was unable to secure an interview with a facility official, it was generally because I did not speak with an individual directly. With the exception of two individuals, if I was able to speak with the appropriate facility contact, I was able to secure an interview.¹⁶ I found this encouraging, and indeed most facility personnel seemed eager to talk with me. When I called a facility official requesting an interview, I encountered various responses. At times, the phone numbers DEQ provided were incorrect, missing, or fax numbers instead. In other situations, I left voice mail after voice mail and no one returned my calls; even after leaving messages with various administrative staff, I still did not always get a call back. Analysis of those who did not respond yields no clear patterns. It is worth noting, however, that the best response rate was from individuals, discussed in the section below, who were considered some of DEQ's "worst": I called three and conducted two interviews.

¹⁵ Minitab.

¹⁶ In one instance, the facility official scheduled an interview with me and when I called at the predetermined time, I was brushed off and told to call back at another appointed time. Upon calling back a third time at a mutually agreed upon time, I was again dismissed, and I did not solicit another interview time. In another instance, I spoke with an individual who said he/she was too busy to do the interview over the phone but would answer my questions via email; I sent the questions via email as the individual had asked, but I received no response.

The “Best” and the “Worst”

In addition to efforts to reflect diversity in the kinds of facilities whose officials I interviewed and a representation of all the DEQ regions to account for regional variation that might be present in the relationships between inspectors and facility personnel, I also wanted to interview officials from some of DEQ’s “best” environmental facilities and some of its “worst.” “Best” was defined as those facilities that are members of the Virginia Environmental Excellence Program (VEEP) created and administered by DEQ.¹⁷ VEEP “encourages superior performance through environmental management systems and pollution prevention” (DEQ VEEP Website). There are different levels of membership (E2, E3, and E4/EPA Performance Track) that signal varying degrees of environmental stewardship.¹⁸ The highest level of membership is E4, which is only available to facilities that also are included in EPA’s Performance Track program.¹⁹ For the purposes of drawing the facility sample, efforts were made to contact facilities that are members of VEEP based on the list provided on VEEP’s website.²⁰ As with the procedure to draw a sample of the various facilities, the list of VEEP members was imported into a statistical software package and sorted randomly. The facility information on the VEEP website does not contain any contact information so the facility names were located within the data made available to me through the FOIA request.

In contrast to the best facilities, some of the “worst” are those that have enforcement actions pending against them. According to the DEQ Enforcement Manual, the consent order is

¹⁷ It should be noted that simply because a facility is a VEEP member does not mean that its environmental record is ideal or that it is free from environmental regulatory compliance problems. The program does require a “record of sustained compliance,” however, as stipulated by the Code of Virginia. VEEP recognizes facilities that make efforts to go above and beyond the requirements of environmental regulations. Through membership, VEEP facilities are entitled to an array of benefits including flexible incentives to achieve compliance in alternative ways.

¹⁸ As of May 2007 when the data were accessed, 147 facilities were members of VEEP: 11 were designated E4, 56 E3, and 80 E2. Further breakdown of the facilities in this program is not possible because of the lack of information provided on the program’s website.

¹⁹ EPA’s Performance Track program is a voluntary program that seeks environmental excellence from various organizations by encouraging them to “go above and beyond” legal requirements. Members of Performance Track set their own environmental goals and objectives and are entitled to various benefits. For more information, see <http://www.epa.gov/perfrac/>. Virginia’s VEEP program, like those of many states, is based on EPA’s Performance Track.

²⁰ <http://www.deq.virginia.gov/veep/>

the highest level of enforcement action pursued against a facility based on alleged noncompliance with environmental regulations (DEQ 1999).²¹ Consent orders are pursued after other enforcement tools, such as warning letters and Notices of Violation, have been tried. Part of the consent order process requires that consent orders be posted and made available for public comment. The list of facilities with pending consent orders is available on DEQ's website.²² This list was used in an effort to include some of the facilities that currently have severe enforcement actions pending against them as a way to obtain interviews with representatives of some of DEQ's "worst" – or at least with officials at facilities that more than likely do not have a positive relationship with DEQ at the present time.²³ As with the VEEP members, the list of 15 facilities with pending consent orders was sorted randomly and then the facilities were contacted for possible interviews. I sorted the list to ensure that each facility had an equal chance of being called first. Because of the limited sample of the research, I did not seek interviews with all 15 facilities with pending consent orders; therefore, I sorted the lists to ensure a random sample.

After the records for both the "best" and the "worst" were sorted, I chose to telephone the facilities identified for inclusion in the research rather than using the methods of contact employed with inspectors because email addresses were not provided for any of the facility personnel. I also did not expect that some of the smaller facilities (e.g., auto body shops and dry cleaners) would have company email addresses. Additionally, the decision was made to call these contacts to request interviews instead of sending a paper letter because of the time it would take for letters to arrive, the likelihood that those letters might be discarded with other seemingly unimportant mail, and the desire to obtain as diverse a sample as possible.

²¹ DEQ's Enforcement Manual is available at <http://www.deq.virginia.gov/enforcement/manual.html> along with additional information about enforcement procedures.

²² <http://www.deq.virginia.gov/enforcement/notices.html>

²³ The list of facilities with pending consent orders was accessed on 14 May 2007, and 15 facilities were listed. All but one of the facilities was subject to a consent order from the water division, with the fifteenth facility contending with a consent order from the waste division. In terms of geographical representation, eight of the 15 were in the Piedmont region, four in the Valley region, and one each in West Central, Northern Virginia, and Tidewater regions.

The contact and arrangement of interviews with facility personnel was somewhat different than the process with inspectors. Instead of emailing, dozens and dozens of phone calls were made to the facilities identified for inclusion in this research. Initial attempts at contact were made based upon the records DEQ provided through the FOIA request. Frequently, I found that the contact names were incorrect or incomplete so I asked to speak with the person responsible for environmental compliance at the facility. If I had the opportunity to speak with the facility contact responsible for environmental matters, I explained that I was a graduate student doing research on environmental regulation in Virginia and wanted to speak to those who were subject to that regulation and find out about their experiences with it.²⁴ Based on those interactions, interviews were then scheduled and conducted.

A few final comments about the research sample may help to further contextualize the interviews I conducted. Over 7,000 facilities are regulated by DEQ in Virginia, and more than 150 (budgeted) inspectors do that regulating. Without question, the sample of 44 individuals included in this research is very small. I interviewed 13 percent of DEQ's inspectors and interviewed officials from less than one percent of the facilities regulated in Virginia. There are clear limitations to this study's sample size, which will be addressed in a subsequent section. Additionally, over 7,000 inspections were conducted by air, water, and waste inspectors in 2006, according to DEQ.²⁵ There is undoubtedly considerable interaction between inspectors and facility personnel in Virginia. Although it is important to acknowledge these figures do provide background for the interviews, one must remember that the goal of the research is largely exploratory and is meant to serve as the foundation for many future studies.

²⁴ This was the extent of the elaboration offered to potential interviewees because I did not want to sway or incite bias about what I was researching, and I wanted to present the research as being as non-threatening as possible.

²⁵ Data were obtained through an August 2007 FOIA request.

Data Collection

As previously indicated, interviews were the primary means of data collection for this research, and they were conducted with inspectors and facility personnel separately. The interviews generally lasted about one hour, although they ranged from 35 to 75 minutes in length. The majority of interviews with inspectors were conducted in person.²⁶ In contrast, the interviews with facility personnel were conducted via the telephone for several reasons. First, the roles and responsibilities of a person who served as a facility representative in this research varied widely. Some facility personnel were environmental health and safety managers or shop managers, while others were executive vice presidents or other high ranking facility officials. The diversity of the job responsibilities of facility personnel presented a variety of demands on the person's time and thus telephone interviews were easier and less intrusive into their work days. Second, during inspector interviews I observed that I often was intimidating to the inspectors, and I was concerned that I would be even more intimidating to some of the facility personnel, particularly those in smaller operations such as a farm or family dry cleaning business; I opted for telephone interviews in an effort to reduce the uneasiness that some of the interviewees might experience. Third, discussing one's experiences being subjected to environmental regulation may prove to be very unsettling, particularly if one has had less than positive experiences with regulation. Telephone interviews offered some degree of anonymity and buffering between the interviewee and interviewer that might mitigate discomforting effects of discussing regulatory experiences that had been negative. Finally, logistical considerations also contributed to the decision to seek telephone interviews. Given my location in the state and the desire to seek interviews across a large geographic area, the timeliness of the interviews would have been compromised if each had been conducted in person. It is important

²⁶ Three inspector interviews were conducted via the telephone at the explicit request of the inspectors.

to note that if I was able to speak with a facility official, the vast majority²⁷ of them were eager to participate in phone interviews and frequently suggested phone interviews as they fit into their schedules more easily.²⁸ Although on the surface phone interviews may seem less desirable, given the subject matter of the interviews and the hectic schedules of interviewees, telephone interviews proved to be highly effective and efficient for this research.

In-depth interviews were conducted with both inspectors and facility personnel. The interviews began with “ice breaker” questions and topics to set the interviewee at ease. For instance, the interviewee was informed of the broad aims of the research (to understand and explore environmental regulation in Virginia). The interviewee was asked how long he/she had been in his/her current job and additional background questions. From there, the interview progressed with questions about interactions with inspectors and facility personnel, respectively. A list of the actual questions that were used as a template to guide each interview is available in Appendix A.

Data from the interviews were collected through handwritten notes. Although it is well documented that audio recording interviews provides the best way to capture all that was said during an interview (see, for example, Warren 2002), I believed that since the topics of discussion in these interviews potentially were sensitive, recording might have limited the openness and candor of interviewees. Similarly, the topics of interviews included the nature of the relationships between the inspector and facility personnel and the problems in the current regulatory system, and these subjects might have been sensitive for many interviewees.²⁹ Since the goal of the research was to gain insights into the relationships between inspectors and facility personnel, candor was needed from interviewees to provide accurate and useful insights into these relationships. Bucher, Fritz, and

²⁷ Of the facility personnel I spoke with directly, only two dismissed my inquiries or scheduled an interview but evaded the scheduled interview; thus, out of 24 individuals, 22 scheduled and conducted interviews with me.

²⁸ Indeed, I believe I got the cooperation for the interviews that I did based on the manner in which the interviews were conducted because the interviewees were not terribly inconvenienced.

²⁹ In particular, a JLARC review of DEQ in 1997 noted that a majority of low-level employees were fearful that if they did something to harm industry, their jobs might be in jeopardy.

Quarantelli (1956) note that when interviews are not recorded, respondents are more willing to talk freely on topics such as relationships (361). Woliver (2002) also discusses issues associated with getting interviewees to be open. Additionally, Lincoln and Guba (1985) argue that interviews are not as threatening when they are not recorded (241). Reflecting on the interviews after their conclusion, I strongly believe that not audio-recording was the right decision because of the frankness of the interviewees and the frequency with which they told me stories that they prefaced by saying “since you are not recording, I will tell you this.”

During the interviews, I took extensive notes. At the conclusion of each interview, I reviewed the handwritten notes and added any clarifications to ensure as much detail was captured as possible. I then typed the notes by the end of the day that the interview was conducted. Additionally, after typing handwritten notes, I prepared interview narratives based on the guidance of Bailey (1996). Although the interview narratives did not mirror exactly what Bailey suggested (she specified a “true narrative,” while I opted to arrange information around themes in note form rather than utilizing complete sentences), the narratives did include comments and observations I made about the interview itself. I organized the topics discussed into a uniform format that better facilitated data analysis at the conclusion of all of the interviews.

Data Analysis

With the extensive notes completed, I began the process of analyzing the wealth of data gathered, based largely on the dictates of Miles and Huberman (1994). With any interview data, there is a need for systematic examination as opposed to simply looking for confirmation of initial ideas. A multi-step approach to analyzing data from the interviews that consists of examining the interview notes for themes and concepts, and then devising a coding procedure for key themes and concepts is often advocated. For my research, I took a three part approach to data analysis.

First, to reacquaint myself with all the interviews and their content, I began by reviewing the notes and narratives from all of the interviews to look for emerging themes and concepts I wanted to focus on during the analysis. The themes I identified were: (1) the interviewees' essential elements of good or positive interaction between the two parties, (2) the nature of the interactions between inspectors and facility personnel generally, (3) indicators of trust in the interactions between inspectors and facility personnel, (4) the significance of trust in the interactions between the parties, and (5) challenges, obstacles, and barriers to interactions between both parties and environmental regulation more generally. Based on these themes, I orchestrated my data analysis strategy.

Also, during this stage of data analysis, I compiled various descriptive statistics for background information on both inspectors and facility personnel. Included in these statistics for inspectors are information about the regions represented, the media represented, the number of men and women interviewed, and the mean, standard deviation, median, and mode of the years of experience. Similarly, for facility personnel I gathered data on the regions represented, the types of facilities incorporated in my interviews, the numbers of men and women I spoke with, and the mean, standard deviation, median, and mode of the years of experience. These data, as presented in the following chapter, depict a diverse interview sample for this study.

Each theme served as a separate avenue for analyzing interview data. Following the advice of Auerbach and Silverstein (2003), I attempted to make the interview data manageable (37). First, I sifted through what the interviewees said about the elements or characteristics of “good” interactions between the parties. I compiled a list of all the “essential elements” that respondents mentioned and sorted it by whether the interviewee was an inspector or facility official. The list showed many repeated elements of good interactions. Additionally, I sifted through the list to see if the same ideas were present in other remarks of the interviewees. To organize this information, I

pulled out the top dozen³⁰ most cited elements. After assembling two lists of essential elements of good interactions (one for inspectors and the other for facility personnel), I compared the lists to the characteristics of “good inspectors” and “good facility personnel” discussed in Chapter Three. Of course, a direct comparison between the lists of “good” characteristics of front-line workers and the essential elements of good interactions cannot be drawn, since the interviewees were asked about interactions rather than individual attributes. Even so, although the comparison is imperfect, some useful insights can be drawn from comparing what the literature says are characteristics of “good” inspectors and facility personnel and what these actors think are important elements in their interactions.

Next, I explored the information about the nature of the actual interactions between the two categories of front-line workers generally. As this was one of the themes I organized my interview narratives around, I compiled a lengthy list of all the comments about the interactions between inspectors and facility personnel in broad terms. From this list, I looked for patterns between inspectors and facility personnel. Overwhelmingly, most front-line workers had very similar comments to make about the nature of interactions between them, and the stories that they were asked to convey provided illustrations of the broad themes.

The third theme shifted to a focus on indicators of trust in these interactions to determine if trust factored into them. Again, since interviews were not recorded, I used a multi-pronged approach. Initially, I sought to determine if there was evidence of trust in the initial, general discussions of interactions between the two parties. Then, to corroborate what was said generally, I looked for evidence of trust (based on Table 3.3 in Chapter Two) in the stories I asked interviewees to tell about a particular interaction. To code for evidence of trust, I followed three steps. First, I went through all the interview notes and highlighted in one color any time an interviewee brought

³⁰ Twelve elements were isolated because that was the number of essential elements that at least three interviewees specified.

up trust or any of the indicators of trust.³¹ Then, because I often wrote down phrases that used the phrases or words of the interviewee without noting that the language was a direct quote, I went through the interview notes a second time with a different color highlighter and noted any time the interview notes mentioned trust or any of the indicators of trust explicitly. Finally, I made a final pass through the interview notes and highlighted with a third color any time an explanation offered by an interviewee, in my estimation, illustrated trust or an indicator of trust. While conducting this review of the interview notes, I indicated in the notes which indicator(s) of trust I thought were exemplified by a particular story or line of dialogue to enable me and others to review the interview notes for enhanced reliability. For example, an inspector discussed a situation with a particular manufacturer. This facility was not following proper disposal procedures for wipes. In an effort for the facility to get the matter resolved, the inspector remarked that facility personnel were extremely forthcoming with information, very cooperative, and even offered more information than they needed to – including data that could have resulted in additional compliance issues with DEQ. Because of these actions, the inspector and DEQ chose not to pursue any additional enforcement actions with the manufacturer. Additionally, if I were hesitant about whether or not a story contained evidence of trust, I elected to err on the side of caution and not note the story as including a trust indicator. Since trust became a central focus of the research, I wanted to make sure that I was limiting my biases as a researcher and not reading trust into every situation an interviewee detailed.

After reviewing indications of trust in the reported actual interactions between inspectors and facility personnel, I was eager to determine the acknowledgement and extent of trust. At the close of the interviews, I asked interviewees explicitly about trust and whether or not they trusted

³¹ Although the interviews were not tape recorded, I made a conscious effort to write down key phrases that struck me verbatim during interviews. In my interview notes, any phrase that I consciously wrote down verbatim was placed in quotation marks so I would be sure to know it was a direct quote of the interviewee.

the other party. The interviewees provided a variety of responses and, as with the other themes, I compiled the text from the interviews and began to look for the repetition of ideas to enable various categorizations to be made. This allowed me to look holistically at the extent to which inspectors said they trusted or distrusted facility personnel and vice versa.

Along these lines, I was curious as to whether or not interviewees thought trust played a significant role in their interactions with one another. Based on a review of the comments from interviewees regarding the importance of trust, I devised the following categorization: (1) the interviewee brought up trust explicitly and without prompting and noted its significance; (2) the interviewee did not bring up trust explicitly but when asked about trust and if it played a role in the interactions, the interviewee answered affirmatively and with vigor (e.g. “yes, absolutely”); (3) the interviewee did not bring up trust explicitly but when asked about trust and if it played a role in the interactions, the interviewee answered affirmatively but placed a caveat on its role and significance; and (4) the interviewee did not bring up trust explicitly but when asked about trust and if it played a role in the interactions, the interviewee responded by saying it either did not play or role or was insignificant. Most of the interviewees³² were placed into one of these four categories. These categories helped facilitate a greater synthesis of the interview data to further explore the contentions made in the literature about trust and its role in these interactions.

The last theme that the interview data was arranged around involved the challenges, obstacles, and barriers that the interviewee saw surrounding interactions with inspectors/facility personnel and environmental regulation more generally. As with the nature of interactions, essential

³² Five of the 22 inspectors were not placed into any of these categories because they were not asked about trust. Three of the inspectors were the first to be interviewed and were not asked about trust. As the propositions presented earlier in this research indicate, I expected to find little evidence of trust and positive relationships between inspectors and facility personnel and believed that the evidence would emerge to substantiate such a claim without specifically asking about trust. However, it quickly became evidence that trust was evident and modifications were made to the interview questions. Two inspectors interviewed later were not asked about trust because the interviews did not follow the format I envisioned, since each of these two inspectors had clear agendas they wanted to communicate to me and thwarted all of my efforts to regain control of the interview itself.

elements of good interactions and indicators of trust, a large list was compiled from the interview narratives that focused on common challenges that inspectors and facility personnel discussed. As with the other lists, similarities quickly appeared, and the most frequently mentioned challenges were fashioned into a list for further review. Additionally, the list of challenges was compared to indicators of trust to allow for any observations to be made about the challenges and how they might or might not have an impact trust in the interactions between the parties.

For the third step in the data analysis, I went back through each of the themes previously identified and explored whether any of my control variables (region,³³ sex,³⁴ media,³⁵ facility type,³⁶ and years of experience of the interviewee in their current job³⁷) allowed for any deeper understanding of the interview findings. In other words, besides analyzing the data on the basis of whether the interviewee was an inspector or an employee at a regulated facility, I conducted another round of analysis that examined each of the themes based upon the regions, environmental media, sex, type of facility, and years of experience in the present job of those interviewed. This step was important to allow for examination of the interview findings based on different factors such as

³³ It is important to note that while it was easy to place an inspector into one of the seven DEQ regions, it was more challenging to do so for facility personnel. While facilities are assigned to different DEQ regions, a facility contact is often responsible for multiple sites that can be in multiple regions. For example, I spoke with one individual who was responsible for pipelines and storage tanks in several DEQ regions. To classify this person on the region variable, I went by the information provided by DEQ in the FOIA request previously detailed and assigned the individual to the region for which his/her contact information was listed.

³⁴ Sex was easy to determine for the interviews I conducted in person; however, I should note that slightly more than half of my interviews were conducted via the telephone, and I was not able to visually corroborate my assessment of an interviewee's sex. Despite this, I am confident of my sex determinations of interviewees based on voice characteristics and names.

³⁵ The control variable of environmental media was only assigned to inspectors since they function in one particular media. The majority of the facility personnel I interviewed deal with environmental issues in multiple media so it would be unwise to place them in one media over another.

³⁶ Facility type applied only to facility personnel since all the inspectors worked for one organization. Facilities were broadly categorized into the following types: government/public agency (e.g. public wastewater treatment plant or military base), manufacturing operations, farms and/or food production, landfills/waste management, quarries/construction, service providers (e.g. medical facilities, dry cleaners), and energy production, storage, and transportation.

³⁷ Years of experience was asked of each inspector interviewed and of 18 of the 22 facility personnel. The years of experience were included based on the number of years the individual had been in his/her current job rather than simply how many years he/she may have worked for DEQ or a given company. Often, inspectors change environmental media or have experience as an inspector in other states. I chose not to count those as years of experience because I wanted to focus on the years of experience in the particular setting that the individual was currently in.

geographic region. This step was crucial in permitting me to more fully explore the data obtained through the interviews.

The final step in the data analysis was a repeat of the first step – a thorough review of all the interview notes and narratives to make additional notes about themes or other factors that had not been encapsulated in other facets of the data analysis. It is important to note that throughout the data analysis phase, I kept a notebook to capture any observations, ideas, and so forth that I came across in my more systematic review of the data. I periodically reviewed this notebook to see what additional ideas and factors merited further analysis.

Limitations

Before exploring the insights the data yielded, it is important to consider the various limitations with this research. The various steps of the study include several limitations: research design, sampling, data collection, and data analysis.

First, a qualitative approach was selected for this study because such an approach is well suited for studying the complexities of relationships – the focal point of the study. Additionally, the interviews employed open ended questions to ascertain the respondents' views of the different factors impacting the relationships between front-line workers rather than simply relying on the scarce research on the topic and my own ideas. However, as Berry (2002) correctly notes, with the value and flexibility of open ended questions, reliability and validity concerns are exacerbated, which he calls the “paradox of elite interviews.” Regarding reliability, there is a concern over the ability to reproduce this study at a later time in another place; unfortunately, the ability to dispel such concerns is limited given the methodological approach taken. Steps were taken to formulate specific questions to ask each interviewee (see Appendix A) along with potential probes or follow-up questions; however, by no means was every interview the same. With the interview questions, though, attempts at reproducing this study can be made. Furthermore, if one were to go back and

interview all the individuals included in this study using the same interview questions, there is a possibility that a different interviewer could interpret the responses in a slightly different way than I did. Unfortunately, these are the concerns inherent in qualitative interviews and associated with synchronic reliability (Kirk and Miller 1986). Since I was the only person conducting the interviews, worry surrounding diachronic reliability is mitigated because I carried out each interview and made every effort to handle similar situations in comparable ways. Additionally, when I inquired about trust explicitly at the end of the interview (if the respondent had not already brought it up), I did not define trust for the interviewee (nor did any of them ask me to do so). Therefore, interviewees may have had entirely different conceptions of trust and what trust meant in the interaction between inspectors and facility personnel.

Regarding sampling of the research population for inclusion in this study, several external validity concerns need to be addressed. Interviewees were not completely selected randomly. Access to inspectors largely was determined by the responsiveness of the inspectors' supervisors to my requests for interviews and then the inspectors' self-selection for interviews. Unfortunately, this resulted in some overrepresentation of particular environmental media and particular regions. For instance, more than half of the inspectors interviewed were air inspectors and only four were water inspectors. Additionally, 11 of the 44 interviewees were from one of the seven regions in Virginia (the West Central region). As representation issues became a concern, I made more concerted efforts to secure interviews with inspectors in underrepresented medias and regions, but this did not always work out as well as I would have liked.

In terms of setting up interviews with facility personnel, requests for interviews initially were made from a random sort of data DEQ provided. Although information about which facilities are regulated in Virginia is public, the data provided to me were only as good as DEQ's records. In a number of instances, the facility information I was given was incorrect or missing, and I attempted

to follow up with those facilities as phone numbers and the like had changed but was not always able to do so. Further, after making initial inquiries for interviews, I determined that the need to have a representative selection of facilities in my study to address the research aims outweighed concerns about drawing a random sample of facility personnel and small numbers decrease the value of randomization. Therefore, as interviews with source personnel progressed, I made efforts to ensure that a diverse group of facilities was included.

In the end, interviews were only conducted with a relatively small number of individuals (44). As a result of the small sample of individuals who participated, one must be cautious of how representative the opinions and experiences of these individuals are of the larger population of inspectors and facility personnel in Virginia. Moreover, because of access issues that are discussed below, the diversity of inspectors and facility personnel is not ideal. For instance, although I made every effort to talk to employees of an array of facilities, I was not able to talk with a representative of a primary or secondary public school in the state. Additionally, while I spoke to inspectors in the air, water, and waste divisions, one media, air, is overrepresented. Relatedly, approximately 14 percent of inspectors (based on budgeted, not actual inspector figures³⁸) and fewer than one percent of facility personnel were interviewed. Clearly, these figures are cause for concern. However, it is important to note that the primary aim of this research is to explore this often negated aspect of environmental regulation and establish a starting point for future research with much larger sample sizes.

With both groups of interviewees, possible nonresponse bias (produced by both the inability to access some members of the population and those individuals who turned down or ignored requests for interviews) is a concern. However, because the data gathered from the interviewees overwhelmingly suggested similar interactions between inspectors and facility personnel, the issue of

³⁸ The figures are based on budgeted positions because those were the data DEQ provided via a FOIA request in August 2007.

nonresponse bias may not be as significant as it might have been if the interview responses had varied greatly.

The data collection raised additional validity concerns. First, descriptive validity, or the accuracy of my recording of what I heard during the interviews, must be considered. I made every effort to take as detailed notes as possible during the interview, ask questions if I needed clarification about a point the interviewee was making, and go back through the interview notes shortly after the completion of the interview to fill in any gaps in my notes before my recollections of the interview faded. There also is some reason to be concerned about the actual responses of the interviewees and wonder whether those responses were truthful or whether they were the answers that interviewees thought I wanted to hear; as Berry (2002) astutely notes, interviewees have no obligation to tell the truth, whereas I do. I did my best to allay any worry over socially desirable responses in a number of ways. First, the interviews were not recorded to provide interviewees with “deniability.” Second, I assured the interviewees from the outset that their identities would be kept strictly confidential. Third, I made every effort to phrase questions as neutrally as possible so as to show no favoritism toward either inspectors and their actions or facility personnel and their actions. Finally, I asked about interactions in several different ways to see if the interviewee’s response would be different. For instance, after asking about interactions between inspectors and facility personnel, I also asked for stories about those interactions to see if the stories were consistent with the general comments. I believe I was quite successful in this regard because of both the range of stories that were conveyed to me and the mentions of specific names of counterparts who were “good” and those who were not.

Other limitations include my lack of experience in conducting interviews. The quality of interviews rests heavily on the abilities of the interviewer. Although I made every effort to be as well prepared for these interviews as possible through extensive reading and conversations with

other seasoned interviewers, I had not done qualitative interviewing before. I did conduct several pilot interviews to practice questions, however, to test my ability to take sufficient notes, and to see if I could elicit adequate discussions about the relationships at the center of my research. The pilot interviews were wonderful in this regard. I recall after one in particular my astonishment at the difficulty associated with qualitative interviews. I was very fortunate to conduct my first pilot interview with a key insider who proved extremely helpful because she often stopped me after I read a question and asked me what I was getting at and then she helped me rephrase my question to make it clearer.

A final limitation of the data collection is the issue of construct validity and whether I was able to obtain valid data about the relationships through the questions I asked and the discussions elicited in the interviews. Repeated mention has been made of the lack of research on this topic. As such, I was unable to use a previously tested set of questions for my interviews and was instead left to devising my own questions based on what the literature offered about these relationships. Therefore, the degree of construct validity in my research is not as high as it might be, but therein lies one of the challenges of conducting research that has not been done before.

Other limitations are associated with the data analysis portion of my research. Concerns over interpretative validity, or the accuracy with which I understood the responses of my interviewees, arose during data analysis. Since the interviews were not recorded, I had to rely on my notes from the interviews to garner clear understandings of what the interviewee meant. In an effort to lessen the concern over interpretative validity, I took several steps. First, to determine if the interviewee meant what he/she said, I asked for the same information in several ways. For example, I asked about the nature of the interactions between inspectors and facility personnel. Then I asked for the interviewee to provide stories about those interactions to see if the general comments he/she made were supported by the stories and the discussion after the stories about the

interactions again. This served as a way to confirm my analysis of what the interviewee said. I was cognizant of my influence on the interview through pauses, tone of voice, and other mannerisms. I attempted to mitigate any ill effects of these factors by being aware of my body language and mannerisms during the interviews and curbing such behaviors to the best of my ability.

Lastly, generalizability must be considered. As Johnson (2002) notes, research of this nature cannot be generalized easily to broader populations. While limiting the research to a single state has its advantages, it also has its limitations – most notably with generalizability. However, Yin (1989) notes that analytical generalizability is possible. The results of this research may be generalizable to the theoretical constructs of the research even if the findings about interactions in Virginia between inspectors and facility personnel may not be generalizable to other states.

Undoubtedly, there are limitations and validity concerns with any study, but I believe that I have addressed as many of them as possible in the design and execution of this research. Furthermore, the remaining limitations must be taken into account, but as the next chapter elaborates, the results of my interviews are so unexpected and consistent that they arguably lessen concern about the study's limitations.

Conclusion

Given the complexities in exploring relationships, including the interactions of inspectors and facility personnel, a qualitative approach proved useful for this research. The data obtained through interviews provided fascinating insights into the interactions of environmental compliance inspectors and facility personnel in Virginia that largely contradict prevailing assumptions of these interactions. The structure of these interviews allowed for a more candid conversation with interviewees and their results, as discussed in the following chapter, may be potentially significant for broader environmental policy discussions.

CHAPTER FIVE
THE INTERACTIONS OF INSPECTORS AND FACILITY PERSONNEL

“I put my trust in you...”
- Linkin Park

The interactions of inspectors and facility personnel are important for a more comprehensive understanding of environmental regulation. The qualitative interviews the last chapter described provide a fascinating glimpse into the front-lines of environmental regulation. Overall, the analysis of interviews provides evidence that the interactions between inspectors and facility personnel are notably better than one might conclude after reviewing the general comments in the environmental regulation literature. The existing literature would lead one to conclude that trust is a significant problem in environmental regulation, but the findings from the interviews do not substantiate such claims.

Needless to say, the implications of this research have considerable potential for environmental policy discussions. First, however, this chapter will provide a systematic look at the results of the interviews and analyze them. After describing the characteristics of the interviewees, I explore the four key themes that guided my data analysis: elements of “good” interactions, nature of the actual interactions, presence and significance of trust in the interactions and the challenges and obstacles in the interactions. The chapter closes with a discussion of the broad conclusions that can be drawn from these interviews.

Characteristics of Interviewees

A total of 44 individuals were interviewed¹ for this research, and efforts were made to ensure the interviewees were a diverse group to allow for greater generalizability of the research findings. As the last chapter noted, the majority of the inspectors were interviewed before the facility personnel, so the characteristics of the inspectors are considered first.

¹ The interviews generally lasted about one hour, although they ranged from 35 minutes to 75 minutes in length.

Inspectors

Twenty-two inspectors were interviewed. Table 5.1 provides a snapshot of the 22 inspectors I interviewed along with the regions and media they represented.

Table 5.1
Characteristics of Inspectors Interviewed

	West Central	Southwest	South Central	Piedmont	Valley	Northern	Tidewater	<i>Totals</i>
Air	4	3	1	2	2	1	0	13
Water	0	0	2	0	0	0	2	4
Waste	2	0	0	1	0	1	1	5
<i>Totals</i>	6	3	3	3	2	2	3	22

First, there clearly is an overrepresentation of air inspectors compared to both water and waste inspectors, largely because of access issues previously described. Second, there also is an overrepresentation of inspectors from the West Central region of the state compared to the other six regions. This factor probably can be explained by my geographical proximity to the West Central Regional Office (located in Roanoke, Virginia) during the interview portion of the research or because I started my interviews there.

Several other characteristics of inspectors are of interest at this juncture. Of the inspectors I interviewed, 73 percent were male.² Such a large percentage of male inspectors is to be expected as most of DEQ inspectors are male. Additionally, I inquired into the number of years each inspector had been an inspector in the particular media he/she currently works with. The mean number of years of experience for the inspectors was 8.48 years, with a standard deviation of 9.06 years. This is indicative of the sizable variation in the number of years of experience of each inspector. For instance, some inspectors had upwards of 20 or even 30 years of experience while others have been on the job for a year or less; indeed, the most frequently cited amount of time on the job was one

² I interviewed 16 male inspectors and 6 female inspectors.

year. The median was 5.5 years and the mode was one year. Clearly, the experience and expertise of inspectors varied widely.

I interviewed a diverse group of 22 inspectors which is, of course, important for the validity of any research.³ Although it would be possible to provide more detailed information about where the female and male inspectors were located geographically or by media, I have elected not to divulge such information because I assured each interviewee of confidentiality; because there are only a few inspectors in some regions, if I provided a more detailed breakdown of these characteristics, it would be increasingly easy to determine which inspectors I interviewed.

Facility Personnel

Similar characteristics were compiled for the 22 facility personnel I interviewed and they too comprise a diverse sample.

Table 5.2
Facility Personnel by Region

West Central	Southwest	South Central	Piedmont	Valley	Northern	Tidewater	<i>Totals</i>
5	3	3	3	4	2	2	22

The regional representation of the facility personnel (see Table 5.2) is much more evenly distributed than the inspectors, with the exception of the West Central region. As with the inspectors, I suspect that the overrepresentation of this region is due to my affiliation with a major university in the region.⁴ It is important to recall that I placed a facility in a particular region based upon the regional spreadsheet from which I obtained the facility’s contact information (from DEQ data) even though I often spoke with facility personnel that were responsible for several sites located in multiple

³ Although I am generally confident in the diversity of my sample of inspectors, it is difficult to make absolute statements because of the absence of comparable data for all DEQ inspectors. Obtaining the data on years of experience and other variables proved difficult and is not available for comparison here.

⁴ When seeking interviews with facility personnel, I identified myself as a graduate student from Virginia Tech and in the West Central region, and particularly in light of the April 16th tragedy, there is a lot of support for Virginia Tech.

regions. This was a concern with five of the 22 facility personnel who were responsible for multiple sites in a number of regions.

The sampling strategy I outlined in the last chapter enabled me to draw a diverse array of facilities for inclusion. Table 5.3 summarizes the different types of facilities whose officials I interviewed and arranges them in various categories I devised to permit further analysis.

Table 5.3
Types of Facilities

FACILITY CATEGORY FOR DATA ANALYSIS	FACILITY TYPES
Government/Public	Wastewater Treatment Plant (2)
	Military Base
	Prison
Manufacturer	Community College
	Paint Manufacturer
	Paper & Cardboard Manufacturer
	Lock Manufacturer
Farm/Food Production	Furniture Manufacturer (2)
	Poultry Farm and Processor
Landfill/Waste Management	Dairy Farm
	Landfill (2)
Quarry & Construction	Construction Company
	Quarry
Service Provider	Auto Body Shop
	Dry Cleaners
	Hospital
Energy Production, Storage, & Transportation	Fuel Storage Company
	Power Production
	Gas Storage and Transportation Company

This list of facilities whose officials I interviewed demonstrates the diverse assortment of facilities that were included in the study. Among these facilities were three that could be considered among DEQ’s “Best”, one of those facilities also is a member of EPA’s Performance Track program. Included, as well, were two facilities that had consent orders pending during the interview stage of this research, and were thereby classified as some of DEQ’s “worst.” Again, to ensure confidentiality of all interviewees, the identities of those facilities will not be disclosed even though

facilities that have pending consent orders and that are members of VEEP are a matter of public record.

As with the inspectors, the majority of the facility personnel I interviewed were male (82 percent).⁵ Again, this is not surprising: the environmental health and safety profession is largely dominated by males because of the backgrounds in environmental sciences and engineering that are generally required for such positions and that traditionally have not attracted as many women.

Also of note are the years of experience of the facility personnel.⁶ The mean number of years of experience of facility personnel is 10.67 years, nearly two and a half years more than the average for inspectors. The median is 8 years with modes of 0.5, 5.5, and 9 years. The sample size in this research is too small to make any definitive conclusions, but this difference indicates that facility personnel appear to have more experience than inspectors.⁷ The standard deviation of facility personnel is similar to that of inspectors at 9.14 years, indicating that there also is tremendous variation in the number of years of experience of facility personnel. In fact, there were several modes for years of experience among facility personnel, they were less than one year, five and a half years, and nine years. Even here, it is clear that there is significant variation in the years of experience of facility personnel.

Interview Findings by Theme

Attention now turns to exploring the interview findings of the four themes identified: elements of good interactions, nature of the actual interactions, presence and significance of trust, and the challenges and obstacles in these interactions. It is important to note that the interviews were not conducted in the order that the results are presented in this chapter.⁸ Rather than

⁵ Eighteen males and four females were interviewed.

⁶ Unfortunately, years of experience data are missing for four of the 22 facility personnel because either the interviewee did not disclose the information or I was unable to follow up and obtain it.

⁷ However, it is important to note that some inspectors may have more years of experience in a different media.

⁸ For a better understanding of the question sequence, please refer to Appendix A.

presenting the findings in the rough order of interview questions, I elected to disseminate the findings in a more deductive manner surrounding the question of trust. Additionally, I have included stories conveyed by the interviewees where appropriate to help more fully describe the nature of these interactions. It is important to note that interviewees are not selected “based on their skills as storytellers”; thus, the stories sometimes may seem sparse and unfulfilling (Maynard-Moody and Musheno 2003, 33).

Essential Elements of Good Interactions

In the course of the interviews, the interviewee was asked what he/she thought were the “essential elements” of “good” interactions between inspectors and facility personnel. Understanding what the interviewee thought was essential to these interactions is important to contextualize questions about what the actual interactions are like and whether or not trust is a component of them. Table 5.4 details the inspectors’ most frequently cited essential elements of good interactions, ranked by the frequency of their mention.

**Table 5.4
Inspectors’ Elements of Good Interactions with Facility Personnel⁹**

ELEMENT	PERCENTAGE
Set facility personnel at ease, explain why inspector is there, be upfront	36.36 (N=8)
Be cooperative and set the tone of a willingness to work together	36.36 (N=8)
Foster communication and open dialogue	31.82 (N=7)
Knowledgeable facility personnel about permit, regulations, expectations of inspection	22.73 (N=5)
Show interest in facility’s operations beyond DEQ’s primary interests	18.18 (N=4)
Establish relationship and rapport with facility personnel	18.18 (N=4)

⁹ The figures represented in this table include all mentions by inspectors. The percentages do not equal 100 as some inspectors indicated multiple essential elements.

The genesis for many of these essential elements undoubtedly comes from the varied experiences of the inspectors. These experiences are illustrated through several stories. One air inspector conveyed his experiences with a printing facility. The inspector was at the facility conducting a routine inspection and noted that the rag buckets were uncovered – a permit violation. The facility personnel accompanying the inspector on his inspection were encouraged to remedy the problem so they would not face a penalty. However, the facility official did not take the opportunity to do so. This experience shows inspectors desiring facility personnel to be cooperative and be receptive to open communications. A water inspector noted that showing an interest in a facility, beyond the inspector’s reasons for being there, goes a long way in building a relationship with the facility personnel. This inspector was visiting a poultry processing plant and eagerly took the facility tour, complete with a trip to the “kill floor.” At the close of the visit, the inspector was surprised to observe how pleased the facility official was that the inspector took a genuine interest in the facility’s operation and the facility official had an opportunity to put his company’s work on display. Finally, another air inspector was working with a paper and cardboard manufacturer that needed to switch to a fuel that contained a higher sulfur content for production purposes. The facility official was unsure what permit modifications might be needed, so the official contacted the inspector so that they could work together to figure out what steps the facility needed to take to switch fuels.

Perhaps the most striking observation from the list in Table 5.4 is the emphasis the inspectors placed upon working *with*, and not against, the facility personnel. The inspectors appear to place a greater stress on what they can and should do in the course of their interactions, such as explaining why they are at a facility and fostering open communication in their dealings with of facility personnel. Only one of the elements in Table 5.4 places expectations on facility personnel themselves and that expectation is simply that facility officials know about the specific permit and

appropriate environmental regulations. Overall, inspectors indicated that they desire a working relationship with facility personnel.

Even more striking about the essential elements of good interactions the inspectors cited is the connection between these elements and indicators of trust. All 22 inspectors interviewed (1) explicitly said that trust or an indicator of trust was an essential element without prompting (N=4), (2) stated that an indicator of trust was an essential element but it was unclear as to whether I noted the indicator or the interviewee explicitly stated the indicator of trust during the interview (N=10), or (3) suggested through a story that an indicator of trust was an essential element of good interactions between inspectors and facility personnel (N=22). The significance of trust is further evident in a closer examination of each of the elements of good interactions. Comparing these elements with the trust indicators summarized in Table 3.3 demonstrates that most of these essential elements most frequently mentioned by inspectors are indicators of trust (see Table 5.5).

Table 5.5
Inspectors' Elements of Good Interactions and Indicators of Trust

ELEMENT	INDICATOR OF TRUST
Set facility personnel at ease, explain why inspector is there, be upfront	Data flow of information and perceptions
Be cooperative and set the tone of a willingness to work together	Cooperation
Foster communication and open dialogue	Communication with Others
Knowledgeable facility personnel about permit, regulations, expectations of inspection	Ability Competence
Show interest in facility's operations beyond DEQ's primary interests	Concern for Others
Establish relationship and rapport with facility personnel	<i>no clear connection with trust indicator</i>

Of course, these are simply indications of what inspectors desire their interactions with facility personnel to be rather than what they actually are; nonetheless, the results are evidence of the reported significance of trust to inspectors.

Facility personnel also were asked about the essential elements of good interactions with inspectors. The most frequently cited essential elements are listed in Table 5.6.

Table 5.6
Facility Personnel’s Elements of Good Interactions with Inspectors¹⁰

ELEMENT	PERCENTAGE
Having an inspector there to work with you, work together, partner	31.82 (N=7)
Dealing with an inspector who has experience and knowledge, understands facility operations	22.73 (N=5)
Open and straightforward communication	22.73 (N=5)
Providing help with problems	18.18 (N=4)

The facility personnel conveyed a number of stories that illustrate some of the elements of good interactions with inspectors that are noted in Table 5.6. One local municipality encountered a problem with one of its underground storage tanks (USTs). The facility official I spoke with said that once the locality discovered the leaking UST, officials were not completely confident about what to do. She decided that it would be best if she called her DEQ inspector and asked for help. According to the facility official, the inspector was great and they “work[ed] together” to stop the leak and devise a plan to prevent future leaks from the town’s USTs. Similarly, an official with a paving and asphalt company talked about an inspector that he dealt with who was good to work with. This inspector is “straightforward and upfront” with the facility personnel and will call the corporate office after an inspection “to give them a run down on what’s gone on, what’s good, what’s not so good.” This official said he appreciated having a “good working relationship” with this inspector.

Facility personnel also put more of the responsibility for good interactions with inspectors on the shoulders of the inspectors: the facility personnel want inspectors to work with them, to have

¹⁰ The figures represented in this table include all mentions by facility personnel; the percentages do not equal 100 as some inspectors indicated multiple essential elements.

knowledge, and to help solve problems. Facility personnel infrequently placed the burden of good interactions with inspectors on themselves. Despite the burden they placed on the inspectors, facility personnel indicated that ideally they want a working relationship with inspectors, much as inspectors want a working relationship with them.

As with inspectors, the essential elements of good interactions that facility personnel cite also point to indicators of trust. Of the 22 facility personnel I spoke with, 17 (1) explicitly said that trust or an indicator of trust was an essential element without prompting (N=1), (2) stated an indicator of trust was an essential element but it was unclear as to whether I noted the indicator or the interviewee explicitly stated the indicator of trust during the interview (N=8), or (3) indicated through a story that an indicator of trust was an essential element of good interactions between inspectors and facility personnel (N=17). In other words, approximately 77 percent of facility personnel interviewed said or implied an indicator of trust as an essential element of good interactions between them and inspectors. Table 5.7 shows the indicators of trust (based on Kim [2005]) that facility personnel included among the top essential elements of good interactions.

Table 5.7
Facility Personnel’s Elements of Good Interactions and Trust Indicators

ELEMENT	INDICATOR OF TRUST
Having an inspector there to work with you, work together, partner	Cooperation
Dealing with an inspector who has experience and knowledge, understands facility operations	Ability Competence
Open and straightforward communication	Data flow of information Openness Communication
Providing help with problems	<i>no clear connection with trust indicator</i>

Although facility personnel were more apt to place the responsibility for good interactions on inspectors, they also desired interactions with inspectors that bear hallmarks of trust, much as the inspectors did.

Disaggregating the findings on essential elements using the control variables lends additional insight. First, when the elements were broken down by region of the state, there was some variation in responses. In both the West Central and the Valley regions, about half of the interviewees, both inspectors and facility personnel, said that they wanted an attitude of assistance, cooperation, and desire to work together in their interactions. Two-thirds of the interviewees in the South Central region stressed communication and dialogue as an essential element of good interaction. All of the interviewees in the Tidewater region stressed that the inspectors should provide information and education to help the facility personnel achieve and sustain compliance. Interestingly, half of the respondents in the Piedmont region said that the facilities should have all appropriate records and keep them organized as an essential element of good interactions.

Turning to the indicators of trust, all of the interviewees from three regions -- Piedmont, Valley, and Tidewater -- specified trust or an indicator of trust as an essential element of good interactions between inspectors and facility personnel. Of the remaining four regions, the lowest percentage of interviewees indicating trust was part of essential elements worked in the Southwest regional office.

Second, possible relationships between essential elements and environmental media can be examined. Only inspectors were classified into media for the purposes of analyzing the interview themes by control variables because facility personnel frequently are tasked with environmental compliance in multiple media and classifying them into one particular media for this purpose would be inappropriate.

Table 5.8
Top Essential Elements by Inspector Type

INSPECTOR TYPE	TOP ESSENTIAL ELEMENTS
Air Inspector (N=13)	Being upfront and setting facility personnel at ease (N=6) Communication/Open Dialogue (N=4)
Water Inspectors (N=4)	Communication/Open Dialogue (N=2) Explaining Problems/Issues (N=2)

Waste Inspectors (N=5)	Cooperation/Willingness to work together (N=3) Communication/Open Dialogue (N=3)
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Table 5.8 conveys the top essential elements mentioned by air, water, and waste inspectors. In addition to these elements, all inspectors indicated trust or an indicator of trust was an essential element to good interactions.

The third control variable was sex. Fifty percent of the women interviewed said that communication between the parties and providing (and asking for) help were important elements of good interactions between inspectors and facility personnel. The women interviewed more consistently indicated similar essential elements as compared to the men. The largest number of men who indicated a similar essential element was only eight out of 34 (approximately 24 percent). These male respondents noted that cooperation and a willingness to work together, along with having appropriate knowledge and experience were the two essential elements mentioned. The relatively lower consistency in male responses may be explained by the much larger number of men who were interviewed (34) than women (10). Even though definitive conclusions are not possible, it is interesting to note that women were more apt to emphasize communication as well as asking and providing help as essential elements for good interactions than men. In terms of indicators of trust among men and women, 90 percent of women interviewed, compared to 88 percent of the men, said trust or an indicator of trust was an essential element of interactions between inspectors and facility personnel.

A fourth control variable was the type of facility operation. Little insight could be gained from exploring essential elements by this control variable, mostly due to the small number of facilities in each category. There was a bit more to discern related to trust and its indicators among facility types. All of the individuals in the following kinds of facilities said either trust or an indicator of trust was an essential element of good interactions between inspectors and facility personnel:

farm/food production, landfills, and quarries/construction. Manufacturers and energy producers were the least likely to say trust or an indicator of trust was an essential element, with 60 percent and 67 percent of facility officials indicating trust, respectively.

The final control variable was the number of years of experience of the interviewee. Of those individuals who were relatively new to their positions (having been in them for three years or less), nearly 55 percent said it was important to be straightforward with the other party to help set him/her at ease. No other experience category indicated this element. Additionally, those individuals with 13 or more years of experience were more likely than those in other categories to report that an essential element of good interactions was providing assistance to the other party to help solve (or ameliorate) problems (nearly 56 percent). No other relationships appeared between years of experience and reported essential elements. For instance, mentioned throughout the range of years of experience were the need for cooperation and a willingness to work together for good interactions.

When trust is examined, some differences do emerge when years of experience are considered. Trust and its indicators for good interactions are high for relatively new employees (zero to three years experience), with 91 percent of interviewees noting trust or an indicator of trust among the essential elements. This level drops noticeably – down to 63 percent - for those with four to six years of experience. The figure rebounds to 86 percent among those with seven to nine years experience and then jumps to 100 percent for those with 10 or more years of experience. Thus, while there is an initial emphasis on trust and its indicators between inspectors and facility personnel upon starting a particular job, something evidently happens to diminish the focus on trust before an emphasis on trust reaches even higher levels. There is no clear explanation for this finding. Perhaps after trust levels initially decline, some individuals leave their positions (notably

inspectors, for whom there is high turnover¹¹) and those that remain are more inclined to trust and work on building and maintaining trust with their front-line counterparts.

These findings point to the importance of trust in the interactions between inspectors and facility personnel even before one explores the nature of the actual interactions between these two actors. When asked about the essential elements of good interactions between inspectors and facility personnel, nearly 91 percent of the people I interviewed said trust or an indicator of trust was important to good interactions. The question that now arises is how these comments compare with the characteristics of good inspectors and facility personnel detailed in Chapter Three.

In Chapter Three, I provided an overview of the characteristics of “good” inspectors and “good” facility personnel based on the limited scholarly literature available. Those characteristics can be compared to the essential elements the individuals I interviewed noted. Such a comparison is imperfect because I asked interviewees about elements of good interactions rather than good characteristics of either themselves or the other party; the literature discusses good characteristics of the individuals. Table 5.9 recaps the characteristics of good inspectors and what, if any, mention either inspectors or facility personnel made of those characteristics.

Table 5.9
Comparison of “Good” Inspectors Characteristics and Interviewees’ Comments

CHARACTERISTICS OF GOOD INSPECTORS FROM LITERATURE	MENTIONS BY INSPECTORS	MENTIONS BY FACILITY PERSONNEL
Is able to resolve disputes	Mentioned once (conflict resolution)	Mentioned indirectly once (desire to find resolution)
Avoids adversarial relations	Mentioned some (attitude) [3]	Mentioned indirectly once (don’t act defensive)

¹¹ The turnover among DEQ inspectors is high for a number of reasons. First, inspectors are entry-level positions in the agency, and many individuals are inspectors just long enough for them to be able to move up in the agency. Second, inspectors often get more lucrative job offers from the private sector through the numerous contacts they form as inspectors. Third, inspectors often grow weary of the demands of being an inspector coupled with relatively low pay and look for opportunities elsewhere. High turnover levels among inspectors may be significant for several reasons. First, facility personnel often interact with new inspectors; therefore, relationships are much harder to forge. Second, routinely having to deal with different inspectors can leave facility personnel frustrated since they do not have a consistent point of contact within one environmental media at DEQ. All of these factors can impact the nature of the relationships between inspectors and facility personnel.

Avoids zealotry	Mentioned indirectly (no “Barney Fife”) [1]	Mentioned indirectly once (not feeling like they’re the police)
Is cooperative	One of the top essential elements [8]	One of the top essential elements [7]
Empathizes with regulated	Mentioned indirectly twice	Mentioned once
Is fair	<i>Not mentioned</i>	Mentioned once
Is forbearant	Mentioned indirectly (understanding) [2]	<i>Not mentioned</i>
Is friendly	Mentioned indirectly once	Mentioned once
Is patient	<i>Not mentioned</i>	Not mentioned
Possesses knowledge	One of the top essential elements [5]	One of the top essential elements [5]
Provides information	Mentioned some [3]	One of the top essential elements [5]
Is reasonable	Mentioned indirectly (“common sense”)	Mentioned indirectly (“common sense”)
Is reciprocal	Mentioned indirectly (cooperation)	Mentioned indirectly (cooperation)
Is responsive	Mentioned twice	Mentioned once, also mentioned indirectly (availability; assistance/help provision)

When interviewees mentioned elements indirectly, the element of the interaction mentioned is noted in parentheses to indicate which element was connected to which characteristic. Although both inspectors and facility personnel mentioned some of the characteristics of “good” inspectors, others were hardly mentioned (e.g., being empathetic, friendly) or not mentioned at all (e.g., exhibiting fairness, patience, forbearance).

Table 5.10 compares the characteristics of “good” facility personnel described in the literature with the comments made by interviewees.

Table 5.10
Comparison of “Good” Facility Personnel Characteristics and Interviewees’ Comments

CHARACTERISTIC OF GOOD FACILITY PERSONNEL	MENTIONS BY INSPECTORS	MENTIONS BY FACILITY PERSONNEL
Is cooperative	One of top essential elements [8]	One of top essential elements [7]
Has a “good” attitude	Mentioned some (attitude) [3]	Mentioned once
Is helpful	Mentioned some [3]	Mentioned some [3]
Is willing to comply	Mentioned indirectly (want to comply/proactive)	<i>Not mentioned</i>

Interviewees frequently cited one characteristic the literature mentioned (cooperative), while they mentioned other characteristics less often (willingness to comply). These comments could lead one to conclude that inspectors and facility personnel generally value cooperation above all else. Perhaps they believe that if the parties are willing to cooperate, such behavior includes other behaviors that make for good interactions. Additionally, it may not be enough to simply wish to comply, but action is needed – often through cooperation – to achieve desired outcomes.

After this extended discussion of ideal interactions and “good” characteristics of inspectors and facility personnel, it is time to turn to the actual nature of the interactions between inspectors and facility personnel as reported by those interviewed.

Nature of the Actual Interactions

Of particular interest is the nature of the actual interactions that the inspectors and facility personnel discussed in the interviews. Briefly stated, the interactions are quite positive – a finding contrary to what much of the literature would lead one to conclude. Tables 5.11 and 5.12 summarize the terms respondents used when asked to describe the nature of the interactions

between inspectors and facility personnel, generally speaking.¹² Each respondent is counted only once of the categories of interaction descriptions.¹³

Table 5.11
Inspectors' Descriptions of the Nature of Interactions

DESCRIPTION	NUMBER OF INSPECTORS	PERCENTAGE
Great/Good	8	36.4%
Positive	5	22.7%
Cooperative/Get Along Attitude	3	13.6%
Pleasant	2	9.0%
Polite	1	4.5%
Friendly	1	4.5%
Nonconfrontational	1	4.5%
Depends on the size of the facility	1	4.5%

Table 5.12
Facility Personnel's Descriptions of the Nature of Interactions¹⁴

DESCRIPTION	NUMBER OF FACILITY PERSONNEL	PERCENTAGE
Great/Good	9	40.9%
Positive	3	13.6%
Easy to get along with/Good to work with	3	13.6%
Pleasant	1	4.5%
Professional	1	4.5%
Low-key/Not Belligerent	1	4.5%
Some good, some bad	1	4.5%
Middle of the Road Between Good and Bad	1	4.5%
Less than satisfactory	1	4.5%

The majority of interviewees reported that the interactions were good. The worst that an inspector would say about the interactions was that they depended on the size of the facility.¹⁵ On the whole, facility personnel were somewhat less positive about the nature of the interactions. One person

¹² Please see Appendix A for the question wording.

¹³ Specific stories are not included in this section because the interviewees were asked to describe their interactions in a general manner without conveying specific experiences.

¹⁴ One facility official reported he/she has little interaction with inspectors and declined to comment on the nature of interactions generally; thus, N=21.

¹⁵ The inspector who indicated that interactions depend on the size of the facility was referring to facilities that are larger typically have dedicated environmental compliance staff who are more knowledgeable and experienced whereas smaller facilities do not generally have a dedicated environmental staff or an individual who is well versed in environmental compliance. As might be expected, the latter can prove more challenging for an inspector to work with.

called the interactions “less than satisfactory,”¹⁶ one said some interactions were good while others were bad, and one described the interactions as being in between bad and good. Subtracting these three (and possibly four if one counts the inspectors who said it depends on the facility’s size), over 90 percent of the individuals I interviewed said, generally speaking, that the interactions were positive.

As might be expected, these comments varied by the region of the respondent. All of the individuals in the West Central, South Central, Piedmont, Northern,¹⁷ and Tidewater regions indicated that the interactions were positive in one way or another. The Valley region had the greatest number of interviewees who were not positive about their interactions (two out of six interviewees). The two interviewees stated that their interactions were sometimes “good” and sometimes “bad.” Additionally, one individual in the Southwest region also noted that interactions were less than positive.

In terms of media, all the inspectors said the interactions were positive with the exception of one air inspector who responded that the nature of the interactions depended on the size of the facility. Similarly, only slight differences existed in the responses of men and women. Women were somewhat more positive with almost 89 percent indicating the interactions were positive compared with 81 percent of the men.

More differences were observed among facility types when facility officials reported on their interactions with inspectors. All of the facility personnel in the manufacturing and farm/food production categories were positive about their interactions with inspectors. Representatives of service providers and energy facilities also were generally favorable in describing their interactions with inspectors. On the other hand, officials at both landfills were either indifferent or less than

¹⁶ It is worth mentioning that this individual is a former employee of the Virginia Department of Environmental Quality and conveyed to me that he/she had a less than positive experience working for DEQ; this perhaps is important to help contextualize this statement.

¹⁷ One individual in the Northern Virginia region said that the interactions “depend on the size of the facility.”

positive about their interactions with inspectors; neither expressed positive or good sentiments about their interactions. Unfortunately, no ready answer accounts for this finding. Although hazardous waste regulations are strict and set primarily by the federal government, solid waste regulations are much less stringent and set by the state; thus, the impact of the regulations on the nature of the interactions seems unlikely to set the tone of the interactions, particularly because hazardous waste operations were not part of the facility sample.

The last control variable is respondent experience. The few remarks by interviewees about the less than positive nature of their interactions were made by individuals with either less than six years of experience or more than 26 years of experience. This may indicate that upon starting a job, individuals have less positive experiences and then those experiences improve as they learn the job and develop relationships with those they oversee. Over time, however, the interactions are less than positive after decades in a particular position; this may be the result of complacency or becoming jaded or frustrated in a position and not following the same people over time. Although this is an interesting finding, it is important to note that only three or four (depending upon whether the “depends on the facility size” remark is counted as an overall indication of negative interactions) of the individuals interviewed called the interactions were less than positive.

It is important not to draw firm conclusions about the impact of regions, facility type, or years of experience or variation on the nature of the interactions between inspectors and facility personnel. Again, over 90 percent of the individuals I interviewed described the interactions between inspectors and facility personnel as generally positive and this finding is significant.

Presence and Significance of Trust

More central to the question at the core of this research is the presence and significance of trust in the actual interactions between inspectors and facility personnel. To ascertain the presence of trust in the interactions between inspectors and facility personnel, I analyzed the responses of interviewees about the general nature of their interactions. To corroborate those responses, I also analyzed the specific stories they offered about their interactions. In coding the interviews, I followed several steps. First, if the interviewee expressly mentioned trust or an indicator of trust (based on Kim [2005]), the response was coded one way. Second, if the notes of the interviewee's response contained an explicit mention of trust or an indicator of trust but the notes were unclear as to whether the interviewee or I said/wrote the indicator, then the response was coded a second way. Third, if a story or description implied or suggested trust or an indicator of trust, the response was coded a third way.

Overall, a majority (61.4 percent) of interviewees gave indicated that trust was present in the interactions. Most inspectors conveyed the presence of trust in their interactions with facility personnel both in their responses to general inquiries about the nature of the interactions and in the stories used to illustrate those interactions. In their responses, 16 out of 22 (72.7 percent) of inspectors mentioned trust, an indicator of trust, or implied an indicator of trust in describing the interactions with facility personnel in general. Slightly fewer, 15 of 22 (68.2 percent) of inspectors referred to trust, an indicator of trust, or an implied indicator of trust in telling a story of a "good" interaction between themselves and facility personnel. When asked about trust and if it matters in their interactions with facility personnel, the most frequent response was "yes" (N=16 out of 17 or 94 percent). In fact, one inspector said, "you've got to [trust]." Another inspector said he didn't "see how you can be an inspector without it [trust]."

Evidence of trust appears in the responses of facility personnel as well, although to a lesser degree. Half of the 22 facility personnel mentioned trust, an indicator of trust, or implied an indicator of trust in detailing their interactions with inspectors generally. Moreover, 50 percent of facility personnel mentioned trust, an indicator of trust, or an implied indicator of trust in describing a story of a “good” interaction between themselves and inspectors. The most frequent response of facility personnel to inquiries about the presence and importance of trust was “absolutely” or “definitely” (N=6 or 27 percent). One individual indicated that trust was “common sense” in the interactions with inspectors. Another stated that “without it [trust], it [environmental regulation] wouldn’t work.” More tellingly, another facility representative observed: “I don’t trust any government agency, but they’ve (DEQ inspectors) earned some of my trust over the years.”

Additional exploration of these findings produces more fine-grained observations. The presence of trust in the interactions varied dramatically by region. All five interviewees in the Northern Virginia region indicated trust was present in the interactions between inspectors and facility personnel. This contrasts sharply to only one of six interviewees in the Piedmont region who revealed trust in their interactions. Table 5.13 includes data for all the regions.

Table 5.13
Presence of Trust in Interactions by Region

REGION	PERCENTAGE OF INTERVIEWEES INDICATING PRESENCE OF TRUST IN INTERACTIONS
Northern Virginia (N=5)	100%
Tidewater (N=5)	80%
West Central (N=11)	73%
South Central (N=6)	67%
Southwest (N=6)	50%
Valley (N=5)	50%
Piedmont (N=6)	17%

These results are perplexing when compared to the presence of trust indicated in the stories the interviewees relayed to me. When analyzing the stories, I found that Northern Virginia respondents

displayed the least amount of trust in the interactions (25 percent); individuals in the other regions also are ranked differently: Valley 83 percent, Tidewater 80 percent, Southwest 67 percent, West Central 64 percent, Piedmont 50 percent, South Central 33 percent, and Northern Virginia 25 percent. The lack of consistency in these findings is bewildering. An explanation may lie in the fact that for a variety of reasons, many of the facility personnel did not provide stories to illustrate their interactions with inspectors and their omissions may help explain the fluctuation in the ordering of regions with the presence of trust.¹⁸ Another explanation may be that interviewees selected stories, both good and bad, that stuck out in their minds to relay to me; those stories may reflect the extremes of the interviewees' experiences rather than the norm.

The differences between overall responses and specific stories also are evident in analysis of other control variables. For example, air inspectors were more likely than waste and water inspectors to indicate trust was present in their interactions. Of the air inspectors interviewed, 85 percent (11) said or implied trust was present in their interactions with facility personnel.¹⁹ This compares to only 60 percent (5) and 50 percent (4) of waste and water inspectors respectively.²⁰ Although these are lower than the percentage for air inspectors, they indicate that at the very least, trust is present in half or more of the interactions from the inspectors' point of view across the environmental media.

The different categories of facilities also provide an avenue for further examination of the presence of trust in the interactions. Based upon the responses to questions about the general nature of the interactions and the stories that exemplify those interactions, officials from two categories of facilities were most likely to suggest the presence of trust: service providers and energy

¹⁸ For instance, many times facility personnel indicated that their interactions with inspectors were positive, and there were no particular stories that stood out to recount to me as most of the interactions were routine and similar in nature.

¹⁹ As indicated by responses to inquiries about interactions generally, 77 percent indicated trust in the stories they told.

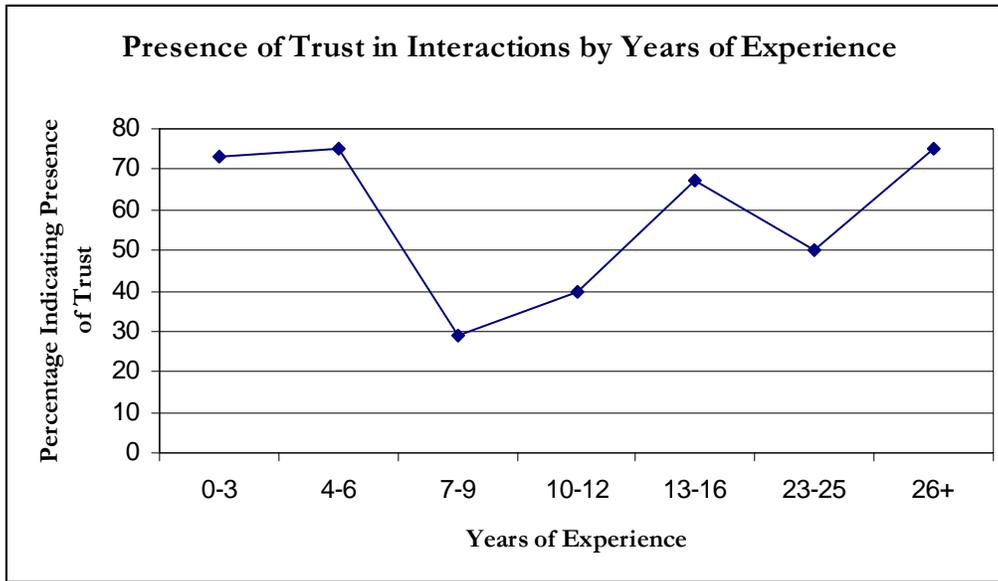
²⁰ These figures are for both responses to questions about the general nature of interactions and stories of particular interactions.

production, storage, and transportation facilities. All of the interviewees in these two categories indicated trust was present in their interactions with inspectors. In contrast, respondents from quarry and construction facilities were the least likely to indicate the presence of trust in their interactions with inspectors. None of the interviewees in these latter categories indicated trust was present in their response to questions about the general nature of interactions; of the six respondents in these categories, only three included trust in the stories they relayed to me. In the remaining categories (manufacturers, landfills, government/public, and farm/food producers), about half of the interviewees indicated the presence of trust in their interactions.

Further differences are found in the responses of men and women to questions about the existence of trust in the interactions between inspectors and facility personnel. When asked about their interactions with inspectors generally, 80 percent of the women and 53 percent of the men indicated that trust was present. However, in the stories that men and women conveyed, 40 percent of women provided evidence of trust whereas 47 percent of men did. These results will be expanded upon below.

Finally, there is a pattern of the presence of trust in the interactions by years of experience of interviewees. Figure 5.1 depicts what happens when responses are examined by the respondents' years of experience.

Figure 5.1



Trust is present in nearly three-quarters of the reported interactions for the first six years an individual has been in their position. After six years, reports of trust being present fall to 29 percent among those with between seven and nine years of experience. After this steep drop, the presence of trust rebounds steadily until it reaches the three-quarters mark among those individuals who have 26 or more years of experience. The question that invariably arises is what happens after the first six years on the job that explains this curvilinear pattern. Unfortunately, no ready answer presents itself. One could speculate that a certain degree of complacency builds after six years of experience in a particular job and frustration at various situations; however, this answer does not explain why the presence of trust reported by interviewees rebounds as strongly as it does.

Extent of Trust in Interactions

Thus far, the discussion of trust has been limited to treating it in a dichotomous manner, as either present or absent. Yet trust also can be conceived as being present in varying degrees. At the end of the interviews (unless the interviewee brought up trust on his/her own, as occurred in three interviews), I asked explicitly about trust and the extent to which the interviewee trusts his/her

counterparts.²¹ I categorized the responses for inspectors (Table 5.14) and facility personnel (Table 5.15).²²

Table 5.14
Extent of Trust in Interactions: Inspectors (N=17)

EXTENT OF TRUST	INSPECTORS (%)
Trust Most	47.06
Unsure as to the Extent of Trust	17.65
Trust Until Have a Reason Not To	11.76
Trust but are Cautious ²³	11.76
Trust Half	5.88
Trust is a Small Factor	5.88

Table 5.15
Extent of Trust in Interactions: Facility Personnel (N=22)

EXTENT OF TRUST	FACILITY PERSONNEL (%)
Trust Most	31.82
Trust	27.27
Trust but Structural Barriers to Greater Trust ²⁴	13.64
Unsure as to the Extent of Trust	13.64
Do Not Trust	13.64

Approximately 70 percent of inspectors indicated that they trust facility personnel most of the time, trust until they have a reason not to, or trust with some caution and verification. Only two of the inspectors noted that they either trusted only half of the facility personnel they interact with or consider trust a small factor in their interactions. Thus, inspectors display relatively high levels of trust in facility personnel.

²¹ While I inquired about the degree of trust among all the facility personnel I interviewed, I did not do so with five of the inspectors. The first three interviews of the research were with inspectors, and I initially was concerned about possible biasing of the responses and so I did not for the first three interviews but then changed strategy during the rest of the interviews. During two additional inspector interviews, the interviews were of such a nature that they hardly followed any of the pre-planned avenues of dialogue and inquiries about trust were so far afield from the interview that I was unable to explicitly discuss trust.

²² There are different categories for inspectors and facility personnel because of the variety of responses that I received; I believe it is more appropriate to most accurately represent the interviewees' responses instead of using the same categories for both sets of interviewees.

²³ Inspectors said that they trusted facility personnel but were cautious because facilities are out to make a profit, and the trust needs to be verified (e.g. by checking the records of emissions monitoring equipment).

²⁴ Facility personnel indicated that although they trust inspectors there are structural barriers, such as the complexity and volume of regulations and the infrequency of interactions that keep them from trusting inspectors more.

To help enrich the data presented in Table 5.14, consider some of the stories inspectors discussed about trusting facility personnel. One air inspector said that he “definitely” trusts most of the facility personnel. He indicated that with the facility personnel he trusts, he will not generally pursue enforcement action if they are a bit late in meeting report deadlines, for instance. A waste inspector said that even though trust is important, he only trusts about half of the facility personnel he works with because often the smaller facilities he inspects have a smaller profit margin so he is less likely to be as trusting with the small facilities as he is with larger facilities. Another air inspector noted that while he trusts most facility personnel, he is somewhat weary as “they’re in it to make money,” and this reality leaves him a bit more skeptical of trusting all of the facility personnel.

Similar sentiments are found in the responses of facility personnel. More than half (59 percent) trust or mostly trust inspectors. Moreover, that figure rises to 72 percent upon inclusion of facility personnel who trust but express sentiments that structural barriers hamper trust. Thus, although the presence of trust among facility personnel appeared to be lower than among inspectors, the extent of trust among facility personnel is on par with that of inspectors.

Several stories from facility personnel demonstrate the extent that they trust inspectors. A facility official from a public organization responded that he “definitely” trusts his inspectors because they would not be able to function without trust. The official went on to say that trust goes both ways, he trusts them and they trust him. He trusts inspectors to give him the correct guidance about regulations and they trust him to provide accurate information and correct data. A farmer conveyed similar sentiments about the importance of DEQ trusting him and the data he provides to DEQ since the inspectors do not have people “sneaking around” to check on facilities. A representative from another public agency noted that while he does trust his inspectors, he only trusts them “to an extent” because to him, DEQ has to “justify their existence” by finding problems that need correction because without problems, there would be no use for inspectors. Another

facility official at a food processing plant stated that trust has to be developed between him and an inspector, but building trust can be difficult because the regulations that form the basis of the interactions are “open to vague interpretations.”

Analysis of these results by the various control variables cannot be as thorough as with other variables because of the differences in the categories for inspectors and facility personnel. Geographically, all the inspectors in the West Central and South Central regions trust most of the facility personnel, while all of the facility personnel in Northern Virginia trust most of the inspectors. An explanation for such asymmetrical trust patterns remains elusive. The remaining regional breakdowns yield no definitive patterns.

In terms of environmental media and facility types, the findings do produce additional observations. A majority of water and waste inspectors say they trust most facility personnel whereas only 36 percent of air inspectors say they trust most facility personnel. Air inspectors have the most diverse answers (but that may be due to the fact that the majority of inspectors interviewed were air inspectors). As for facility types, representatives of construction/quarry, service providers, energy production, storage, and transportation expressed the most trust in inspectors. Landfills were the only kind of facility where officials uniformly said they do not trust inspectors at all. The remaining facility types do not demonstrate consistent patterns.

More pronounced patterns in the extent of trust reported can be found in the breakdown of interviewees by sex. Women overwhelmingly indicated that they had higher levels of trust than their male counterparts. All of the female inspectors said they trust most facility personnel, and three of four female facility personnel said they trust most inspectors (with one stating that she was unsure the extent of trust she has). This compares dramatically to the responses of men. Only 33 percent of male inspectors said they trust most facility personnel; when that figure is coupled with the inspectors who said they “trust until” or trust but are cautious, it rises to 58 percent. Fifty-six

percent of male facility personnel said they trust most or all inspectors, and 72 percent said they trust all, most, or trust but are wary of trust due to structural barriers. Because most of those interviewed were men, definitive conclusions cannot be drawn. Still, these findings are consistent with some descriptions of workplace differences between women and men (see, for example, Ferguson 1984; Hult 1995; Fournier and Kelemen 2001).

The extent of trust analyzed by years of experience does not produce any notable patterns. This probably is due in large part to the small numbers of inspectors and facility personnel in each category. Regardless of the explanation, this is striking given the curvilinear relationship between years of experience and presence of trust.

One more facet of the nature and extent of trust in the interactions between inspectors and facility personnel merits attention: a characterization of the significance of trust for each interviewee. To look more holistically at trust in these interactions, I devised a coding strategy defined by four categories. First, interviewees were placed into category 1 if they brought up trust in the interview and noted its importance without any prompting from me. Second, category 2 was designated for interviewees who, after being asked explicitly if trust played a role in the interactions between inspectors and facility personnel, responded with an emphatic yes or other resounding affirmation when noting the importance of trust. Third, if after being asked about trust, interviewees said trust was important *but* added a caveat (e.g. trust but verify because the firm is out to make a profit), then the interviewee was placed in category 3. Finally, category 4 was reserved for those individuals who responded that trust played either no role or a very minor role after being asked explicitly about trust. Table 5.16 presents the interviewees by category.

Table 5.16
Interviewees by Trust Category

TRUST CATEGORY	INSPECTORS	FACILITY PERSONNEL	TOTALS
<i>Category 1</i> Interviewee brought up trust and noted its importance	2/17 11.8%	1/22 4.5%	3/39 7.7%
<i>Category 2</i> After being asked about trust, interviewee emphatically noted its importance	10/17 58.8%	11/22 50%	21/39 53.8%
<i>Category 3</i> After being asked about trust, interviewee said trust important but offered a caveat	4/17 23.5%	7/22 31.8%	11/39 28.2%
<i>Category 4</i> After being asked about trust, interviewee said trust of no or little importance	1/17 5.9%	3/22 13.6%	4/39 10.3%

The results Table 5.16 reports clearly demonstrate the importance that the majority of interviewees said trust plays in the interactions between inspectors and facility personnel. Almost 62 percent of all respondents either brought up trust on their own or after being asked, said trust was important in the interactions. Only 10 percent of all the interviewees failed to indicate that trust was important to the interactions at the focus of this study.

Before delving into the different control variables, the characteristics of the interviewees in the two extreme categories, category 1 and category 4 can be described. Individuals in category 1 included two air inspectors and a facility official from the farm/food producer category. Two of these three individuals had been in their jobs for six months or less, while the third has over 30 years

of experience. Geographically, two of the individuals work in the Piedmont region, while the third is in the Valley region. All three are male.

On the opposite end of the spectrum, the four individuals in category 4 are as diverse as those in category 1. One an air inspector and the other three work in the two landfills and at a manufacturer. It will be recalled the two landfill officials reported low levels of trust (if any) in their interactions with inspectors. The range of years of experience is dramatic in this grouping, with individuals on the job for one and a half, five, eight, and 15 years. Two of the individuals are from the Southwest region, and one each is from the South Central and West Central regions. Again, all of those in this category are male.

Analysis by control variables permits further exploration. With two exceptions, there is great diversity in the categorizations of trust by region. Both the Northern Virginia and Tidewater regions exhibit remarkable consistency; 100 percent of the interviewees in these regions fit into category 2. Meanwhile, 66 percent of the Piedmont region's interviewees are in category 3.

Considering the environmental media of inspectors and facility officials also yields notable findings. All water inspectors were classified in category 2, as were all of the waste inspectors but one who was in category 3. Air inspectors were the most diverse with the greatest representation in categories 2 and 3 but there also were inspectors in categories 1 and 4. There also is consistency among some facility types. Facilities in both the quarry/construction and service provider categories had the greatest consistency, with 100 percent of facility personnel in category 2. Additionally, the majority of energy producers and manufacturers were placed in category 2. The landfill personnel, in keeping with previous findings, both were categorized in category 4.

There also is emerging regularity in the breakdown of these categories by sex. Women (N=10), as evident in other findings, all fall categories 2 or 3, with 75 percent in the former. Men (N=34), on the other hand, are more diverse, with a plurality in category 2.

Because the interviewees had such a diverse range of numbers of years of experience, little insight can be gained from breaking down the different trust categories with this variable. The closer look at the individuals in categories 1 and 4 demonstrated no clear pattern appears with newer employees fitting into one category more frequently than more experienced employees.

The extended discussion of this theme of the presence and significance of trust has proven worthwhile. Without a doubt, the findings demonstrate that the prevailing assertions in the literature about the dismal interactions between inspectors and facility personnel are not supported by this sample of front-line workers in Virginia. Moreover, there is discernible evidence that trust exists between these individuals for the majority of those I interviewed.

Challenges and Obstacles in Interactions

At the end of the interviews, I sought information from inspectors and facility personnel about the challenges and obstacles they saw in having good or better interactions with one another. Exploring the remarks of inspectors and facility personnel has the potential to help better understand earlier findings and to provide ideas for further avenues of research to explore the nature of these interactions. As with interviewees’ descriptions of good interactions, I asked an open-ended question and based on the responses, I consolidated the responses into various obstacles or challenges.²⁵ The most often cited challenges according to inspectors are summarized, ranked from most mentioned to least in Table 5.17.

Table 5.17
Inspectors’ Top Challenges²⁶

1. Regulations that are “complex” and are often incomprehensible ^{27*}
2. DEQ’s internal database management software CEDS (Comprehensive Environmental Data System)*
3. Facilities do not have the resources they need/Lack of corporate support, funding for environmental compliance*

²⁵ Please see Appendix A for the interview questions.

²⁶ These are the most frequently mentioned challenges.

²⁷ *These three challenges were tied with the same frequency of mention by inspectors.

4. Paperwork decreases field/contact time (“compliance by computer”)
5. Lack of consistency/coordination among regions
6. Not enough inspectors and high inspector turnover
7. Perception that DEQ/government is the “bad guy” and is out “to bust” facilities
8. DEQ’s Central Office does not truly understand what goes on in the field
9. Permit writers are “clueless” and include “vague conditions” difficult to enforce

One of the challenges inspectors named most often was simply the environmental regulations themselves. Inspectors expressed frustration at the complexities of both federal and state regulations that often render them incomprehensible even to the inspectors tasked with enforcing them. One air inspector noted that the confusion the regulations cause frustrates not only the inspectors, but the facility personnel too. Often frustration levels grow over the regulations which can impede the interaction of inspectors and facility personnel. A waste inspector noted that when DEQ writes regulations, inspectors are rarely, if ever, consulted and they are the last ones to know that regulations have been finalized or scrapped.

Tied with this challenge was ardent disdain for DEQ’s internal database, Comprehensive Environmental Data System (CEDS). Inspectors routinely complained about the awkwardness of using the database, the major inaccuracies frequently found in it, the dramatic differences in how the staff in different media utilize the database, and how CEDS is technologically out of date. An air inspector reported that he became so frustrated with CEDS that he developed his own tracking spreadsheet to keep up with his facilities; his supervisor liked the inspector’s own spreadsheet so much more than CEDS that he asked the inspector for a copy of the file so he could use it too.

The third most frequently mentioned challenge according to inspectors is that facilities often do not have the resources they need (both financially and in terms of personnel with appropriate experience and expertise) to comply with environmental regulations. Inspectors noted that it was not a lack of motivation or interest in complying with environmental regulations, but rather that facilities often do not have the money to invest in the appropriate pollution control equipment or

have knowledgeable personnel. Many inspectors discussed this issue and made general comments about facility personnel that wanted to install better pollution control equipment or provide more employee training, but did not have the management support or financial resources to carry out such plans.

Another challenge inspectors reported was the lack of consistency and coordination among the seven regions. As previously detailed, inspectors are housed in different regional offices and segregated by media; yet there was very little reported coordination and working across regions to help all air inspectors, for example, understand a particular regulation or deal with a specific type of facility. One air inspector noted that there is no formal cross-region collaboration except if an air inspector in one region happens to know air inspectors in other regions. This inspector would like some formal interaction between air inspectors in other regions, perhaps in the form of a conference. Additionally, a water inspector who is responsible for inspecting confined animal feeding operations (CAFOs) complained that the various regions issue CAFO permits differently. For example, some regions have the water permit writers issue permits whereas in other regions the inspectors write the permits. This inspector desired consistency across the state in CAFO permitting procedures.

Staffing issues also are a challenge according to the inspectors. Inspectors frequently mentioned problems of the lack of enough inspectors and high inspector turnover. Noted as well were the negative perceptions inspectors face; several stated they were viewed as being “out to get people,” “out to bust” facilities or “put them out of business,” even as the inspectors insisted that simply is not the case. Since inspectors are entry level positions in DEQ, many individuals stay in the position long enough to move to other jobs in the agency. Also, because the inspectors quickly establish an array of contacts in the private sector, many inspectors leave the agency to work for the private sector where compensation is higher. In one region, an inspector noted that in her tenure

with the agency (a mere two years), there had been 18 new inspectors for the five or six inspector positions in that region. Because she had been there two years, she is already one of the senior inspectors in that region.

The remaining two issues involve internal agency matters. First, inspectors complained that the DEQ central office in Richmond, which promulgates state regulations and provides (or sometimes does not) guidance, is “clueless” as to what it is like in the field. Inspectors desire the central office to be more in touch with what is involved in being on the front-lines of environmental regulation. An air inspector indicated that he would like central office to issue more guidance about the regulations he is tasked with enforcing because while the regulations are complex, it seems that different individuals have different interpretations of them and this is compounded by law suits which further call into question the meaning of some regulations.

The second internal issue is the conflict between inspectors and permit writers. Some inspectors perceive that the permit writers are more valued by DEQ management than inspectors, even though inspectors are the ones that “make environmental regulation happen.” Moreover, permit writers generally do not get out in the field, but they are charged with writing permits when they rarely have first hand experience with facilities. Several inspectors mentioned that the “vague permit conditions” that the permit writers include are very difficult to enforce. Additionally, a waste inspector noted that the value the agency puts on permit writers is clear by simply looking at who has the nicer offices – the permit writers.

The inspectors’ views can be compared with those of facility personnel whose top challenges, ranked in order of most frequent mention, appear in Table 5.18.

Table 5.18²⁸
Facility Personnel’s Top Challenges

1. None!
2. Regulations confusing, complex, not in layperson’s terms
3. Lots of paperwork, reporting requirements
4. Slowness of DEQ responses

The response that stands out the most is that about one-third of the facility personnel reported that there were no challenges or obstacles in their interactions with inspectors. This finding was surprising. No other response to this question was as frequent as this remark. Although on the surface this appears dramatic, one must consider what might lie behind the responses of facility personnel. Despite my best efforts to assure facility personnel that I would keep their identities confidential and would not disclose revealing information about them, the interviewees still may have been cautious in answering my questions. Moreover, although I tried to present my research topic in the most neutral terms, facility personnel still may have presumed that I was after particular responses and, therefore, offered what they thought were socially desirable responses.

Facility personnel also noted, like the inspectors did, that the regulations themselves proved challenging. For instance, one facility official representing a service provider lamented during the interview that the regulations are so complex, he wished he had a “cheat sheet” or some synopsis of what the regulations required him to do. He wondered if DEQ could put the regulations in laymen’s terms and provide summaries of the regulations so that he and other facility personnel could better understand them. As an aside, he inquired, half jokingly, if the inspectors even understood the regulations.

Additionally, some complained about the volume of paperwork DEQ requires and all of the reports that have to be submitted – generally by paper, not electronically. A representative of a quarry and construction company noted that the reporting requirements from DEQ can be very

²⁸ These are the most frequently mentioned challenges.

burdensome, particularly because the reports must be submitted in paper form, rather than electronically. This official wished that more could be submitted electronically as it would ease much of the paperwork required.

A last challenge mentioned was the slowness of DEQ as a whole, the amount of time to get a permit after submitting a permit application or to get an answer about a requested permit modification, for example.²⁹ For example, a facility official from a landfill noted the incredibly long time it took to get a new permit and then subsequent permit modifications. The facility needed to have a temporary flare unit during the construction phase of the facility for two weeks. To have the flare on site, the facility had to first get a new source permit, which took six months. Then, the facility discovered that they needed a modification to their existing Title V air permit for the flare unit, so that modification took another eight months. In other words, the facility spent over a year waiting for permit applications to be processed by DEQ to bring a flare unit on site for a mere two weeks during a construction project at the landfill.

Together, the challenges interviewees referenced permit a variety of insights. First, many of the challenges or obstacles interviewees reported point to issues beyond the immediate control of the front-line workers directly involved in the interactions. For example, both inspectors and facility personnel complained about environmental regulations, but neither of them is in a position to have a dramatic effect on future regulations. Additionally, many of the problems that inspectors mentioned have to do with internal DEQ matters that the inspectors themselves are likely to have little influence over. Perhaps the most important finding in the discussion of this theme is that the problems inspectors and facility personnel reported had little to do with their inspectors. This lends further support for the broader findings of this research that there are not rampant difficulties in the interactions between inspectors and facility personnel.

²⁹ For instance, permit modification may be required if a facility adds a new piece of equipment. This application must be filed and approved by DEQ before the changes occur at the facility.

Moreover, approximately half of the challenges inspectors and facility personnel cited did not connect to trust or to Kim’s (2005) indicators of trust. To reach this conclusion, I examined the top challenges listed by inspectors and facility personnel and tried to connect them to any of Kim’s indicators of trust. Table 5.19 displays those efforts. Six of the nine challenges mentioned by inspectors connect to an indicator of trust whereas none of the four challenges stated by facility personnel connect to trust indicators. The apparent connection between the challenges cited by inspectors and facility personnel and trust though plausible should not be taken definitively. It is possible that the challenges may be better explained by something other than trust (or its absence) such as professionalism.

Table 5.19
Connection of Trust Indicators to Challenges

SOURCE	CHALLENGE	APPLICABLE TRUST INDICATOR
Inspectors	Regulations that are “complex” and are often incomprehensible	<i>None</i>
	DEQ’s internal database management software CEDS (Comprehensive Environmental Data System)	<i>None</i>
	Facilities do not have the resources they need/Lack of corporate support, funding for environmental compliance	Credible Commitment
	Paperwork decreases field/contact time (“compliance by computer”)	<i>None</i>
	Lack of consistency/coordination among regions	Equal Treatment
	Not enough inspectors and high inspector turnover	Predictability
	Perception that DEQ/government is the “bad guy” and is out “to bust” facilities	Data flow of both Information and Perception
	DEQ’s Central Office does not truly understand what goes on in the field	Information Flow
	Permit writers are “clueless” and include “vague conditions” difficult to enforce	Communication with Others
Facility Personnel	None!	<i>None</i>
	Regulations confusing, complex, not in layperson’s terms	<i>None</i>
	Lots of paperwork, reporting requirements	<i>None</i>

	Slowness of DEQ responses	<i>None</i>
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The lesson to draw from this analysis is that the problems inspectors and facility personnel face have less to do with either the nature of the interaction between the two parties or trust or an indicator of trust. It would seem that the majority of issues front-line workers in this study face are structural issues that may impact the interaction between the workers and trust, but are not directly within the realm of either party's control.

Further analysis of the challenges and obstacles by control variables provided few additional insights because of the small numbers of interviewees who comprised each of the control variable categories.

Since it appears that many of the challenges cited by both inspectors and facility personnel are not directly connected to trust or indicators of trust, the value of trust as a lens to study these interactions can be called into question. Even though such a conclusion may seem logical, I think it would be hasty. The interviewees have indicated that trust is important, if not vital, to their interactions. However, while trust is present, the levels of trust vary. Therefore, the stronger argument to be made to continue the focus on trust might be that increases in levels of trust may help ameliorate, or even eliminate, some of the challenges cited by respondents. This discussion will continue in greater detail in the following chapter.

Thus far, I have explored the results of the interviews by various themes producing striking findings. The picture painted is one of significantly better interactions than the scholarship on the topic would have led me to expect. However, before moving into a broader discussion of the conclusions and implications of this research, let us explore the results of the “best” and “worst” facilities and the two categories of interviewees. First, consider the “best” and “worst” facilities to determine if the “best” facilities have the most positive experiences with DEQ inspectors.

The Best and the Worst

Thus far, the findings indicate more positive relationships than initially expected. These conclusions are further buttressed upon consideration of how officials with the “best” and “worst” facilities describe their interactions with inspectors. These facilities are of particular importance in the examination because their personnel have some of the best and some of the worst interactions with inspectors. Recall that the “best” facilities were defined as those that are members of the Virginia Environmental Excellence Program (VEEP) and have been singled out as having strong commitments to the environment. Although membership in VEEP does not imply a facility is free of environmental problems, it does indicate that the facility is dedicated to lessening its impact on the environment.³⁰ Because of their participation in VEEP, these facilities often get special, positive attention from DEQ and other state officials and are recognized for their stance to improving the quality of the environment. In contrast, facilities defined here as the “worst” are those with pending consent orders, which come about after many other steps in enforcement proceedings have been exhausted without resolving the issue. I interviewed officials from three facilities that are members of VEEP and two facilities that had pending consent orders. Although additional information about these facilities might be desired, I refrain from providing it because rather few facilities are VEEP members; nor are there a lot of facilities with pending consent orders. If I provided additional information, it would be relatively simple to figure out the facilities whose officials I interviewed. Again, since I assured the interviewees of complete confidentiality, I will not disclose any additional information about the “best” and “worst” except to say that they represent a diverse array of facility types (including facilities in the categories of government/public, quarry/construction, landfill, and energy production, storage, and transportation), in four of the seven regions.

³⁰ Please see Chapter Four for a more thorough discussion of this program.

First, consider the “best” facilities. When asked about the essential elements of good interactions, officials at two of the three facilities said knowledge/experience and communication were the most important elements. All three said that the actual interactions that they have with inspectors were “good.” In terms of trust, two were placed in category 2 (trust important/significant) and one in category 3 (trust important but with a caveat). All three said that they trust all or most of the inspectors when asked about the presence of trust in their interactions.

Perhaps, the officials from the “worst” facilities also were positive about their experiences with inspectors and DEQ even though one might have expected them to be decidedly negative. At the two “worst” facilities, one respondent said that the interactions with inspectors were good, and the other said that some interactions were good and others not so good. Related to trust, both were classified into category 3, indicating trust was important/significant but with a caveat. After being asked about their interactions, both of them described stories that demonstrated the presence of trust, and both said that trust definitely plays a role in their interactions with inspectors and DEQ. One of the two individuals said there were no challenges or obstacles to interacting with inspectors, and the other complained only about the complexity of the regulations themselves.³¹ Therefore, even though these two facilities probably have cause not to be positive about inspectors and DEQ, their representatives were positive about their interactions. This is significant in further substantiating the findings that the interactions among front-line workers in Virginia’s environmental regulation are better than initially thought.

Inspectors versus Facility Personnel

Perhaps the most intriguing findings emerged in comparing the responses of inspectors and facility personnel to the interview questions. On the whole, inspectors were more positive about

³¹ It is possible these were socially desirable responses. In other words, respondents may have been suspicious about whether I would report the challenges they mentioned back to DEQ or simply answered my questions with what they thought were “safe” responses.

their interactions with facility personnel and were more likely to indicate the presence and greater degree of trust in those interactions than facility personnel were. All the inspectors indicated that their interactions with facility personnel were positive with the exception of one inspector who said the interactions depended on the size of the facility. Additionally, nearly three-quarters of inspectors indicated the presence of trust in their interactions, and about 70 percent said they generally trust facility personnel.³² Nearly 71 percent of inspectors are in trust categories 1 or 2, with only one inspector stating that he/she did not think trust was important in interactions with facility personnel.

In comparison, facility personnel were generally positive about their interactions with inspectors and indicated the presence of trust in their interactions, but they were not as positive as inspectors. Three of the 22 facility personnel indicated that their interactions with inspectors were negative or less than positive. A smaller majority, about 59 percent, of facility personnel said that they trust all or most inspectors.³³ Finally, almost 55 percent of facility personnel appear in trust categories 1 and 2, compared to 71 percent of inspectors. Although these findings indicate differences between inspectors and facility personnel regarding the interactions between the two, it is important to stress the positive nature of these interactions overall.

The Effects of Control Variables

Because of the potential significance of these findings, it is important to examine them taking other possible influences into account to see if there are any notable variations to report to help in better understanding the findings as a whole.

Regional Variation

A closer look at the interview results by region permits some interesting insights. Northern Virginia had the most positive statements about the interactions between inspectors and facility

³² The categories combined to arrive at 70 percent include trust most, trust until there is a reason not to, and trust but are cautious of facility's ulterior motives (e.g. profit generation).

³³ However, that figure climbs to 72 percent with the inclusion of the individuals who said they trust inspectors but structural barriers, such as regulatory complexity, can hinder trust.

personnel and the highest indications of trust. All interviewees said their interactions were positive, and all of them reported that trust was present in those interactions. Furthermore, all respondents were classified in category 2 of trust, indicating its importance in the interactions. These findings are particularly interesting given the high turnover of inspectors in this region, but consistent with earlier curvilinear findings based on the length of job experience. All the interviewees from the South Central and Tidewater regions also described the interactions as positive, and a majority mentioned the presence of trust in their interactions with one another with 73 percent indicated trust was present in those interactions. Another region whose representatives indicated positive interactions was Piedmont; however, only 17 percent mentioned the presence of trust in those interactions, and 66 percent of interviewees were classified in either categories 3 or 4 of trust. In the West Central region, all of the interviewees said the interactions between inspectors and facility personnel were positive. By comparison, officials in the Southwest region had more negative opinions about the interactions and lower levels of trust. Only 50 percent of individuals in this region indicated the presence of trust in their interactions. The Valley region had the least positive comments about their interactions, and only half of interviewees mentioned the presence of trust in interactions between inspectors and facility personnel.

Thus, the most positive interactions were likely to be found in the Northern Virginia, Piedmont, Tidewater, West Central, and South Central regions, while the most negative tended to be in the Southwest and Valley regions. This regional variation is worth noting, but no clear explanation is apparent. The regions with the most positive interactions typically encompass the more urban areas of Virginia (with the exceptions of the West Central and South Central regions); these more urban areas may have particular types of industry and a particular type of individual who works in those facilities: the facilities are larger, and their staffs may have more experience complying with environmental regulations. However, the more urban regions tend to experience

higher inspector turnover, which might have been expected to jeopardize the relationships between inspectors and facility personnel because facility personnel frequently must deal with new inspectors. A closer examination of the facilities in these regions yields little insight into the regional variation because the types of facilities are diverse. Additionally, while the regional variation is somewhat confounding, it is worth noting that the respondents in both the Southwest and Valley regions still were reporting positive interactions with one another, with 80 and 67 percent respectively. Further study is needed to better determine what may account for such variation.

Environmental Media

Since the inspectors, on the whole, were somewhat more positive than facility personnel about their interactions, there is less variation to note among the different media with which inspectors work. With one exception, all inspectors indicated that their interactions with facility personnel are positive.³⁴ In terms of the presence of trust, air inspectors, compared to water and waste inspectors, suggested that there is more trust in their interactions with facility personnel; however, inspectors generally trust most facility personnel. All water inspectors are classified in category 2 of trust, all but one waste inspectors also are in category 2 and the air inspectors appear in all four categories of trust. Even so, the differences between inspectors and facility personnel across environmental media are not enough to claim that inspectors are substantially more positive and trusting than facility personnel.

Facility Type

Unlike the different categories of inspectors, there are some notable variations among officials from various facility types. Personnel from manufacturers, quarry/construction, service providers, and energy production, storage, and transportation facilities were the most likely to speak positively about their interactions with DEQ inspectors and to indicate the presence of trust in

³⁴ The exception is the inspector who said that interactions depend on the size of the facility.

those interactions. On the negative side, landfill officials, while indicating their desire for trust in their interactions through the essential elements they mentioned, were not at all positive about their interactions with inspectors. Additionally, both landfill officials said they did not trust inspectors and were classified in trust category 4. Although not as extreme, personnel representing other governmental facilities also reported a lack of trust in their interactions with inspectors. Given the small number of facilities in each category (as few as two in some cases), it is difficult to both make conclusions about these results and suggest explanations for them. As speculated earlier, landfills consistently have negative comments about their interactions with little apparent explanation.

Male and Female

Throughout the presentation of the results, differences between the males and females interviewed appeared. More women (89 percent) than men (81 percent) said their interactions were positive, and women reported substantially more trust in their interactions than men do. Almost 80 percent of women said there is trust in the interactions between inspectors and facility personnel, and all of the women are classified in categories 2 and 3 of trust, with 75 percent of them in the former. All female inspectors and all but one female facility official³⁵ said they trust one another. By comparison, only 53 percent of men indicated the presence of trust in their interactions, and men are classified into all four categories of trust. In terms of the extent of that trust, only 33 percent of male inspectors and 56 percent of male facility personnel say they trust most or all of their front-line counterparts. These findings are consistent with other findings regarding women and men in the workplace. Women, on the whole, are more positive and exhibit more trust in their interactions than men do.

³⁵ One female facility official was unsure as to the extent she trusts inspectors.

Years of Experience

Although the findings about the number of years of experience of interviewees and reported trust appeared curvilinear, there is no ready explanation. As Figure 5.1 shows, the presence of trust is generally found and then falls off dramatically after six years of experience before it begins to rebound as the number of years of experience of an individual climbs to several decades. One may speculate that an individual is positive and trusting upon starting a position and then over the course of several years becomes more pessimistic and jaded, thereby accounting for the rapid fall of the reported trust. However, then those figures recover after many years in a position.³⁶

The review of the control variables thus far typically has considered them individually. Yet, that analysis of the findings in concert with multiple control variables provides little additional insight into the research's findings. Positive interactions and indications of trust are so pervasive throughout the entire sample of interviewees that specific patterns remain elusive for the most part. It is worth noting, however, that the Valley region has the highest mean number of years of experience (15 years) and the lowest percentage of interviewees who reported the interactions were positive (67 percent). This finding is somewhat consistent with broader patterns of indications of trust among the entire interview sample, as portrayed in Figure 5.1. Although this finding might seem significant, the small number of interviewees from the Valley region (6) prohibits more definitive explanations. Individuals in the other regions averaged between seven and nine years of experience, and they all had higher percentages of respondents indicating the interactions between inspectors and facility personnel were positive.

Evaluation of Research Propositions

After this meticulous recounting of the interview findings and breakdown of the results by various variables, it is important to summarize the findings and see how they compare to the initial

³⁶ Conversations with DEQ insiders yielded little insight into these findings.

research propositions advanced in the last chapter. To review, Chapter Four suggested four propositions: (1) the relationships between inspectors and facility personnel will reflect the adversarial nature of environmental regulation in the U.S., that the relationships will not be thought of as “good” or positive by either party; (2) there are different types of relationships; (3) the few “good” relationships between inspectors and facility personnel will contain evidence of trust; and (4) there will be a variety of obstacles to the relationships between inspectors and facility personnel.

First, I expected the relationships between inspectors and facility personnel would be highly adversarial, reflecting the adversarial nature of environmental regulation and that the relationships between inspectors and facility personnel would not be “good.” Simply put, the findings do not support such a proposition at all. On the whole, inspectors and facility personnel portrayed their interactions as overwhelmingly positive, (even those with pending consent orders) and the problems they faced in those interactions were largely a function of issues beyond either party’s control. Although I did not specifically ask whether the interviewees thought their relationships with the other party were good or bad, the vast majority of individuals said that their interactions generally were positive.

Second, I expected to find a variety of different relationships between inspectors and facility personnel, and to some degree I did. However, these relationships on the whole were quite positive. Some, including the former DEQ employee who now works at a regulated facility who had nothing positive to say about DEQ inspectors, indicated the relationships were poor, but these were only a handful of my respondents. Thus, I found some variation in the reported relationships, but not a plethora of different types.

Third, I found support for the proposition that the “good” relationships would contain evidence of trust, but I also predicted that only a few of the relationships would be good and that was anything but the case. Indeed, most of the interactions the interviewees told me about were

good and only a few were described as negative. The good relationships overwhelmingly displayed evidence of trust, and several interviewees brought up the importance of trust on their own without any prompting.

Finally, I thought that there would be a variety of obstacles to the interactions between inspectors and facility personnel. Yet, I found that while there are challenges, most had little to do with the dynamics between inspectors and facility personnel and evidently are instead a function of structural issues in environmental regulation. One of the most surprising findings was the sizeable number of facility personnel who said that there were no challenges or issues in their interactions with inspectors.

Typology of Relationships and Trust

Before delving into the implications of the findings, consider a conceptualization of the relationships between inspectors and facility personnel. I expected to find variations in the interactions between inspectors and facility personnel, and I did find some differences. However, of particular interest in this study were the presence and extent of reported trust in these interactions. One way to conceptualize the role of trust in relationships is through a typology of relationships between inspectors and facility personnel (see Figure 5.2). This typology is not directly based on the data obtained from the interviews in this research, for reasons that are detailed below. Rather Figure 5.2 simply suggests one way of thinking about the relationships between front-line workers and how they might change over time. Although this typology does draw on Waterman and Meier's (1998) dimensions of information asymmetry and goal consensus conflict, I developed it during the interview phase of this research as a way to help conceptualize these relationships.³⁷

³⁷ When I embarked on this research, I did not expect trust to play such a crucial role in these relationships. Since the interviews yielded findings so contrary to expectations, I struggled in conceptualizing the significance of trust; this is what led to the development of this typology and I offer it here to guide understanding of these relationships rather than as a representation of the specific findings from my interviews.

Figure 5.2
Typology of Inspector-Facility Official Relationships and Trust

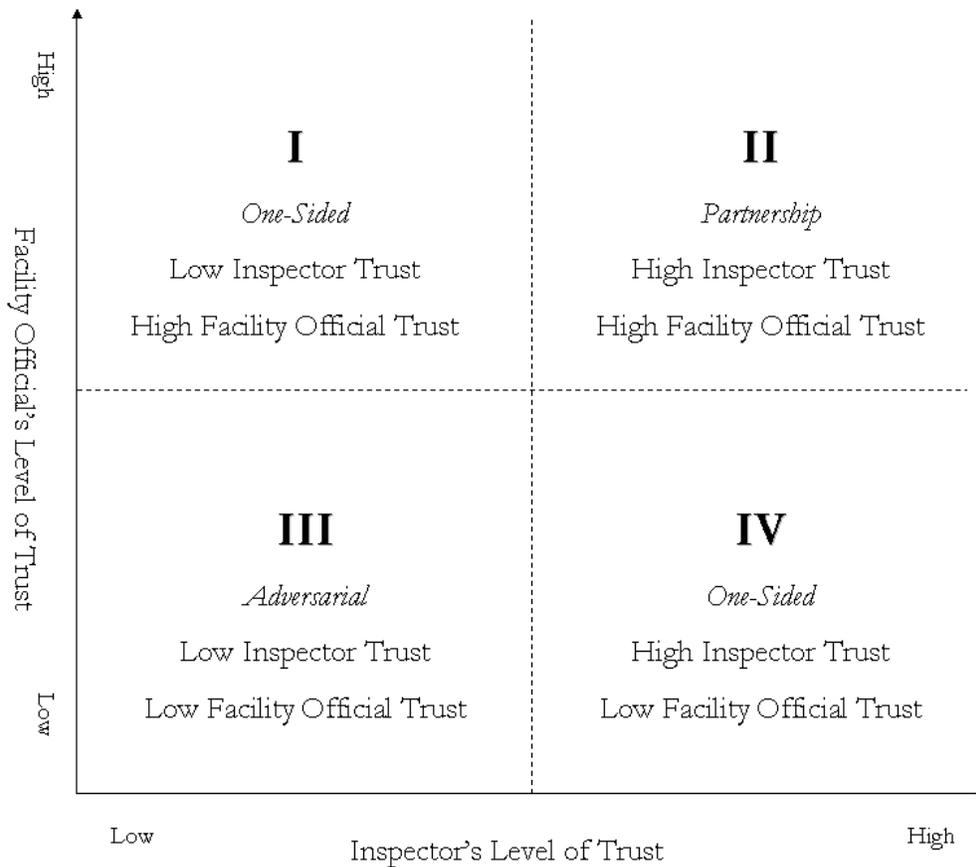


Figure 5.2 depicts four categories of relationships between inspectors and facility personnel based on the level of trust that each front-line worker has in the other. These categories are meant to serve as a guide for conversations that develop regarding the nature of the interactions between inspectors and facility personnel.

At this juncture, two general comments about these categories might be useful. First, the lines separating the categories in Figure 5.2 are dashed to signify both the porous boundaries among the categories and the rough estimates of the relationship types. Relatedly, it is possible for a particular relationship to occupy different categories at various times. As Van Slyke (2007) found in a study of government officials and contractors, a relationship initially may embody one set of

descriptors and then, over time, the relationship may evolve into a more trusting one. Consistent with the relational view of trust in this research, trust does not develop instantaneously and needs to grow over time. Indeed a relationship between an inspector and a facility official initially may embody characteristics of a calculative view of trust – each party is cooperating because he/she deems cooperation in his/her best interest. But then, that trust may evolve to encompass a relational conception of trust in which both parties have developed a relationship in which they are genuinely striving towards common goals. Second, it is worth remembering that a facility official often deals with multiple inspectors from the same state agency as well as additional federal inspectors; therefore, she may have relationships with inspectors that fit into every category and, of course, those relationships may change over time. This typology does not reflect of the relationships in this study, but provides a general way of considering them more generally.

The typology, despite being illustrative rather than representative of relationships between inspectors and facility personnel in this study, can be useful. First, considering these relationships can prove overwhelming. Therefore, the typology helps to organize different categories of relationships to better grasp the various relationships between inspectors and facility personnel instead of referring to each relationship as an isolated case. Additionally, this typology could be applied to other relationships at different levels in the environmental regulatory system, such as the relationships between regulatory agency officials and facility personnel. Second, Figure 5.2 can be helpful in the design and execution of further research in several areas, including research about inspectors and facility personnel. By starting with a typology, a researcher may be able to more systematically design a survey instrument or interview questions to ascertain where different relationships lie in terms of the extent of trust. These different categories of relationships are elaborated below in an effort to better describe them and to demonstrate their worthiness for continued study.

Category I – One-Sided

First, category I represents relationships between inspectors and facility personnel in which the facility official has a high degree of trust in the inspector but the inspector has a low degree of trust in the facility official. Relationships in this category may take a variety of forms, but consider the following example. At a particular facility, the individual responsible for environmental compliance does not have a lot of experience or training in environmental matters and depends on the inspector to help him and his facility achieve and maintain environmental compliance. The facility official may realize he needs to reduce the amount of pollutants being discharged from the facility's manufacturing operation but does not know what pollution abatement technology would be appropriate. Therefore, he relies on his annual or semi-annual visits from the inspector to tell him what the problem is and what steps he and his facility should take to correct the pollution problems. In this case, the facility official is relying on the inspector to help him because he lacks relevant knowledge; thus, he puts a great deal of trust in the inspector telling him what the facility should be doing, what regulations apply, and what reports he must file. The inspector may think that the facility official lacks the appropriate knowledge and background to be in that particular position. Moreover, the inspector may think that the facility has little commitment to environmental protection; since the inspector has to tell the facility official step-by-step what to do, he cannot put a lot of trust in him because he cannot be sure the facility is not trying to evade its environmental regulatory requirements. Thus, information asymmetry and shirking are possible in relationships in this cell.

Relationships in category I are largely one-sided in terms of trust and its indicators. From the facility official's perspective, he is forthcoming in his communication and is open and honest about his lack of knowledge and expertise. Accordingly, he provides information of all types as a way to garner help from the inspector because he does not know where else to get the needed

assistance. From the facility official's perspective, he is demonstrating his commitment to environmental compliance by trying to do what he is supposed to, and he is responsive to the demands of the inspector. However, the inspector does not reciprocate. The inspector perceives the facility official and his company as passively or strategically not doing all they could and not having a clear commitment to the environment. The inspector may even consider the provision of information from the facility official as a way to hide or cover-up environmental noncompliance. In general, there is a clear lack of respect towards the facility official, mostly due to his perceived incompetence or possible opportunism. As a result, the inspector is left in a position where he is unlikely to exhibit any significant degree of trust in his facility counterpart. The facility official cooperates and the inspector responds with, at best, minimal cooperation; there is an imbalance and the levels of cooperation are unlikely to foster trust between these two front-line workers in the immediate future.

The implications of relationships in this category yield little positive or negative action; rather, they appear likely to continue to hobble along without any significant change.³⁸ These more one-sided relationships will tend to maintain the status quo and thwart attempts at significant improvement of relationships, since neither side feels compelled or able to take the required steps to do so. In terms of effects on the organizations involved, relationships in this category will result in little change to the existing organizational structures and operations currently in place because there will be no impetus for change. The ramifications for environmental protection more generally are little more than preservation of the status quo and continued muddling through with the existing interactions between the regulator and regulated. Accordingly, the challenges and inefficiencies in the current regulatory system are likely to persist. Efforts at reform in the environmental regulatory

³⁸ At least without any change initiated by inspectors or facility personnel; that is not to say change may not occur at other levels of environmental regulation and trickle down to the ground-level.

system are unlikely to make major strides as both the inspectors and facility personnel will be apprehensive about changes that will require major alterations to their existing relationships.

Category II - Partnership

Category II includes relationships in which both the facility official and inspector have high degrees of trust in one another. Relationships in this category are best characterized as partnerships. For example, a facility official and inspector have a good working relationship and trust one another so when the facility has an accidental chemical spill, the facility official has no problem calling his inspector right away and disclosing all relevant information – even some information that may not be required. The facility official provides this information because he is confident that while the inspector has a job to do, the inspector is not going to unduly penalize his company; with the added information, the inspector will best know how to guide the facility's response to the spill. In such an instance, the facility official is comfortable asking for help from his inspector in a bad situation and expects that they will work together, keep avenues of communication open, and solve the problem to the best of their abilities.

This category of relationships is characterized by front-line workers cooperating, providing information, relying on each other's expertise, displaying confidence in the other's actions, expecting fair treatment, and being responsive to each other. All of these characteristics are clear indicators of trust. Inspectors and facility personnel with relationships in this category generally are pleased with each other and see one another as partners, rather than adversaries, in achieving and sustaining environmental compliance. Each party trusts the other and seeks to foster a positive relationship as the best means of ensuring environmental protection.

Relationships that are largely defined as partnerships may have considerable potential for the environmental regulatory system more broadly. Since the relationships between inspectors and facility personnel in this category are quite positive, both sides might constantly attempt to improve

environmental compliance rates and work together to find innovative solutions to environmental issues. Accordingly, the changes to the relationships dynamics are likely to see diminished information asymmetry and greater goal consensus, since the parties involved will disclose more information, communicate more effectively, and cooperate to achieve environmental protection. As a result of these good working relationships, more profound changes in the environmental regulatory system, such as the implementation of voluntary initiatives and programs, may have a greater chance of being effectively implemented on the front-lines of environmental policy, since trust and positive relationships already exist among the actors on the front-lines. Organizationally, this may imply changes in environmental protection agencies, including increased discretion for inspectors (who may indeed experience changes in their job titles and job descriptions), and perhaps the agencies as a whole will favor greater decentralization instead of more hierarchical structures. Of course, the broader effects of positive relationships on the front-lines of environmental policy will not quickly transform the dynamics of environmental protection agencies or environmental regulation generally; however, with relationships in this category, it is likely that the greatest potential for change comes from this category than any of the other relationship categories.

Category III - Adversarial

In contrast to the relationships in category II are those in category III where both inspectors and facility personnel have little trust in one another and largely think of the other as adversaries rather than partners. Relationships in category III are what one might expect to find in a traditional command and control regulatory system in which both parties are skeptical of one another and constantly question the other's behavior. Consider a facility official at a company with a respectable environmental record who continues to have a challenging relationship with her inspector. The inspector drops by the company all the time, or so it seems, and even when the facility official proudly displays her company's reductions in nitrous oxide emissions, for example, the inspector

complains about a formatting error in the most recent report submitted to the environmental agency and demands that the facility official redo the entire report or face a warning letter. The facility official is baffled because her company has clear evidence of continued improvement in its environmental record and is now operating well below its permit limits; yet the inspector obviously seeks to find something wrong during her all too frequent site visits.

At the same time, the inspector cannot begin to understand why a company that has demonstrated environmental compliance continues to have problems meeting the simplest regulations; she is concerned that because the company fails to follow reporting procedures that it is trying to hide something through the use of fancy report formatting. Thus, the inspector is cautious about acknowledging the company's apparent environmental improvements; if it can make such reductions in outputs, how is it the company cannot follow reporting instructions?

The relationships in this category are far from positive, and both parties are skeptical of one another, thereby stifling efforts to improve the relationship. Communication between the actors is guarded and defensive because each suspects the other's motives and is concerned that the other is going to use any communication against them. Additionally, communication is poor because the inspector is constantly questioning the behavior of the facility and its representative and vice versa. Neither side wants to provide any additional information other than what is required for fear of revealing too much and creating additional problems. In light of these perceptions of each other, both the inspector and the facility official demonstrate little trust or indicators of trust in their relationship. Both see little advantage to working with the other or making any attempt to improve the relationship, since their mutual perceptions are extremely negative and suspicious.

The ramifications of relationships in this category are significant. Since the relationships are negative and both parties are skeptical - even pessimistic - about the other's role in environmental protection, it is unlikely that either will take significant steps to change or improve any aspect of

environmental regulation. In fact, there may be steps backward in environmental regulation as more regulatory “sticks” came to be employed instead of “carrots.” These implications may be closer to what would be expected under the continued use of a strict command and control regulatory structure that is designed to foster adversarial relations between the regulated and regulator. In such a system, there is little opportunity to work together to arrive at optimal responses to environmental issues and streamline the regulatory system into one that is more effective and efficient. Because of the poor relations between inspectors and facility personnel, information asymmetry will continue and may even worsen. Further, because of the animosity between the parties, goal consensus may continue to diverge if for no other reason other than spite. Organizationally, negative perceptions of the regulated community will persist, and environmental protection agencies may be even more inclined to limit inspectors’ discretion in order to ensure the regulated community complies with the regulations.

Category IV- One-Sided

Finally, in category IV facility officials have a low degree of trust in inspectors, while inspectors have high degrees of trust in facility officials. Although inspectors trust their facility counterparts, facility officials do not reciprocate. For example, a facility may have a strong record of environmental compliance and demonstrate continued commitment to improving its environmental performance through various innovations and participating in special programs that the government agency has created. However, the facility official may be skeptical of the inspector despite her company’s stellar environmental record. She often remarks that government agencies are in the business of keeping themselves employed and continuously promulgate new regulations that she and her colleagues have to spend hours interpreting to figure out how to achieve compliance. Additionally, the environmental agency depends on the fines it collects from various enforcement proceedings, so she is always cautious about what she tells the inspector even though the inspector

has given her little reason to suspect that the inspector is concerned with every last detail of the regulation. As a result, the facility official is guarded in her interactions with the inspector even though the inspector only ever has positive comments to make about her facility's environmental performance; she is simply afraid that the one time she is forthcoming about an environmental problem; she will get her company into trouble. Although the inspector constantly tells her that she can depend on the inspector for help, she would much prefer utilizing the services of an environmental consultant that costs her company additional money because she knows the consultant does not stay in business by collecting fines; nor does the consultant have the power to shut down companies.

Relationships in this cell also are largely one-sided, and the defining characteristics of these relationships mirror those in category I. Communication and information are forthcoming from one party but not the other. Despite some tacit attempts at cooperation, there is a lack of genuine cooperation because both parties would have to engage in cooperative efforts and that rarely occurs in relationships in this category. Additionally, other indicators of trust, such as openness and responsiveness, exist to some degree, but again they are demonstrated mostly by only one of the two parties, making genuine responsiveness and openness difficult. Accordingly, there is some evidence of trust from the inspector but little displayed by the facility official.

Because only one of the parties displays trust, the implications for environmental regulation more broadly are similar to those of category I. Relationships are unlikely to be altered or to change dramatically, either positively or negatively, and will instead maintain the status quo. Relatedly, it is doubtful that significant organizational changes will result in the absence of any catalyzing force. To make significant changes in environmental regulation, both parties will have to be involved and willing to depart from the current system, but enough will to change is not present to bring about change in relationships in this category.

Table 5.20 summarizes this discussion by reviewing the key characteristics of the relationships in each cell. It should be noted that the implications for environmental regulation related to each relationship category is speculative at best, and it is important not to assume that the nature of the relationships at the ground-level can or will have significant effects on the broader regulatory system.

Table 5.20
Summary of Relationship Types

RELATIONSHIP CATEGORY	KEY CHARACTERISTICS	LIKELY IMPLICATIONS
I One-Sided	Low inspector trust, High facility official trust <ul style="list-style-type: none"> - One sided communication - Partial cooperation - Limited openness - One sided flow of information and perceptions - Respect from one side, skepticism from the other - Limited responsiveness 	Status quo, little significant change in relationships or environmental regulation
II Partnership	High inspector trust, High facility official trust <ul style="list-style-type: none"> - Communication - Cooperation - Openness - Data flow of information and perceptions - Respect for each other - Responsive to one another 	Improvement and Innovation in relationships and environmental regulation
III Adversarial	Low inspector trust, Low facility official trust <ul style="list-style-type: none"> - Lack of communication - No cooperation - Lack of openness - Little flow of information - Negative perceptions of the other - Absence of respect - Unresponsive to each other 	Deterioration of relationships and adoption of more traditional command and control mechanisms
IV One-Sided	High inspector trust, Low facility official trust	Status quo, little significant change in relationships or

	<ul style="list-style-type: none"> - One sided communication - Partial cooperation - Limited openness - One sided flow of information and perceptions - Respect from one side, skepticism from the other - Limited responsiveness 	environmental regulation
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Research Findings and Relationship Categories

One might expect the typology in Figure 5.2 would be directly applied to the 44 front-line relationships examined in the course of this research. Unfortunately, given the parameters of this study, placing the various relationships in the four categories is not possible several reasons. First, I did not necessarily interview corresponding pairs of inspectors and facility personnel. In some instances, I interviewed an inspector but did not interview a corresponding facility official that the inspector dealt with at all. The reverse is also true; in some cases I interviewed a facility official and did not talk with any of the DEQ inspectors with whom they dealt. As a result, I cannot place actual relationships in the cells of Figure 5.2. Second, the inspectors and facility personnel I spoke with interact with more than one counterpart; in my conversations with the interviewees, we frequently discussed more than one inspector or more than one facility official. This further compounds any efforts to plot relationships in Figure 5.2. Finally, ascertaining precise levels of trust is extremely difficult. Therefore, only general comments may be made regarding the interview findings and this typology.

Although I cannot plot 22 specific relationships, I can discuss the approximate categorization of most interviewees based on findings from the interviews. Consider the inspectors first. The majority of inspectors I interviewed not only indicated the significance of trust in their interactions with facility personnel, but also said that they trusted most of the facility personnel they dealt with or trusted them until there was a reason not to. With this information alone, it is evident

that the majority of inspectors would be placed in categories II and IV. Of course, there are varying degrees of “high trust” but based on the comments of the inspectors, it would be difficult to claim that the inspectors would fit anywhere else.

Similar comments can be made about facility personnel as a group based on the interview findings. A significant majority reported trusting most or all of the inspectors, and only a quarter of the facility personnel either were unsure of the degree to which they trusted inspectors or did not trust inspectors at all. With that information alone, the only logical categories in the relationship typology for facility personnel are categories I and II.

After considering the categories where inspectors and facility personnel fall separately, it should be noted where these classifications overlap – category II. Again approximately three-quarters of all interviewees – inspectors and facility personnel alike – said they generally trust³⁹ their counterparts. These findings solidify confidence in asserting that the majority of individuals interviewed in this study fall into category II – with relatively high levels of both inspector and facility official trust.

This claim must be considered in context of the inability to plot specific relationships in the relationship typology and because a small number of relationships were studied. Clearly emerging, however, is convincing evidence that the nature of the relationships between inspectors and facility personnel differs from what the literature would have one believe.

Conclusion

This chapter’s lengthy discussion of the interview findings yields compelling information about the nature of the interactions between inspectors and facility personnel. Interviews with 44 inspectors and facility personnel suggested that the interactions between the two parties are

³⁹ Included in this number are inspectors in the following categories from Table 5.14: trust most, trust until have a reason not to, trust but are cautious; and facility personnel in several categories from Table 5.15: trust, trust most, trust but there are some structural barriers.

overwhelmingly positive – a finding that is in stark contrast to the prevailing literature on the topic. Moreover, these results are relatively consistent across geographical region, sex, media, facility type, and years of respondent experience. The implications of these findings have the potential to be quite significant, and they will be further explored in the next chapter.

CHAPTER SIX THERE'S SOMETHING HAPPENING HERE

“There’s something happening here / What it is ain’t exactly clear...”
- Buffalo Springfield

In a quintessential 1960’s protest song, Buffalo Springfield ponders what is happening because it is not clear. Then, Buffalo Springfield goes on to remark that everyone needs to “look [at] what’s going down.” Although the context of these lyrics differ markedly from that of this study, something clearly emerged in this research: the interactions between the inspectors and facility personnel studied are positive. The prevailing literature would lead one to think that trust is a pervasive problem that needs to be addressed in the environmental regulatory system. This research has shown, however, that the interactions between inspectors and facility personnel are significantly better than initially thought, at least in Virginia. The implications of these findings potentially could help suggest future action in the environmental regulatory system and guide research in this important area. This chapter will begin by recapping the key findings of the study before discussing implications and future research needs.

Major Findings

It is worth reviewing the major findings of this research because of their contrast with the prevailing assumptions surrounding the interactions of environmental inspectors and facility personnel. First and foremost, the evidence collected demonstrates that the interactions between inspectors and facility personnel are reported to be overwhelmingly good. Bad experiences were unearthed in the course of the interviews and negative stories relayed, but overall the experiences of both inspectors and facility personnel with one another seem to be positive. When asked about the interactions with facility personnel, every inspector interviewed said that they were positive.¹ By

¹ One of the 22 inspectors reported that the interactions depend on the size of the facility.

comparison, 19 of 22 facility personnel said that their interactions with inspectors were good.² These results indicate that 93 percent of interviewees were *positive* about their interactions with one another. The tone of the existing literature would lead one to conclude that a similar percentage of inspectors and facility personnel would be *negative* about their interactions. It is important to reiterate that the sample in this study is quite small and confined to a single state; however, the widespread agreement among interviewees allows one to be cautiously optimistic that similar results are likely in studies with larger samples and in other geographical areas and jurisdictions.

Second, it appears that trust is present in the interactions between inspectors and facility personnel. Over 60 percent of interviewees indicated that trust is present in their dealings with one another. Indications of trust appeared both in comments about the general nature of the interactions and in specific stories conveyed. For example, one facility official discussed how his facility was having problems with its underground storage tanks (USTs). The facility official asked DEQ inspectors to come and to show him what his facility was doing wrong and to help him solve the problems. The inspector came in and showed the facility official what needed to be done without creating paperwork or headaches for the facility, according to the official. The inspector undoubtedly could have found all sorts of problems that might have resulted in the facility being subject to enforcement actions. Instead, the inspector chose to work with the facility, and the facility official found that expecting the inspector to help was the right choice for his facility.

Third, beyond discovering the presence of trust in these interactions, a majority of both inspectors and facility personnel explicitly stated that there were significant degrees of trust in their relationships. Nearly 70 percent of inspectors and 59 percent of facility personnel reported that they trusted one another. Conversely, only about 10 percent of inspectors and 14 percent of facility personnel said that they do not trust each other or that trust was a small part of their relationships.

² See Table 5.12 for the characterizations of interactions by facility personnel.

During an interview, one inspector remarked that she was dealing with a circuit board manufacturer that had been subject to enforcement action because of improper disposal of various wastes. The facility was struggling to achieve compliance but its representatives trusted the inspector enough to give her more information than was required in hopes of having her help them figure out the problem in their waste stream. Because the facility official was so open and forthcoming with information, the inspector remarked that although she could have pursued a number of actions against the facility based on the data that were disclosed, she chose not to because the representative was so cooperative in supplying information to help them achieve compliance. Perhaps a facility official summarized these findings best: “I don’t trust any government agency, but they’ve [DEQ] earned some of my trust over the years.” Several interviewees – inspectors and facility personnel alike – remarked that without trust, environmental regulation and the interactions between inspectors and facility personnel would not work.

Fourth, after placing the interviewees into various categories differentiating the significance of trust in their interactions, over 60 percent of respondents either brought up trust on their own without prompting during the interview or, after being asked explicitly about trust, remarked about its importance. Moreover, only 10 percent of interviewees after being asked about trust, said trust was of little or no importance in their interactions.

Finally, analysis of the challenges these front-line workers face in the environmental regulatory system indicates that the problems they cited have little to do with each other and more to do with structural issues in the system. For instance, when asked about the challenges in interacting with their front-line counterparts, both inspectors and facility personnel frequently complained about the complexity of and confusion surrounding environmental regulations. Thus, most of the challenges have little connection with trust among front-line officials. Even the

challenges that relate to trust and its indicators often reflected difficulties at levels other than the front-lines, such as with the demands of agency leaders.

Because of these findings, the argument could be made that the emphasis on front-line workers in this research may be misplaced, since the problems primarily are at higher levels in the environmental agencies and facilities, not dyadic relationships between individuals. Such a claim, in my view, would be short-sighted. Focus on front-line workers is important in this research and continues to be important in future research for several reasons. First, as Chapter Three points out, the role of front-line workers has been largely absent from the environmental policy literature, and if the dialogue about environmental regulations aspires to be fruitful, it must consider all facets of and actors in the regulatory system. Failure to consider all dimensions of environmental policy will not allow for a comprehensive examination of it. Second, policy studies have aptly demonstrated the significance of those individuals who are responsible for the actual implementation of policy; in the realm of environmental policy, those key individuals are the front-line workers. Therefore, their role in the execution of environmental policy continues to prove important and worthy of study since they are responsible for policy implementation. Finally, the direction of environmental policy in the future indicates a shift in the regulatory system that likely could result in increased discretion of front-line workers in achieving environmental goals through the utilization of more collaborative policy instruments. Thus, the significance of these individuals seems likely to grow. Adopting more collaborative environmental policies undoubtedly will require greater discretion of front-line workers as they work together to ensure environmental protection.

In addition to concerns that the emphasis on front-line workers may be misplaced, one also could question the focus on trust, since many of the challenges inspectors and facility personnel mentioned do not directly correspond to indicators of trust. Again, such an argument fails to consider the broader realities of the environmental regulatory system. First, trust deserves continued

attention since a number of scholars (see, for example, Kettl 2002; Eisner 2006; Fiorino 2006) have indicated that at least some level of trust is a major component of environmental regulation; its absence is a significant problem. This research repudiates such expectations as inspectors and facility personnel repeatedly stated that trust and indicators of trust were very important in their interactions with one another.

Second, the modern environmental regulatory system – and, indeed, many other areas of regulation – are buttressed by trust (Jordana and Levi-Faur 2004, 14). For example, regulated facilities are routinely relied on to provide data and reports indicating their emissions levels. The inspectors who review those reports have no way of knowing if the pollution abatement equipment actually was operating and producing the readings that the facility reports, for instance. The inspector has to trust the facility to monitor itself accurately since the inspector cannot be present at all times to verify the data. Additionally, facility personnel have to trust inspectors. For example, facility personnel are frequently not as conversant in the applicable environmental regulations and rely on their inspectors to tell them what regulations pertain to their facility and what permits must be obtained. Of course, facility personnel could spend hours reading regulations and consulting with other environmental professionals, but that does not occur as often as one might expect. Many facility personnel included in this research supported this contention. For instance, one representative of a public organization openly declared that he has to trust his facility's DEQ inspectors to give him the right guidance and correct information about the regulations, since he does not have the time or the ability to comprehend the regulations and other requirements.

A final reason to continue the emphasis on trust is that many of the challenges could be better addressed if trust and perceptions of trust improve. This study provides evidence that trust does exist between inspectors and facility personnel in Virginia. However, trust needs to be examined in many other interactions, such as trust between inspectors' supervisors and facility

personnel and trust between legislators and facility personnel. If trust is low between legislators and facility personnel, for example, then that might help explain why regulations are as complex and burdensome. In attempting to exercise bureaucratic control, legislators may be skeptical of allowing inspectors (or even agency leaders) too much autonomy in devising standards and means of achieving those standards. As a result, the regulations may become complex in an effort to try and control the bureaucracy.³ Also, improvements in trust may be able to result in a decrease of the complexity of regulations because facilities that are subject to those regulations are trusted to genuinely pursue environmental protection so regulations do not have to be as specific and detailed to incorporate every possible situation. Another frequently mentioned challenge was the amount of paperwork. If lawmakers and regulatory agency officials trust inspectors and facility personnel to a greater degree, then perhaps less paperwork might be necessary for both inspectors and facility personnel. Perhaps most importantly, if trust levels are low in other areas of the environmental regulatory system, efforts could be made to improve trust in order to counter the perceptions that government is the “bad guy” and is “out to get” regulated facilities. In sum, trust is still important in exploring the interactions between front-line workers in environmental regulation and in studying the environmental regulatory system as well.

This brief review of the major findings of this study serves to remind one of how the findings differed from what was expected. Accordingly, the implications of this research may indeed have great potential for scholarship on both environmental policy and front-line workers.

Implications for the Future of Environmental Regulation

Throughout the discussion of the interview findings, the implications of the research appear potentially significant. Most importantly, the findings are noteworthy if the discussion shifts back to the focus of Chapter Two – the nature of environmental regulation past, present, and future.

³ Efforts at bureaucratic control originate from multiple levels and include actors as diverse as Congress, state legislatures, the president, governors, EPA, and state environmental protection agencies.

Environmental regulation in the U.S. has been largely dominated by command and control regulations for more than three decades, and their utilization has produced demonstrable results. Surprisingly, however, in this adversarial system of environmental protection, the relationships on the front-lines are not as negative as one might have expected and therein lies the significance of the study's findings.

Chapter Two concluded that there is an emerging consensus, and indeed some promising action, on the need for the next generation of environmental regulations to be less confrontational and more helpful in addressing the environmental challenges we face in the 21st century. The literature is replete with discussions about the future of environmental regulation (see, for example, Davies and Mazurek 1997; Rondinelli and Berry 2000; Durant et al. 2004; Fiorino 2006; Eisner 2006). Although each author has his or her own perspective on the future of environmental regulations, an underlying theme is the need to reduce the command and control mechanisms⁴ in order to diminish the adversarial nature of the system and to embrace more collaborative and flexible approaches to achieving environmental outcomes. Some of the many alternatives to command and control regulations include voluntary initiatives, such as environmental management systems (EMSs), and pollution prevention programs. At the crux of these next generation regulations are policies that assume better working relationships between front-line workers (see, for example, Potoski and Prakash 2004). For example, an EMS requires the regulator and the regulated to work together to devise goals and strategies to continually reduce the firm's environmental impact.

Additionally, a trusting relationship is important. Many new strategies for environmental regulation rely on more self-monitoring and self-reporting by the regulated; such a requirement clearly demonstrates the need for the regulator to trust the regulated as being accurate and honest in

⁴ It is worth mentioning again that while there is a good deal of consensus on the need to move beyond command and control regulations, there is not uniform support for such a transition (please see Chapter Two).

monitoring and reporting environmental indicators. Accordingly, there is a great deal of skepticism over many next-generation policies, since the longstanding assumption has been that the relationships in the environmental regulatory system are quite negative. While discussing his prescriptions for the future of environmental regulation, Fiorino (2006) flatly rejects fundamental assumptions of command and control regulations. In particular, he (1) dismisses old beliefs regarding the behavior motivations of firms that stipulate firms act only to avoid legal sanctions,⁵ (2) discards “the notion that adversarial relationships are inherently superior to collaborative ones,” (3) questions centralized bureaucratic control as the prevailing approach, (4) disputes “the notion that firms are all the same in their intentions or capacities” and recognizes, instead the differences among firms, and (5) disagrees with a narrow view of compliance “in favor of a broader emphasis on environmental performance” (193-195). Inherent in these older premises of environmental regulation is a top-down, dictatorial, “every firm is the same” mentality that may have worked well in the past, but no longer applies in the changing context of environmental regulation in the 21st century. Fiorino is one of many who advocate an approach that debunks traditional ideas that firms have no concern for environmental protection and are only interested in doing the minimum. There is less and less evidence of this phenomenon (see, for example, Hoffman 2001).

In discussing the specific design objectives of the “new environmental regulation,” Fiorino notes a sixth and final objective: “to create mechanisms and relationships that build trust” (199). Thus, the question that arises is how environmental policies should be crafted to build trust. Fiorino (2006) discusses three specific changes that are needed in the environmental regulatory system to embrace his prescriptions for the “new environmental regulation.” Although these changes extend

⁵ Fiorino details that the prevailing assumptions of traditional command and control regulation posit that firms have no interest in environmental protection except as it relates to their compliance with laws (193). In other words, in the past it has been assumed that firms do not care about improving environmental quality and are only concerned with profits; now, this old assumption is becoming widely rejected. Firms increasingly are recognizing the numerous advantages of complying – even exceeding – environmental regulations because of the ability to increase profits, improve their public image, and secure competitive advantage.

beyond a simple desire to build trust, the changes he suggests could aid in trust development. First, agencies “need to develop more diverse skills and adaptive structures” (207). Command and control regulations necessitate technical, legal, and administrative skills whereas next generation environmental policies need other skills, including collaboration, negotiation, and performance measurement (Fiorino 207). Agency employees need different skill sets. They need to think of the regulated community as their partner, not the enemy. With changes in mindsets, government officials may be more willing to give a regulated facility a chance, and extend trust (at least until there is reason not to). Second, structural changes are needed (Fiorino 207-208). Many structural changes are needed, including hiring more inspectors and reducing the workloads of inspectors so that they can visit facilities more often and interact with the regulated community on a more regular basis. Trust develops over time through repeated interactions and more inspectors will help facilitate trust building with the regulated community. Finally, both the laws and agencies involved in environmental protection will need to “incorporate more integrated, adaptive strategies” (Fiorino 208). Environmental laws will need to integrate environmental media, use “measurable goals in standard setting” and create performance tiers (Fiorino 208). To build trust, environmental regulations should not continue to focus on discrete pieces of environmental protection and instead should have a broader focus. Thus, policies should look at outcomes rather than specific measures and trust a regulated facility to achieve the outcomes with less concern for the means of achieving those outcomes. By extending flexibility and cooperation to the regulated, trust could develop.

The continued, seemingly pervasive belief that relationships are poor and characterized by distrust may be due to several reasons. First, little research has focused on environmental relationships, particularly those at the front-lines. Consequently, in the absence of numerous studies, educated hypotheses are made based on general perceptions of the environmental regulatory system and anecdotal evidence. Although the research here is a direct response to the general

neglect of the topic, it is by no means all that is needed to fill this void. Additionally, a great deal of the scholarship on environmental regulation focuses (understandably to some extent) at the U.S. federal level and on the formulation of environmental policy itself. Less attention has been paid to the implementation of those policies, particularly at the state level. As research has focused on the execution of environmental regulations, much of the emphasis still remains at the more macro levels (e.g. heads of environmental agencies and organizations) of environmental policy.

Second, the prevalence of the idea that the relationships between inspectors and facility personnel are poor may be due, at least in some measure, to the assumptions associated with command and control regulations, since the regulations are predicated on expectations of conflict and the regulated resisting compliance. By their very nature, such regulations focus little on the relationships between the regulator and the regulated and instead emphasize complying with the dictates of the law.

Although the prevailing notion has been that the relationships in the environmental regulatory system are poor, this research demonstrates that not all of the relationships are poor, and indeed some are quite positive. Gradually, recognition is growing of the need to take a more collaborative and less command oriented approach to environmental regulations in the future. Accordingly, building relationships between the front-line workers in environmental regulation is vital partly because the next generation of environmental regulations require positive, collaborative, and, ultimately, trusting relationships between these key actors. Jordana and Levi-Faur (2004) note that "...it seems even more plausible that trust is central to the...regulatory state" (14). The findings from the research indicate that many relationships are positive, and most exhibit indications of trust. Since the relationships, at least those included in the interviews in Virginia, are generally positive, there is a better foundation on which to build the next generation of environmental regulations than one might think should such changes be sought. Hence, there is potential for

moving away from command and control regulations toward embracing the next generation of policies.

Implications for the Study of Front-Line Workers

In addition to the implications for the environmental policy literature, this research also contributes to the front-line worker literature. As Chapter Three noted, some scholarship discusses the importance of front-line workers in a variety of contexts, and the findings from this research have implications for this literature.

First, as outlined in Chapter Three, this research establishes inspectors as street-level bureaucrats and calls attention to the inspectors' counterparts, facility personnel, as front-line workers. The focus on these frequently overlooked groups of front-line workers should call attention to the value of studying front-line workers. Indeed many of the inspectors interviewed for this research were thrilled that scholarly attention was being paid to them as they often feel unnoticed in their roles in environmental protection. The street-level bureaucracy literature should continue to expand to incorporate inspectors and private sector personnel as part of its focus on other front-line workers responsible for policy implementation. Thus, inspectors and facility personnel are yet another important group of front-line workers in addition to the traditionally thought of police officers, social workers, and teachers.

Second, the findings of this research lend support for Maynard-Moody and Musheno's (2003) "citizen-agent" narrative. As Maynard-Moody and Musheno discuss, it is commonly assumed that front-line workers operate in ways consistent with the "stage-agent" narrative. As Chapter Three outlined, the state-agent narrative presumes that front-line workers strictly adhere to rules and procedures and operate with minimal amounts of discretion. As a result, one would assume there is little value in the interactions and relationships between front-line workers since rules and procedures are the basis for interaction. This research notes that the interactions between inspectors

and facility personnel are important and that both categories of front-line workers desire positive, trusting relationships with one another. In the course of their research, Maynard-Moody and Musheno found that front-line workers rely on judgments about the individuals they are interacting with and then adapt policy to conform to those judgments (18). In other words, the nature of the interactions between front-line workers appears to be a determining factor in which rules and procedures to apply since much of the “street-level work remains hidden from direct supervision” (Maynard-Moody and Musheno 10). This conclusion is supported in this research because the inspectors frequently discussed their willingness to work with facility personnel they trusted rather than “throw the book” at them when compliance problems arise. Also, facility personnel reported that if they had good relationships with their inspectors they would be more inclined to openly discuss problems their facility was having with compliance in an effort to seek assistance. These findings are consistent with Maynard-Moody and Musheno’s citizen-agent narrative and they continue the call to seek a better understanding of how front-line workers resolve the tension between the mandates they are tasked with and what front-line workers think is the “right” thing to do.

Relatedly, the support of the citizen-agent narrative in this research also brings into sharper focus discussions of the role and function of front-line or lower-level employees in organizations. Much of the front-line worker literature emphasizes the significant role these actors play in their organizations and this research further buttresses such claims. Inspectors and facility personnel do act on their own, and in keeping with the citizen-agent narrative, often do so based on the relationships with others as opposed to meticulously following rules and procedures. Additionally, the discretion of the inspectors is another significant topic that this research raises; the inspectors frequently noted that they were likely to deal differently with a facility with which they had a positive relationship than one with which the relationship was not as positive. Thus, it cannot be assumed

that the actions front-line workers take are strictly in keeping with organizational rules and procedures. As a result, further research is needed to better understand what guides front-line worker behavior.

Third, despite the challenges and obstacles that are largely beyond the control of the front-line workers interviewed in this study, the inspectors and facility personnel reported that they manage to function and carry out their responsibilities. Lipsky (1980) terms this ability to persevere as methods of “coping.” Even though inspectors and facility personnel face a variety of obstacles, including the complex and confusing nature of environmental regulations in their work (please see Chapter Five for a detailed discussion of the obstacles), they are able to continue to execute environmental policy in the U.S. Often, inspectors and facility personnel find themselves working together to understand the latest environmental regulations. This research calls attention to the ability of front-line workers to “cope” with often very daunting challenges; however, it did not address how these front-line workers cope or the implications of those mechanisms for their relationships and environmental regulation generally.

Finally, and perhaps most significantly, the overwhelmingly positive nature of the interactions between inspectors and facility personnel is significant because these front-line workers have managed to work together well despite an inherently adversarial system of environmental regulation. The regulatory system in the U.S. is inherently adversarial as it perpetuates an environment where regulators and the regulated are foes of one another. Kagan (2001) calls this “adversarial legalism.” Yet, this research unearths evidence that despite a system in which inspectors are the opponents of facility personnel (and vice versa), they are not the adversaries one might expect. Thus, while other actors in environmental regulation may indeed act as opponents of one another (such as industry associations and environmental groups), the front-line workers interviewed in this research indicate that despite the system, they manage to have positive relationships in an

inherently adversarial system. Not only do inspectors and facility personnel report that they desire positive interactions with each other, they also report generally having good interactions. Accordingly, there may be much to learn from the ability of these front-line workers to interact positively regarding environmental regulation and other areas of regulation. Moreover, their abilities to put aside systemic realities and work together may provide insights as to how other groups may do the same.

The previous discussion has focused on some of the potential implications of this research for the front-line worker literature. However, as with the potential implications for the environmental policy literature, more research is needed to better understand some of these implications and the following section discusses some of future research opportunities.

Future Research Needs

Undoubtedly, this research sparks queries for additional information and more research regarding the nature of the relationships between inspectors and facility personnel. This study has called attention to this oversight in existing literature and begun to explore the nature of these relationships to signal their significance in environmental policy. Much work remains.

First, the findings of this research indicate the relationships are positive, yet they provide little insight into why the relationships are good. An explanation for why the relationships are better than expected is a next logical step for this research. One can only speculate at this point why the relationships are positive. For instance, both the inspectors and facility personnel may strive for a positive working relationship as it makes their jobs easier; Lipsky (1980) notes that street-level bureaucrats often devise coping mechanisms to deal with difficult tasks. At one level, inspectors and facility personnel may think a positive relationship is necessary for environmental protection. At another level, a good relationship may simply be less work for the front-line workers. For instance, if there are problems at a particular facility, an inspector has additional paperwork and compliance

verification that has to be done. If the inspector works with facility personnel to rectify a compliance problem on site instead of officially reporting the problem, there is simply less work. These explanations are purely speculative, and more research is needed to understand why these relationships are positive to better understand what it takes to build good relationships between these front-line workers.

Second, it is imperative that more focus be placed on regulatory relationships at the ground-level because they are vital to the success of regulation, yet often overlooked, particularly in environmental policy. The true measure of success of policies is how they actually work, and those individuals on the front-lines play a significant role in implementing policy. Related to environmental policy, if one wants to find out how environmental regulation actually is working, one should investigate what the front-line workers actually do. Although implementation of policy depends on factors other than the actions of front-line workers alone, it is difficult to deny their importance. Indeed the urgency is particularly acute as there are more calls to move away from one model of regulation, in this case command and control, to other models. McCaffrey, Smith, and Martinez-Moyano (2007) emphasize studying the dynamics of these relationships in a policy domain other than environmental policy, noting “[h]ow regulatory relationships operate in practice indicates the likely benefits and hazards of...newer approaches” (309).

Third, research needs to continue to focus on environmental regulation on the state level. The existing literature on environmental policy overwhelmingly focuses at the U.S. federal level, even though most of the implementation occurs at the state level with front-line workers such as those examined here. Accordingly, similar studies need to be conducted with more inspectors and facility personnel not only in Virginia but also in other states. Some of the dimensions that should be compared include statements by similar facility types, inspectors in the same environmental media, and geographical/regional differences. Also, states with varying levels of commitment and

capacity for environmental protection should be compared. Research needs to include larger samples to allow for more definitive conclusions. Additionally, study of the relationships of higher level agency and regulated facilities' officials is needed, because even given the importance of front-line workers, there are other significant actors in the environmental regulatory system. Moreover, more exploration about state environmental agencies themselves also must occur, since these organizations can impact the relationships between front-line workers.

Fourth, similar research needs to be carried out focusing on federal front-line workers and interactions with facility personnel. Both inspectors and facility personnel included in this research suggested that the relationships between federal inspectors and facility officials are very different than those at the state level. For instance, both an inspector and a facility official separately described the same audit of a particular facility by EPA inspectors; although the inspector and facility official were in different capacities (one observing the audit, the other subject to it), both conveyed a similar assessment of the entire experience. They indicated that EPA inspectors were extremely adversarial, showed a clear lack of competence, and obviously were looking to find fault with the facility. Other facility personnel relayed stories to me about similar encounters with EPA officials and emphasized the difference of working with EPA inspectors in comparison to DEQ inspectors. Although these are just a handful of anecdotes, they raise intriguing questions about possible differences between state and federal regulators. Undoubtedly, further study is needed to investigate these differences.⁶ I am unsure as to what accounts for the perceived differences. It may be because of differing timelines for inspections, how EPA selects facilities to inspect, or the literal and figurative distance of EPA from facilities. Although I only have anecdotal evidence from a handful of interviewees to support such expectations, they merit further study.

⁶ The literature suggests that in states with regulations and penalties less stringent than federal ones, federal regulators have to be the ones to impose tougher standards (see, for example, Atlas 2007); thus, there is expectation that significant differences would be present in the interactions of front-line workers.

Fifth, research should also focus on the types of policies that are conducive to building trust among front-line workers and other individuals in the environmental regulatory system. Assuming trust is a laudable goal, we need to explore ways that policies may be developed to work towards trusting relationships between actors. Research is needed in the environmental policy arena to see if there are existing policy innovations already in place in which trust can be assessed. Also, research should suggest policies that may help build trust and then they should be enacted for future study. We should also look to other policy arenas for particular policies that may be adaptable to environmental policy and the building of trust.

Conclusion

The relationships between inspectors and facility personnel were more positive than expected, and they demonstrate significant degrees of trust. These results, however, do not allow for definitive conclusions about the nature of the interactions between front-line workers in environmental regulation. This research raises questions about the common assumption that the relationships between inspectors and facility personnel are poor, which is significant in light of the growing push to adopt next-generation environmental policies that are predicated on positive and collaborative working relationships between front-line workers. Even more important under these new policies is the necessity of trust. Although the prevailing literature often notes the lack of trust in the environmental regulatory system, the findings from the interviews demonstrate that trust between the regulators and regulated can be and is present in relationships, at least on the front-lines. This exploratory research should serve as a catalyst for more extensive study of these key relationships between inspectors and facility personnel in environmental regulation, particularly as the shift from traditional command and control regulations to more collaboration based next generation of policies continues to occur.

“Cause it’s always been a matter of trust...”
- Billy Joel

WORKS CITED

- Andrews, Richard N. L. 1999. *Managing the environment, managing ourselves: A history of American environmental policy*. New Haven, Conn.: Yale University Press.
- Andrews, Richard N. L., Amaral, Deborah, Nicole Darnall, Deborah Rigling Gallagher, Daniel Edwards, Jr., Andrew Hutson, Chiara D'Amore, Lin Sun, and Yihua Zhang. 2003. *Environmental management systems: Do they improve performance?* Chapel Hill: Department of Public Policy, University of North Carolina at Chapel Hill and Environmental Law Institute.
- Atlas, Mark. 2007. Enforcement principles and environmental agencies: Principal-agent relationships in a delegated environmental program. *Law and society review* 41, 4 (December): 939-980.
- Auerbach, Carl F. and Louise B. Silverstein. 2003. *Qualitative data: An introduction to coding and analysis*. New York: New York University Press.
- Bacot, A. Hunter and Roy A. Dawes. 1997. State expenditures and policy outcomes in environmental program management. *Policy studies journal* 25, 3: 355-370.
- Bailey, Carol. 1996. *A guide to field research*. Thousand Oaks, Calif.: Pine Forge Press.
- Bardach, Eugene and Robert A. Kagan. 1982/2002. *Going by the book: The problem of regulatory unreasonableness*. New Brunswick, N.J.: Transaction Publishers.
- Berg, Bruce L. 2007. *Qualitative research methods for the social sciences*. 6th ed. New York: Pearson.
- Berry, Jeffrey M. 2002. Validity and reliability issues in elite interviewing. *PS* (December): 679-682.
- Bucher, Rue, Charles E. Fritz, and E.L. Quarantelli. 1956. Tape recorded interviews in social research. *American sociological review* 21, 3 (June): 359-364.
- Buffalo Springfield. 1966/1989. For what it's worth. *Buffalo springfield*. Atco.
- Carlson, Darren K. 2005. Who will protect the environment? *The Gallup poll Tuesday briefing*. (April): 21-22.
- Clegg, Stewart R. and Cynthia Hardy. 1999. Representations, In *Studying organizations: Theory and method*, eds. Stewart R. Clegg and Cynthia Hardy. London: Sage Publications.
- Coglianesi, Cary. 1999. The limits of consensus. *Environment* 41 (April): 28-33.
- Coglianesi, Cary and Jennifer Nash, eds. 2001. *Regulating from the inside: Can environmental management systems achieve policy goals?* Washington, D.C.: Resources for the Future.
- Davies, J. Clarence and Jan Mazurek. 1997. *Regulating pollution: Does the U.S. system work?* Washington, D.C.: Resources for the Future.

- Dietz, Thomas and Paul C. Stern. 2002. Exploring new tools for environmental protection, In *New tools for environmental protection: Education, information, and voluntary measures*, eds. Thomas Dietz and Paul C. Stern, 3-15. Washington, D.C.: National Academy Press.
- Dirks, Kurt T. and Donald L. Ferrin. 2001. The role of trust in organizational settings. *Organization science* 12, 4 (July/August): 450-467.
- Dobra, John L. and Jeanne Wendel. 1999. Pursuing environmental goals. In *Handbook of Global environmental policy and administration*, eds. Dennis L. Soden and Brent S. Steel. New York: Marcel Dekker, Inc.
- Durant, Robert F., Rosemary O'Leary, and Daniel J. Fiorino. 2004. Introduction. In *Environmental governance reconsidered: Challenges, choices, and opportunities*. Robert F. Durant, Daniel J. Fiorino, and Rosemary O'Leary, eds. Cambridge, Mass.: The MIT Press, 1-28.
- Edelenbos, Jurian and Erik-Hans Klijn. 2007. Trust in complex decision-making networks: A theoretical and empirical exploration. *Administration and society* 39, 1 (March): 25-50.
- Eisner, Marc Allen. 2006. *Governing the environment: The transformation of environmental regulation*. Boulder, Colo.: Lynne Rienner Publishers, Inc.
- The Environmental Council of the States. 2001. *State environmental agency contributions to enforcement and compliance*. Report to Congress (April). Available at www.ecos.org.
- Ferguson, Kathy E. 1984. *The feminist case against bureaucracy*. Philadelphia: Temple University Press.
- Fichman, Mark. 2003. Straining towards trust: Some constraints on studying trust in organizations. *Journal of organizational behavior* 24, 2 (March): 133-157.
- Fournier, Valérie and Mihaela Kelemen. 2001. The crafting of community: Recoupling discourses of management and womanhood. *Gender, work, and organization* 8, 3 (July): 267-290.
- Gambetta, Diego. 1988. Can we trust trust? In *Trust: Making and breaking cooperative relations*. Diego Gambetta, ed. Cambridge, Mass.: Basil Blackwell.
- Gerring, John. 2004. What is a case study and what is it good for? *American political science review* 98, 2 (May): 341-354.
- Gormley, William T. 1998. Regulatory enforcement styles. *Political research quarterly* 51, 2 (June): 363-383.
- Gormley, William T. 1997. Regulatory enforcement: Accommodation and conflict in four states. *Public administration review* 57, 4 (July/August): 285-293.
- Granovetter, Mark. 1985. Economic action and social structure. *American journal of sociology* 91, 3 (November): 481-510.

- Green Day. 1995. Armatage shanks. *Insomniac*. Reprise.
- Hardin, Russell. 1998. Trust in government. In *Trust and governance*, eds. Valerie Braithwaite and Margaret Levi. New York: Russell Sage Foundation, 9-27.
- Harris Poll #77. (October 13, 2005). *Harris Poll #77 Press Release*. Retrieved November 20, 2005, from http://www.harrisinteractive.com/harris_poll/index.asp?PID=607.
- Hawkins, Keith. 1984. *Environment and enforcement: Regulation and the social definition of pollution*. Oxford: Clarendon Press.
- Hawkins, Keith and John M. Thomas. 1984. The enforcement process in regulatory bureaucracies. In *Enforcing regulation*. eds. Keith Hawkins and John M. Thomas. Boston: Kluwer-Nijhoff Publishing.
- Hockenstein, Jeremy B., Robert N. Stavins, and Bradley W. Whitehead. 1997. Crafting the next generation of market-based environmental tools. *Environment* 39:4 (May) 12-20, 30-33.
- Hoffman, Andrew J. 2001. *From heresy to dogma: An institutional history of corporate environmentalism*. Expanded edition. Stanford, Calif.: Stanford Business Books.
- Hoffman, Andrew J., Hannah C. Riley, John G. Troast, Jr., and Max H. Bazerman. 2002. Cognitive and institutional barriers to new forms of cooperation on environmental protection: Insights from project XL and habitat conservation plans. *American behavioral scientist* 45:5 (January) 820-845.
- Hult, Karen M. 1995. Feminist organization theories and government organizations: The promise of diverse structural reforms. *Public productivity and management review* 19, 2 (December): 128-142.
- Hutter, Bridget M. 1997. *Compliance: Regulation and environment*. Oxford: Clarendon Press.
- Joel, Billy. 1986. A matter of trust. *The bridge*. Columbia Records.
- Johnson, Gail. 2002. *Research methods for public administrators*. Westport, Conn.: Quorum Books.
- Joint Legislative Audit and Review Commission (JLARC) of the Virginia General Assembly. 1996. *Interim report: Review of the department of environmental quality*. House Document No. 44 (1996 Session). Richmond, Virginia: Commonwealth of Virginia.
- Joint Legislative Audit and Review Commission (JLARC) of the Virginia General Assembly. 1997. *Review of the department of environmental quality*. Richmond, Virginia: Commonwealth of Virginia.
- Jordana, Jacint and David Levi-Faur. 2004. The politics of regulation in the age of governance.

- In *The politics of regulation: Examining regulatory institutions and instruments in the age of governance*. Jacint Jordana and David Levi-Faur, eds. Boston: Edward Elgar.
- Kagan, Robert A. 2001. *Adversarial legalism: The American way of law*. Cambridge: Harvard University Press.
- Kagan, Robert A. 1994. Regulatory enforcement. In *Handbook of regulation and administrative law*. David H. Rosenbloom and Richard D. Schwartz, eds. New York: Marcel Dekker, Inc.
- Karkkainen, Bradley C. 2002. Collaborative ecosystem governance: Scale, complexity, and dynamism. *Virginia environmental law journal* 21, 189: 190-243.
- Kaufman, Herbert. 1960. *The forest ranger: A study in administrative behavior*. Washington, D.C.: Resources for the Future.
- Kettl, Donald. 2002a. Introduction. In *Environmental governance: A report on the next generation of environmental policy*. Donald Kettl, ed. Washington, D.C.: Brookings Institution Press.
- Kettl, Donald. 2002b. Conclusion: The next generation. In *Environmental governance: A report on the next generation of environmental policy*. Donald Kettl, ed. Washington, D.C.: Brookings Institution Press.
- Kim, Seok-Eun. 2005. The role of trust in the modern administrative state: An integrative model. *Administration and society* 37:5 (November) 611-635.
- King, Andrew A. 2006. The role of management in stakeholder partnerships. In *Leveraging the private sector: Management-based strategies for improving environmental performance*, Cary Coglianese and Jennifer Nash, eds. Washington, D.C.: Resources for the Future. 228-245.
- Kirk, Jerome and Marc L. Miller. 1986. *Reliability and validity in qualitative research*. Beverly Hills, Calif.: Sage Publications.
- Kraft, Michael E. 2001. *Environmental policy and politics*, 2 ed. New York: Longman.
- Kraft, Michael E. 2007. *Environmental policy and politics*, 4 ed. New York: Longman.
- Kramer, Roderick M. 1999. Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual review of psychology* 50: 569-598.
- Kubasek, Nancy K. and Gary S. Silverman. 2000. *Environmental law*, 3 ed. Upper Saddle River, N.J.: Prentice Hall, Inc.
- Lane, Christel. 1998. Introduction: Theories and issues in the study of trust. In *Trust within and between organizations: Conceptual issues and empirical applications*, ed. Christel Lane and Reinhard Bachman Lane:1-30. New York: Oxford University Press.
- LaPorte, Todd R. and Daniel S. Metlay. 1996. Hazardous and institutional trustworthiness: Facing a deficit of trust. *Public administration review* 56, 4 (July/August): 341-347.

- Levi, Margaret. 1998. A state of trust, In *Trust and governance*, eds. Valerie Braithwaite and Margaret Levi. New York: Russell Sage Foundation, 77-101.
- Lincoln, Yvonna S. and Egon G. Guba. 1985. *Naturalistic inquiry*. Beverly Hills: Sage Publications.
- Linkin Park. 2000. In the end. *Hybrid theory*. Warner Brothers.
- Lipsky, Michael. 1980. *Street-level bureaucracy: Dilemmas of the individual in public services*. New York: Russell Sage Foundation.
- Lowry, William R. 1992. *The dimensions of federalism: State governments and pollution control policies*. Durham, N.C.: Duke University Press.
- Luhmann, Niklas. 1979. *Trust and power*. New York: John Wiley & Sons.
- Marshall, Catherine and Gretchen B. Rossman. 2006. *Designing qualitative research*. 4th ed. Thousand Oaks, Calif.: Sage.
- Marshall, Catherine and Gretchen B. Rossman. 1999. *Designing qualitative research*. 3rd ed. Thousand Oaks, Calif.: Sage.
- May, Peter J. and Raymond J. Burby. 1998. Making sense out of regulatory enforcement. *Law & policy* 20, 2 (April): 157-182.
- May, Peter J. and Søren Winter. 2000. Reconsidering styles of regulatory enforcement: Patterns in Danish agro-environmental inspection. *Law & policy* 22, 2 (April): 143-173.
- Mayer, Roger C., James H. Davis, and F. David Schoorman. 1995. An integrative model of organizational trust. *The Academy of Management Review* 20, no. 3 (July): 709-734.
- Maynard-Moody, Steven and Michael Musheno. 2003. *Cops, teachers, counselors: Stories from the front lines of public service*. Ann Arbor, Mich.: The University of Michigan Press.
- McCaffrey, David P., Amy E. Smith, and Ignacio J. Martinez-Moyano. 2007. "Then let's have a dialogue?": Interdependence and negotiation in a cohesive regulatory system. *Journal of public administration research and theory* 17, 2 (April): 307-334.
- Miles, Matthew B. and A. Michael Huberman. 1994. *Qualitative data analysis: An expanded sourcebook*, 2nd ed. Thousand Oaks, Calif.: Sage Publications.
- Möllering, Guido. 2006. *Trust: Reason, routine, and reflexivity*. New York: Elsevier.
- Moore, David W. 2006. Britons, Canadians, and Americans evaluate their governments. *The Gallup poll briefing* (March): 46-47.
- National Academy of Public Administration. 1997. *Resolving the paradox of environmental protection: An*

- agenda for Congress, EPA, and the states.* Washington, D.C.: National Academy of Public Administration.
- Nye, Joseph S., Philip D. Zelikow, and David C. King, eds. 1997. *Why people don't trust government.* Cambridge, Mass.: Harvard University Press.
- Nyhan, Ronald C. 2000. Changing the paradigm: Trust and its role in public sector organizations. *Administration and society* 30, 1 (March): 87-109.
- O'Leary, Rosemary and Tracy Yandle. 2000. Environmental management at the millennium: The use of environmental dispute resolution by state governments. *Journal of public administration research and theory.* 10, 1 (January): 137-155.
- Parker, Christine and John Braithwaite. 2003. Regulation. In *The Oxford handbook of legal studies*, eds. Peter Cane and Mark Tushnet. New York: Oxford University Press. 119-145.
- Pearl Jam. 1998. *Wishlist.* Yield. Sony.
- Plater, Zygmunt J.B., Robert H. Abrams, William Goldfarb, and Robert L. Graham. 1998 *Environmental law and policy: Nature, law, and society.* American Casebook Series, 2 ed. St. Paul, Minn.: West Publishing.
- Potoski, Matthew and Aseem Prakash. 2004. The regulation dilemma: Cooperation and conflict in environmental governance. *Public administration review* 64, 2 (March/April): 152-163.
- Rabe, Barry G. 2006. Power to the states: The promise and pitfalls of decentralization. In *Environmental policy: New directions for the twenty-first century.* Norman J. Vig and Michael E. Kraft, eds. Washington, D.C.: CQ Press, 34-56.
- Rabe, Barry G. 2004. *Statehouse and greenhouse: The emerging politics of American climate change policy.* Washington, D.C.: Brookings.
- Rabe, Barry G. 2002. Permitting, prevention, and integration: Lessons from the states. In *Environmental governance: A report on the next generation of environmental policy.* Donald Kettl, ed. Washington, D.C.: Brookings Institution Press.
- Resource Renewal Institute. 2001. *The state of the states: Assessing the capacity of states to achieve sustainable development through green planning.* San Francisco: Resource Renewal Institute.
- Ringquist, Evan J. 1994. Policy influence and policy responsiveness in state pollution control. *Policy studies journal* 22, 1: 25-43.
- Ringquist, Evan J. 1993. *Environmental protection at the state level: Politics and progress in controlling pollution.* Armonk, N.Y.: M.E. Sharpe.
- Rondinelli, Dennis A. and Michael A. Berry. 2000. Corporate environmental management and public policy. *American behavioral scientist* 44:2 (October): 168-187.

- Rosenbaum, Walter A. 1998. *Environmental politics and policy*, 4 ed. Washington, D.C.: CQ Press.
- Rousseau, Denise M., Sim B. Sitkin, Ronald S. Burt, and Colin Camerer. 1998. Not so different after all: A cross-discipline view of trust. *The academy of management review* 23:3 (July): 393-404.
- Rubin, Herbert J. and Irene S. Rubin. 2005. *Qualitative interviewing: The art of hearing data*. 2nd ed. Thousand Oaks, Calif.: Sage.
- Ruscio, Kenneth P. 1999. Jay's pirouette, or why political trust is not the same as personal trust. *Administration and society* 31, 5 (November): 639-657.
- Schoorman, F. David, Roger C. Mayer, and James H. Davis. 2007. An integrative model of organizational trust: Past, present, and future. *The academy of management review* 32:2 (April): 344-354.
- Shaw, Robert Bruce. 1997. *Trust in the balance: Building successful organizations on results, integrity, and concern*. San Francisco: Jossey-Bass Publishers.
- Sigman, Hilary. 2003. Letting states do the dirty work: State responsibility for federal environmental regulation. *National tax journal* 56, 1 (March): 107-122.
- Sitkin, Sim B. and Nancy L. Roth. 1993. Explaining the limited effectiveness of legalistic "remedies" for trust/distrust. *Organization science* 4, 3 (August): 367-392.
- Stavins, Robert and Bradley Whitehead. 1997. Market-based environmental policies, In *Thinking ecologically: The next generation of environmental policy*, eds. Marian R. Chertow and Daniel C. Esty, 105-117. New Haven, Conn.: Yale University Press.
- Sussman, Glen, Byron W. Daynes, and Jonathan P. West. 2002. *American politics and the environment*. New York: Longman.
- The Wallflowers. 1996. Three Marlenas. *Bringing down the horse*. Interscope Records.
- Thomas, Craig W. 1998. Maintaining and restoring public trust in government agencies and their employees. *Administration and society* 30, 2 (May): 166-193.
- Tyler, Tom R. 2003. Trust within organizations. *Personnel review* 32, 5: 556-568.
- Ulsaner, Eric M. 2002. *The moral foundations of trust*. New York: Cambridge University Press.
- U.S. Environmental Protection Agency, Office of Enforcement and Compliance Assurance. 2002. *Conducting environmental compliance inspections: Inspector's field manual*. International edition. Washington, D.C.
- U.S. General Accounting Office. 2002. *Environmental protection: Overcoming obstacles to innovative state regulatory programs*. Report to Congressional Requesters, GAO-02-268. Washington, D.C.

- Van Slyke, David M. 2007. Agents or stewards: Using theory to understand the government-nonprofit social service contracting relationship. *Journal of public administration research and theory* 17, 2 (April): 157-187.
- Vaughn, Jacqueline and Hanna J. Cortner. 2005. *George W. Bush's health forests: Reframing the environmental debate*. Boulder, Colo.: University Press of Chicago.
- Virginia Department of Environmental Quality Enforcement Division Website. <http://www.deq.virginia.gov/enforcement>. Accessed 15 May 2007.
- Virginia Department of Environmental Quality – Enforcement Division. 1999. *Enforcement manual*. December 1.
- Virginia Department of Environmental Quality Regional Office website. <http://www.deq.virginia.gov/regions/homepage.html>. Accessed 19 June 2007.
- Virginia Department of Environmental Quality VEEP Program website. <http://www.deq.virginia.gov/veep>. Accessed 10 May 2007.
- Virginia Department of Environmental Quality Website. <http://www.deq.virginia.gov>. Accessed 13 December 2006.
- Warren, Carol A. B. 2002. Qualitative interview, In *Handbook of interview research: Context and method*, Jaber F. Gubrium and James A. Hostein, eds, 83-101. Thousands Oaks, Calif.: Sage.
- Waterman, Richard W. and Kenneth J. Meier. 1998. Principal-agent models: An expansion? *Journal of public administration research and theory* 8, 2 (April): 173-202.
- Weber, Edward P. 1999. The theory and practice of collaborative policy and dispute resolution mechanisms: The case of environmental policy, In *Handbook of global environmental policy and administration*, eds. Dennis L. Soden and Brent S. Steel. New York: Marcel Dekker, Inc.
- Weber, Linda R. and Allison I. Carter. 2003. *The social construction of trust*. New York: Kluwer Academic/Plenum Publishers.
- Wilbanks, Thomas J. and Paul C. Stern. 2002. New tools for environmental protection: What we know and need to know, In *New Tools for environmental protection: Education, information, and voluntary measures*, eds. Thomas Dietz and Paul C. Stern, 337-348. Washington, D.C.: National Academy Press.
- Williams, Bruce A. and Albert R. Matheny. 1995. *Democracy, dialogue, and environmental disputes: The contested languages of social regulation*. New Haven, Conn.: Yale University Press.
- Williamson, Oliver E. 1993. Calculativeness, trust and economic organization. *Journal of law and economics* 30 (April): 131-145.
- Winter, Soren C. and Peter J. May. 2001. Motivation for compliance with environmental regulations. *Journal of policy analysis and management* 20, 4 (Fall).

- Woliver, Laura, R. 2002. Ethical dilemmas in personal interviewing. *PS: Political science and politics* 35, 2 (December): 677-678.
- Wondolleck, Julia M. and Steven L. Yaffee. 2000. *Making collaboration work: Lessons from innovation in natural resource management*. Washington, D.C.: Island Press.
- Yin, Robert K. 1989. *Case study research: Design and methods*. Revised edition. Newbury Park, Calif.: Sage Publications.
- Zaheer, Akbar, Bill McEvily, and Vincenzo Perrone. 1998. Does trust matter? Exploring the effects of interorganizational and interpersonal trust on performance. *Organization science* 9, 2 (March-April): 141-159.
- Zucker, Lynne G. 1986. Production of trust: Institutional sources of economic structure, 1840-1920. In *Research in organizational behavior* vol. 8, B.M. Staw and L.L. Cummings, eds. Greenwich, Conn.: JAI Press, 53-111.

APPENDIX A INTERVIEW QUESTIONS

Questions for Inspectors:

- Tell me about your job. What does it entail?
 - How long have you been in the job? With DEQ?
 - How many sources?
 - Frequency of inspections?
 - What do you like and dislike about your job?
- In general, what are the interactions like with the people at the sources you inspect?
- Can you tell me about an encounter with a source that was positive?
 - What is it about this encounter that made you tell me about this experience as an experience that falls under the category of a good relationship?
- Can you tell me about an encounter with a source that you have a relationship with that was not so positive?
 - What is it about this encounter that made you tell me about this experience as an experience that falls under the category of a bad relationship?
- What are the characteristics of good interactions?
 - What are some of the things that are most important to you in these interactions/relationships?
- What about trust? Is trust a factor in these relationships? If so, how? If not, why not?
- What are some of the obstacles to having the kinds of interactions/relationships with the sources you would like?

Questions for Source Personnel:

- Tell me about your company. What type of operation is it?
- Tell me about your job.
 - What are your primary responsibilities? Length of time in job?
 - How long have you been in your current job?
 - How frequently to you have interaction with DEQ inspectors?
 - How often do you have visits from DEQ?
- What are the interactions like with the inspectors¹ from DEQ?
- Can you tell me a story about an encounter with a DEQ inspector that was positive?
- Can you tell me a story about an encounter with a DEQ inspector that was not positive?

¹ This phrasing acknowledges that source personnel may have air, water, and waste inspectors to deal with and may have had several different air inspectors, for instance, over time.

- What are some of the things that are most important to you in these interactions/relationships?
- What about trust? Is trust a factor in these relationships? If so, how? If not, why not?
- What are some of the challenges, obstacles, or barriers you see with environmental regulation in Virginia?
 - What would change? Do differently?