

Perceptions of Indigenous and Industry Relations and the Albertan Bituminous Sands
Industry

By
Turner Wyatt
University of Colorado at Boulder

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Thesis Advisors:

Sarah Rogers: Environmental Studies, Committee Chair
Dale Miller: Environmental Studies
Charles Wilkinson: Colorado Law

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Table of Contents

Acknowledgments.....	1
Preface.....	2
Introduction	7
Background.....	11
Methods	17
Research Regulations and Practices	20
Conduct Strategies	22
Research Methods	24
Discussion	27
Perspectives on Bitumen Development.....	30
Conversations with Bituminous Sands Associates.....	31
Conversations with Indigenous Peoples	56
Analysis	74
Results Analysis	75
Methods Analysis.....	80
Conclusion.....	82
Recommendations	84
Appendix.....	87
Appendix A: UROP Grant Application Narrative	87
Appendix B: Revised UROP Application Narrative	93
Appendix C: IRB Protocol	96
Appendix D: IRB Consent Document.....	101
Appendix E: IRB Supporting Documents.....	105
Bibliography	108

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I was inspired to take this on in a class taught by my Committee Chair, Sarah Rogers. In “Mineral Development in the Rockies,” the capstone course for my Environmental Studies undergraduate degree, we were encouraged to pick a topic of our choice and write a “thesis” about it. Now, over a year later, it seems my love for learning about the energy industry and environmental justice has transformed my original thesis, and taken me on a grand, unforgettable adventure. A special thanks goes out to Sarah, whose passion, love of questioning, and creativity, was the motor behind this process, which changed direction many times over the course of the past year. I will feel successful if my readers develop an appreciation of the mantra that kept me encouraged while writing:

“The only way we’re going to make it through the twenty first century is by learning to take care of each other.”

-Sarah Rogers

Preface

Working across cultural, national, and ideological borders was one of the biggest challenges I faced while working on this project. Others were trying to relate to people on both sides of an argument, and attempting to communicate the beliefs of one side to another as a sort of translator. I found it exciting and difficult to play this translator role, experiencing for the first time the feeling of mediating a contentious and emotional debate. I will never forget the feeling of freeness I experienced on this part-academic-research-part-personal-growth adventure.

These challenges manifested in various ways, but one practical and emblematic way was with regard to my use of terminology. Many of the words I used during my research, and ways I used them, shifted through time, embodying the malleability of my mind as I learned new things and traveled to new places. I want to point out several of these words to clarify my writing later on.

First, I will explain the differences in my use of Aboriginal versus Indigenous person, versus Native American versus Indian. “Aboriginal” is used when I am referring to Indigenous people native to Canada. There are three types of Aboriginal peoples in Canada, First Nations, Métis, and Inuit. I use “Native American” to describe an Indigenous person native to the United States. Indigenous is a qualifier that will be used to encompass people across North America, and around the world, keeping in mind the great diversity that exists among Indigenous peoples on Earth. “Nation” is a generic term that signifies the sovereign governance of an Indigenous group. I will never use “Indian” unless in a direct quote, as this was the term most often used by my Indigenous interviewees to describe themselves.

Similarly, “band” refers to an Indigenous group in Canada, and “tribe” to one in the United States. A “reservation” a parcel of land under the jurisdiction of a sovereign Indigenous Nation in the United States, and a “reserve” is the equivalent in Canada. I make these distinctions because they are the self-prescribed terms used by the populations in question. Although most of my interviewees and subjects were in Canada, Native Americans in the United States have been a vocal presence in the bituminous sands debate, and offer insight and perspective to my project.

Additionally, since my research took me all around North America, meeting with many different people all considering themselves American, I will use the term U.S. American when referring to people in the United States of America, and Canadian when referring to people in Canada. “American,” I believe, is a term that must be used carefully, and only by those willing to reconcile the overwhelming diversity within America (as in, across all the Americas).

Upon arriving to Calgary my first stop on my field trip, I had the opportunity to go to the rodeo with a couple of friends who worked for a Canadian conventional oil company. It was Calgary Stampede week, the city’s western culture festival, so even the oil executives could be spotted on the streets with plaid shirts, cowboy hats, and big belt buckles. After the rodeo, I started up a conversation with one of my friends from the oil company about my study. “I’m here learning about the tar sands,” I said. He jolted, put his hand on my shoulder and let out a nervous and hushing “Whoa!” as two or three people within an earshot spun around to see who was the culprit. “Oil sands,” he said. “They’re called oil sands.”

The experience of being corrected when using the politically incorrect term “tar sands” as opposed to the accepted “oil sands” was emblematic of my experience, as I ventured into the politically volatile arena of the bituminous sands. Here in the oil town of Calgary, standing against the bituminous sands was not only seen as unjust and radical environmentalism, but unfair and arrogant neglect of those who have worked to make the bituminous sands the flagship of the Canadian economy.

The Canadian Association of Petroleum Producers, the association of oil and gas companies that represent 90% of the \$110 billion-per-year Canadian petroleum industry, states on their website that the Alberta government’s position on the semantics is the following: “Oil sands is an accurate term because bitumen, a heavy petroleum product is mixed with the sand. It makes sense to describe the resource as oil sands because oil is what is finally derived from the bitumen.” (“Oil Sands or Bituminous sands?,” 2014). This logic has been argued as messy and dishonest by some, who say the term “oil sands” was created to make the industry sound cleaner. (Nikiforuk, 2009) In fact, until the 1960s, most everyone used the term “tar sands” to describe the mixture of sand and bitumen. At this point, the bituminous sands industry began to take off and it made more sense to refer to the mixture as oil sands for clarity’s sake, since oil production was to replace tar and asphalt production as the primary goal of the industry (Oil Sands Discovery Center, 2014). Neither term is correct, however, because bitumen is chemically identical to neither tar nor oil. “Bituminous sands,” a mouthful, is the most accurate way of describing the substance. In any case, formerly, the three terms were considered interchangeable.

Today, one's decision of which term to use is a political one. In a meeting with an oil company employee in Calgary, we remarked how interesting it was that in Canada "oil sands" is the neutral term used by most everyone. To take a political stance against the resource, a radical may say "tar sands." In my experience in the United States, however, the opposite is true and "tar sands" is a neutral term that does not indicate the stance of the speaker, while "oil sands" is more often used by those who wish to show their support of the resource. I use "bituminous sands" in this report to avoid the politics. In my field study, I would use whichever term my interviewee used.

Finally, note that the most profound limitation of this paper is that in addition to an academic document focused on answering a question, it is my attempt at expressing my personal growth as a learner and adventurer. Of course, 100 pages would not nearly suffice to articulate such a meaningful experience into words. To acknowledge this limitation while maintaining some of the language that shows my personal growth, I have intentionally written this paper in an order that reflects where my thoughts were at the time of writing. Starting at the Background section, the paper was written chronologically starting in the Fall of 2013. Although not every word's tense will reflect it perfectly for structural reasons, much of the copy in this paper was written at particular moments in time, corresponding to points on the timeline of this project. For example, the Background section was written in Fall of 2013, before I embarked on my field study, which has a significant impact on the way I thought was best to contextualize the problem before I actually saw it for myself. I have done this to hopefully allow my reader to follow me through my production of this paper as I would learn new things, write about them, and then come across some new piece of information and need to change the

way I was writing. I hope this offers useful insight on the differences between my perceptions overtime in a more eloquent way than I would otherwise be able to offer.

Introduction

Few oil development endeavors in history are as gigantic and impressive as that of the bituminous sands of Alberta, Canada. Vast geologic formations of bitumen, a tar-like, heavy petroleum product found amongst sand and clay, lay underneath more than 50,000 square miles of boreal forest in the northern part of the province, centered along the Athabasca River. Until recently, this resource was not largely sought after, as bitumen takes more energy and time to process and refine into useful products than conventional petroleum. The developments, in which major oil companies from across the world have taken part, have had a large impact on the Canadian economy, but questions have been raised about the industry's effects on the environment and the people of the region. Studies have claimed the bituminous sands do indeed produce an unjust amount of environmental burdens that are ultimately born by distinct populations.

The purpose of this paper is to evaluate environmental justice implications of the bituminous sands industry. Industry's methods of extraction, transportation, and processing at all levels of the production stream will be analyzed. More specifically, the subjects will be the Indigenous groups in Canada and the United States who are most affected by these methods with regard to proximity, environment, and economics. The nature of environmental justice in Canada and the geographic location of the bituminous sands both propagate a history of Indigenous populations as those who have borne a large share of the effects of industry, whether positive or negative. Of course, the bituminous sands industry's multidimensionality, size, and scope make it difficult to declare one concise set of effects. However, its proximity to traditional Indigenous territories, and the

historical vulnerability of Indigenous populations to environmental and social burdens suggests that there could be some inherent effects of the industry on these populations.

This paper is intended for the use of said Indigenous communities, bituminous sands companies, consumers of the products created by bituminous sands, and other groups or individuals who may be interested in contributing to the writing of a consensual discourse for the bituminous sands. With such a new and proliferating industry, on which there exists little research, it is necessary to closely examine the effects in consideration of the potential repercussions. As such, in order to increase the awareness of the effects of consuming this product, as well as to help to inform the actions of both Indigenous populations and oil companies as they grapple with their complex relations, this paper serves as a tool with which to inform thought processes of those who are concerned with the effects of bituminous sands on Indigenous communities.

While some Indigenous groups explicitly support bituminous sands development as part of their basic mission, others are whole-heartedly opposed, and have taken action against its expansion in certain cases. This fact illuminates how different each of the groups is, despite the fact that in some cases, certain groups have expressed a feeling of solidarity with others. Even with multifaceted diversity among Indigenous groups, they are for the most part considered collectively in this paper. This is a result of treaty agreements and other written legislation that has effectively lumped groups together for governmental intents and purposes, as well as the fact that similar experiences across various groups create patterns that speak to the nature of the Indigenous condition. For the purpose of this study, the often difficult and contentious relationships between the

industry and Indigenous groups creates a unifying bond between them, regardless of religious or cultural differences.

The bituminous sands industry-Indigenous peoples environment is a contentious one. Headlines of newspaper columns and academic journal articles portray the relationships to be bad, if existent at all (Kalman, 2008; Gerson, 2013). To make the situation more complicated, both entities are occupying the same space, constantly being forced to grapple with the social, environmental, and economic effects they have on one another. On one side of the heated debate there are the pro-oil sands energy supporters. These individuals whole heartedly support the industry, and resent those who are ungrateful enough to call the industry an economic miracle. On the other side is the anti-tar sands environmentalists. These people, who are often Indigenous people, recognize that the industry is an environmental nightmare, contributing to climate change and meanwhile destroying the lives and cultures of nearby Aboriginals. The contention manifests itself in the forms of social media, protests, policy, and other forms of media. The little published information on this topic is so emotional and sensationalized yet jam-packed with quantitative statistics, each side providing their own numbers.

The intent of this paper is to inspect these social, environmental, and economic effects through a Meta analysis of a number of sources. This Meta analysis will then be combined with an analysis of both traditional knowledge and current anecdotal perceptions of people who are closely affected by the bituminous sands. Perceptions of different groups in Canada and the United States were collected during a field study.

In the field study, I, the principle investigator, drove almost 7,000 miles throughout North America meeting with oil companies, Indigenous peoples, and other

interest groups to collect people's perceptions on the different industrial operations methods. This field study was based on the hypothesis that different operations methods were the causes of the vastly different perceptions of the industry. For example, I predicted that the reason one Aboriginal group might be more adverse to industry was because they lived closer to a surface mine rather than an underground mine. Almost immediately upon arriving to Alberta and witnessing the complexities of the industry first hand, I found my original hypothesis to be incorrect. It was not operations methods that had polarized the industry and created contentious relations between Indigenous peoples and the industry, but something much more foundational to the individual. I made this realization when in Calgary, on my way to the Athabasca region where the development is concentrated.

In Calgary, I met with several corporate level oil company employees and a journalist. In these first conversations I found my rudimentary questions to be insufficient at creating a conversation given the highly integrated and organized relations between Indigenous peoples and industry. This misconception was likely due to my preparatory research consisting in part of news articles, and highly sensationalized journal articles. This was some of the only information available to an out-of-country researcher, investigating a new and under-researched field.

From that time on, instead of asking the preconceived questions (outlined in my UROP grant application in the Appendix) regarding operations methods, I began to simply listen to what my interviewees seemed naturally inclined to talk about on their own with regard to industry-Indigenous relations and industry in general. I did this in an attempt to learn more about the relationships that exist between these parties, how they

arose, and what people want out of them in the future. As I later discovered, simply listening to people's perceptions of the relationships was the proper method of inquiry for my project. This is due to the cultural sensitivities necessary to employ in just and appropriate research, and the fact that people's perception of the bituminous sands industry seems to be more often rooted in certain personal conceptions rather than practicality and rationality. In this paper I hope to answer the following questions: What are the relationships that exist between Indigenous peoples and the bituminous sands industry? What perceptions exist of these relationships? How can these perceptions inform society's discourse regarding the bituminous sands industry?

Background

In 1963, long after the discovery of bitumen in Northern Alberta, the first large scale bituminous sands project began called the Great Canadian Oil Sands, operated by Sun Oil, now known as Suncor Energy. At this time, the upfront capital costs of production were so great that oil companies were reluctant to invest in the new technology. Confident the resources could be economical, the Alberta provincial government created the Alberta Oil Sands Technology and Research Authority (AOSTRA) in 1974, which provided seed money and funded bituminous sands development research. The work of AOSTRA helped to make the bituminous sands economically feasible by bringing down capital costs through research and investment (Barlett, 2003).

The bituminous sands industry has now exploded into one of the biggest industrial projects in history. Since 2000, more than \$100 billion have been invested in the Albertan

bituminous sands, now considered the third largest oil reserve in the world, behind only the reserves of Saudi Arabia and Venezuela (Dorow, 2013).

Almost 169 billion barrels, or 11% of the world's oil reserves, sits in Alberta in the form of bituminous sands, a mixture of bitumen (10%), sand, clay and other minerals (85%), and water (5%). Bitumen is a very heavy and viscous, tar-like substance that requires additional treatment before it can be refined ("Oil Sands," 2013).

About 20% of Alberta's bitumen is close enough to the surface to extract using the traditional open pit mining technique, where about two tons of mined bituminous sands yields one barrel of bitumen. Open-pit mines can be as big as 57 square miles and almost 300 feet deep. Forest must be clear-cut and tons of overburden must be excavated before a mine can be developed. Large shovels, able to lift 100 tons of bituminous sands in a single scoop, are positioned within the mine bed where they fill gigantic trucks, capable of hauling 400 tons of bituminous sands per load. The trucks haul the bituminous sands to an onsite processing plant where the upgrading and refinement processes begin. One typical sized surface mine moves enough earth to fill a football stadium every six days (Woynillowicz, 2007).

The other 80% of Alberta's bitumen can only be accessed using the in-situ, or underground, processes of steam assisted gravity drainage (SAGD) and cyclic steam simulation. In SAGD, oil is pumped out of the ground by drilling two parallel horizontal wells into the underground layer of bitumen. One well is injected with high-pressured steam that heats the bitumen and allows it to flow into the other well where it is extracted. Cyclic steam simulation is similar, but one well is used for both steam injection and oil production over a series of steps.

Currently, the bitumen in Alberta is extracted from surface mines and in-situ wells about equally (“In-situ Process,” 2013). There are currently nine approved open pit mines, more than fifty approved in-situ projects (Alberta Energy Regulator, 2013).

These huge projects are not without environmental cost. Of the almost 150,000 square miles of boreal forest in Alberta, one quarter will be affected if all of the active bituminous sands deposits are developed. If the 5% of the deposits that can be accessed by surface mines are developed, then an area bigger than Boulder, Denver, and Arapahoe Counties in Colorado will be turned into large open pit mines (Alberta Energy Regulator, 2013, my calculation).

In addition to the scar on the landscape, the bituminous sands have correlated to other adverse environmental effects. In Lake Athabasca, about 200 miles down the Athabasca River from the bituminous sands, deformed fish and rare cancers in people have been reported. “It had to have been something with the water, air, or land,” said one resident of the community of Fort Chipewyan, a small, fly-in-fly-out, mainly Indigenous community of 1,200 people on the banks of Lake Athabasca. This resident was 17 when she contracted cancer and three of her family members also have cancer. High rates of illness including extremely rare cancers, auto-immune diseases, and renal failure have been reported. I traveled to Fort Chipewyan during my field trip, which will be discussed in detail later in this paper.

Additionally, huge tailings ponds of contaminated water have been reported as deadly to animals (Kalman, 2008). These toxic lakes, filled with byproduct from the upgrading process, cover over 70 square miles of the area (“The fact on oil sands,” 2014). Oil companies have had to take precautions to ensure wildlife stay away from tailings

ponds. Despite these environmental risks, the bituminous sands industry presses on, collecting huge profits and adding to the Canadian economy.

Communities near the bituminous sands developments have experienced a boom-town like explosion in the economy since 2000. In 2012, one in fifteen jobs in Alberta was energy related, and the province has one of the highest gross domestic product per capita ratios in Canada (Patchett, 2012). From February 2013 to March 2014, Alberta accounted for 87% of all new jobs in the country (Toneguzzi, 2014).

Alberta's biggest bituminous sands companies make profit by exploiting new and developing markets, being opportunistic, and adjusting to demand (Cryderman, 2014). Economically, everyone seems to be benefitting from the bituminous sands development, including the Indigenous populations that are willing to take part in the industry. These partnerships may seem counterintuitive given many Indigenous peoples' cultural affinity to the natural environment. However, closer inspection reveals the complex relationship between Indigenous groups and industry.

For First Nations in Canada, the people's spiritual and cultural identity is tightly interwoven to their land (Droitsch, 2010). The relationship is one of mutual benefit, not exploitation. One study on the terminology of Indigenous North Americans reported that not a single Indigenous group in the study had any term describing the ownership of nature (Edmonson, 1958).

In 1870, Hudson's Bay Company, which had acted as the de-facto government in Canada for the 200 years prior, relinquished its domain to the newly-formed state of Canada through the Deed of Surrender ("Our History: Overview," 2013). Over the following 50 years, the newly confederated government negotiated the "numbered

treaties,” in which deals were made with Indigenous groups regarding the ownership and regulation of land. Under the pressure of a diminishing fur supply and newly arriving settlers competing for natural resources, tribes sought out treaties despite unknown consequences, fearing that without them they would be forgotten in an increasingly Westernized economy. Canada viewed the treaties as an avenue to increase assimilation in Indigenous peoples without yielding any of its newly acquired domain.

The numbered treaties ceded Indigenous tribes a title to a parcel of land. It remained important to the Crown, however, to not allow this title to reach the level of ownership, which could impede future developmental interests (Taylor, 1985). The ceded “Indian Country,” which was usually land that was undesired or unexplored by colonists was to be reserved for the Natives, but in this way, the Natives were now being merely tolerated in the land they had once lived freely (Huseman, 2012).

Since this time of colonization, European Canadians have struggled in their relationships with Indigenous groups. Now, the Canadian federal government has made initiatives to encourage Indigenous entrepreneurship, and to instill the ideal of human capital into Aboriginal peoples. For example, in 2003 the federal government introduced the Aboriginal Skills and Employment Partnership (ASEP), an \$85 million labor initiative to maximize training and job opportunities for Aboriginal people (Government of Alberta, “Aboriginal People”).

Other programs and initiatives were created throughout the late 20th early 21st centuries to foster Indigenous participation in the contemporary economy. In Alberta, the Aboriginal Training to Employment Program (ATEP) was implemented to support relationships between Aboriginals and industry and provide trainings for jobs. One

industry makes up a large portion of jobs in Alberta: the bituminous sands. In 1999, the Athabasca Tribal Council (ATC)—a conglomerate of five First Nations—and the bituminous sands industry made their partnership formal with the ATC/Industry Capacity Building Agreement, which addressed the socio-economic impacts of the bituminous sands industry on First Nations. This was perhaps the beginning of a robust Aboriginal stake in the industry. Now, bituminous sands companies prioritize the hiring of Indigenous employees and contractors. Since 2000, Indigenous-owned companies have earned over \$8 billion in bituminous sands contracts (“The Facts on Oil Sands,” 2014). In 2010, more than 1,700 Indigenous people were directly employed by bituminous sands development projects (Government of Alberta, “Aboriginal People”). In my visits to First Nation reserves, I witnessed first hand the great wealth generated by the bituminous sands.

Although bituminous sands companies welcome partnerships with Indigenous groups, soliciting themselves as economic allies, it is apparent that in some cases their interests differ greatly from those of the First Nations (Taylor, 2011). Many Aboriginal people depend on the bituminous sands for work and do not want to miss the opportunity to participate in a cash economy, but ultimately, many of them want to put an end to the development all together for ethical reasons (Thomas-Muller, 2011). Why would people reprimand the industry that supports them? Many Indigenous people feel the bituminous sands development is destroying the most important part of their spirituality, economy, and culture: their land. Bituminous sands mining strips away more of this resource in Alberta everyday, and thus Indigenous people have called the industry a “genocide.” (Droitsch, 2010).

Within this contentious political and social environment, polarization is prominent. How did this emotional divide come to be? From where did the diverse perceptions and opinions of the bituminous sands industry come? What are the Indigenous and industry perceptions that exist? What is the best way forward for industry in light of these perceptions? With these questions in mind, I set out to find the answers in the most culturally appropriate way.

Methods

This section serves as a review of the existing literature on the research methodologies I employed during my field study and analysis. The field study occurred in July, 2014, and involved driving to Alberta, Canada, and then South, along the potential path of the TransCanada Keystone XL Pipeline, conducting interviews and collecting perceptions of the bituminous sands industry from Indigenous individuals and associates of the industry. During this period, a snowball survey method was employed to collect the qualitative, traditional knowledge of peoples' perceptions. Due to laws and regulations restricting research on humans and more specifically research on Indigenous peoples, the methods employed by this project have been carefully researched and analyzed to avoid infringement of subjects' intellectual property rights. It was my goal to respect these laws and Indigenous cultural norms in order to do effective and appropriate research. The research methods used in this study were selected to try to answer the question, what are the most effective, culturally sensitive, and ethical ways of conducting and analyzing qualitative Indigenous human subject research?

In the 20th century, many human rights violations were reported as a result of unjust research practices on human subjects. Military and medical research atrocities, in

which diseases were unknowingly given to research subjects, led to the development of international standards on human subject research based on the principles of informed consent, weighing costs and benefits, and allowing research subjects to withdrawal from studies without consequence (Anderson et al., 2011). This led to certain agencies declaring regulations on how research could and could not be conducted on people. In the United States, The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research wrote *The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research* in 1979 based on three ethical principles. The first principle was respect for persons: the upholding of the autonomy of each person, and the right to protection for persons with diminished autonomy. The second principle was beneficence, which implies that subjects should be actively protected from harm. The third principle was justice, which suggests that benefits and burdens of research should be equitably distributed (The Belmont Report, 1979). A similar document was drafted in Canada in 1998 entitled *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. This document outlines three similar core principles: respect for persons, concern for welfare, and justice (Ethical Conduct for Research Involving Humans, 2011). In both cases, special attention is paid to potentially vulnerable populations based on historical marginalization or cultural differences.

Indigenous peoples in North America certainly qualify as historically marginalized and culturally different, existing in a North American culture in which advancements in technology and science encourage Indigenous people to question their own traditional knowledge (Denzin et al., 2008). Additionally, these populations are

especially at risk because outside researchers and entrepreneurs are able to profit from traditional knowledge without compensation to the population (Greaves, 1994).

Indigenous populations highly regard their sovereign rights to intellectual property and traditional knowledge as well as their own cultural traditions of protecting and respecting these rights.

Article 31 of the *United Nations Declaration on the Rights of Indigenous Peoples* states, “Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge, and traditional cultural expressions...” (United Nations Declaration on the Rights of Indigenous Peoples, 2008). This statement implies that Indigenous peoples have the right to do what they please with their traditional knowledge, including not divulge it to researchers or other non-Indigenous peoples looking to make profit. Article 27 of the International Labour Organization’s Indigenous and Tribal Peoples Convention states, “Education [programs] and services for [Indigenous peoples] shall be developed and implemented in co-operation with them to address their special needs, and shall incorporate their histories, their knowledge and technologies, their value systems and their further social, economic and cultural aspirations,” (Indigenous and Tribal Peoples Convention, 1989). Here we see international recognition of the fact that traditional knowledge is not just passed down through the generations as a cultural novelty, but as truth that Indigenous peoples uphold.

Since human subject research is essentially the collecting of knowledge from people, and Indigenous people have rights to their traditional knowledge, regulations on Indigenous human subject research have been produced in the US and Canada. Researchers must abide by these regulations when conducting research with Indigenous

peoples. In addition, individual Indigenous Nations, or groups of collaborating Nations, have articulated their own sets of codes for researchers to follow, as well as codes of conduct for non-Indigenous individuals to follow as they enter into an Indigenous community. These codes and regulations are in place to avoid research propagating the history of marginalization of Indigenous peoples: “The term ‘research’ is inextricably linked to European imperialism and colonialism. The world itself, ‘research,’ is probably one of the dirtiest words in the indigenous world’s vocabulary” (Smith, 1999).

Research Regulations and Practices

The guidelines and regulations for research and interaction with North American Indigenous peoples have several common themes: respect for culture and sovereignty, allowing Indigenous peoples to exercise control over their intellectual property and traditional knowledge, seeking informed consent, and accurately portraying cultural perspective through the involvement of the community.

The importance of researchers’ respect for Indigenous culture and sovereignty should be thought of in terms of the desire of Indigenous peoples to have their physical, social, economic, and cultural environments respected. Many people do not realize that Indigenous Nations, both in the U.S. in Canada, are sovereign nations within the countries. Consideration of Indigenous culture and sovereignty is so crucial to the wellbeing of the community that it often defines the well being of the nation at large. To uphold this well being, researchers should become aware of formal rules or customs before making contact with a community, and only operate within these rules throughout the duration of the study (Ethical Conduct for Research Involving Humans, 2010).

Intellectual property and traditional knowledge highlight one of the biggest differences between Indigenous and non-Indigenous culture: In Indigenous cultures,

intellectual property and traditional knowledge are believed to be owned collectively, in the form of a cultural resource, instead of private property. The formal protection of cultural resources became important to Indigenous cultures in the 1980s when tribes in the U.S. were fighting for legislation that would allow for the retention and preservation of sacred artifacts, lands, and ideologies (King, 1998). The protection of intellectual property and traditional knowledge is important to ensure the vitality and wellbeing of the culture; however, it is also important to consider compensation for communities by researchers or business people who use the information they gain from Indigenous peoples to make money. The best way to be supportive of the protection of intellectual property and traditional knowledge for researchers is to work within tribal sovereignty by asking permission from an authorized tribal government agent before engaging in any research. Not only does this practice reassure the people that their cultural resource is safe, but it will increase trust and encourage more participation in a study (Greaves, 1994).

“Informed” consent, in terms of human subject research, means all the activities involved in the research will be conveyed to and approved of by the subject before the research begins. Questions such as who is involved in the research, why the research is taking place, what the results will be used for, what are the risks of taking part in the study, and what is the duration of the study, should be answered before asking for consent. The way consent is obtained is also a crucial part of the informed consent process. Details of the study and written consent materials should be presented in language that the subject can easily understand, and should not be presented in a way that could make the subject feel pressured to do anything he or she does not want to. Most

importantly, the subject should feel comfortable declining to participate in the study, and know that doing so will not result in consequence (Assembly of First Nations, 2009).

Another theme in research methodology important to Indigenous peoples across North America is the assurance that the cultural perspective of the community is being accurately portrayed through the research. This is difficult to grapple with as a researcher because it requires a shift in the fundamental conceptual frameworks under which we think. For example, a researcher may interpret data using the quantitative methods he or she learned in a university, without realizing that he or she is ignoring the traditional qualitative knowledge the community has offered. If the researcher continues to interpret his or her data under the original assumption and does not communicate with the community, the research could end up being published without the true ideas of the community being conveyed (Assembly of Alaska Native Educators, 2000). Only the indigenous community itself can identify the potential risks of research, and they can only do this if they fully understand the research question, methodologies, and assumptions. Indigenous communities must be truly equal partners with the researchers through every step of the research and publication process if risks are going to be avoided. Communication between researchers and subjects is the key to ensuring the published work is agreeable with the Indigenous community (National Indian Education Association, 2014).

Conduct Strategies

Indigenous Nations have their own sets of regulations for conducting research to avoid human objectification, theft of intellectual property, and violations of the right to their own traditional knowledge of the land. Many of them also have systems of etiquette and cultural conduct that enable the upholding of traditional values. These norms should

be respected and followed not only to uphold and respect the traditions of the subject population, but also as a strategic way to build relationships with subjects and encourage more participation and involvement in a study.

It is important to know cultural norms before entering into a community, as some of them are very different from those of U.S. American culture. For example, it is often customary to allow elders to speak first and finish a thought before responding or begin questioning, no matter how long this takes. This contrasts with the common, fast-paced, and purpose-focused style of conversations in the United States. It is also rude to interrupt or openly disagree with an elder. During an interview with a Native American researcher at the University of Colorado at Boulder, I was urged to never ask to speak with an elder, and only speak to one if the conversation was initiated by the elder (Personal communication, McCann).

Reciprocity is another common cultural norm that I had to adopt in order to do effective and sensitive research. The acts of giving and receiving are significant in Indigenous culture. I asked for the time, patience, knowledge, and cooperation of my research subjects as I traveled. Therefore, it was appropriate that I carried small gifts to offer my subjects in return. I was advised to give various dried plants such as sweet grass or sage bundles to act as a memento of my home (Personal communication, McCann).

In addition to gifts, I had to focus on my communication style in order to be inclusive and effective in my research. An explanation of who I was and where I came from with regard to my family history was a typical salutation with my Indigenous interviewees. As a conversation progressed, I would speak in common terms, avoiding jargon that could make people feel excluded from what was being said. I observed others

to inform my own personal body language, voice, and sense of personal space.

Developing trust through conversation, humor, and simply listening, were invaluable tools for conducting effective and culturally appropriate research (Personal communication, McCann).

Research Methods

Essentially, through conversations and interviews, I spent my field study collecting people's perceptions. My work is an example of qualitative research through inductive understanding of research subjects, which has many approaches and practices. The Tri-Council Policy Statement on Ethical Conduct for Research Involving Humans defines qualitative research as research that "aims to understand how people think about the world and how they act and behave in it" (2011). There is no standardized way to analyze qualitative data, so in an individual study it is important to articulate the methods of analysis that will be employed (Tesch, 1990).

The traits of qualitative research include deep, rather than wide, research scope. Most of the time, as with my study, qualitative researchers would rather have deep and overlapping information than a wide variety of shallow information. Qualitative research involves a dynamic, reflective, and ongoing research process. Since the data that is collected during a qualitative research study is subjective based on the researchers' approach, assumptions, and personal bias, the study must be constantly reflected upon to strengthen its arguments (Ethical Conduct for Research Involving Humans, 2011).

The interviews I conducted were "semi-structured" and "in-depth." Semi-structured interviews have a list of guiding questions, but are not strictly required to only ask those questions. In-depth interviews are just that; in-depth interviews allow time for ideas to be developed fully (Tramblay et al., 2006). Conducting semi-structured

interviews gave me the capability to stray from my preconceived list of questions, and allow the conversation to flow to where the subject was most knowledgeable and comfortable. In-depth interviews lead to deeper conversations, and stronger arguments.

Interviewees and other research subjects were selected based on the snowball sampling method or link-tracing method (Handcock et al., 2011). This method involves building a network of research subjects based on the contacts and network of each preceding subject. Each time I met with a new subject I would ask them whom they thought I should talk to next, based on their experience and knowledge of the situation. This sampling method offered a higher level of interaction with my subjects since I allowed them to decide who should be involved in the study (Noy, 2008). This is also beneficial because it upholds the ideal of involving the community in Indigenous human subject research (Assembly of Alaska Native Educators, 2000). Snowball sampling can also help to connect with difficult-to-contact populations as the researcher is being referred from subject to subject on a personal basis (Heckathorn, 2011). The sampling procedure began with a convenience sample, in which I contacted the individuals relevant to the study that were most accessible via e-mail or phone. I would search for an oil company or Indigenous group on the Internet, and then contact the office and ask to speak to the person most appropriate for my study.

The final methodology I employed on my field study, which could fit into any of the subsections under the Methods section as a research practice, conduct strategy, and research method, is a feminist approach to listening. The approach is similar to the conduct strategies outlined by feminist participatory research, in which the needs of a marginalized community guide social action rather than outside assumptions of needs

guiding social action. In order to find out what these needs are, feminist participatory researchers listen to their subjects and create partnerships (Jaggar, 2014). The purpose is to unveil the actual needs of a community in order to create sustainable change. This notion of democratizing research assumes equality of intellectual authority, accepts criticism of methods, assumptions and reasoning, and shares standards of discourse, which may be altered through the integration of feedback. This methodology has been cited to not only be epistemically trustworthy, but to work particularly well with subordinated groups, such as my research subjects (Jaggar, 2014). I employed this feminist methodology by building relationships with my research subjects, avoiding imposing my own assumptions while instead focusing on listening, and welcoming criticism of my methods. This methodology, centered around the act of listening, allowed me to not only go to Canada with a set of preconceived questions, but to change that set of questions to better reflect the reality and interests of my research subjects.

In order to protect the identity of my research subjects, I have chosen to not use their names or refer directly to the group or organization they represent. Although my research subjects knowingly and consensually participated in my study, this protective measure was conceived to ensure that no research subject would be socially or legally reprimanded for their words.

In this section, I have outlined the research methodologies and practices utilized in my field research project during July of 2014, and in the analysis of my project. With these methodologies in mind, I sought out a grant from the University of Colorado at Boulder UROP and designed a field study. This process allowed me to organize my justification for desiring to go on this inquisitive adventure.

Since my study was a human subject research project, its funding was contingent upon a thorough review from the University of Colorado's Institutional Review Board (IRB), who ultimately approved my work, allowing for my grant funding. The documents involved with the IRB review, as well as my UROP grant application and field study description can be found in the Appendix of this document.

Discussion

In this section, I will discuss the proceedings of my field study, and begin to introduce new important concepts I discovered with regard to the bituminous sands' Industry-Indigenous relations. As mentioned in the Preface, most of what is written in the Background, and Methods sections of this document was written between September 2013, and June 2014, before I embarked on my study. This portion was written during and after my field study.

After about 10 months of scouring newspapers, academic journals, and government documents to research the effects of the bituminous sands industry on Indigenous peoples of North America, my field study for this report began in the summer of 2014. My girlfriend helped me convert the bed of my grandfather's 1978 Datsun pick-up truck, known in my family as the LBT, or Little Baby Truck, into a covered sleeping area, equipped with windows and curtains, a surprisingly comfortable mattress, and a solar panel on top to power my stove and computer. The plan was to drive the Datsun 7,000 miles, from Boulder, Colorado, up to the bituminous sands, and back down, talking to industry and Indigenous representatives along the way.

The odds were against the LBT with its tendency to break down, but starting on July 6, at a maximum speed of 65 miles per hour, fifteen books on CD from the Boulder

Public Library on hand, a misconception of what exactly was going on up there engrained in my mind, a blessing from my thesis committee on paper, and a grant from CU in my pocket, I drove North.

In four weeks I drove from Boulder, Colorado up through Calgary and Edmonton to Fort McMurray, the epicenter of the industry, around Northern Alberta, and then South along the path of the potential Keystone XL pipeline, the contentious international pipeline project that would carry bituminous sands synthetic crude oil from Alberta to refineries in the Gulf Coast of the U.S.. Finally, I ended up in Cushing, Oklahoma, the “Pipeline Crossroads of the World” and a major junction of the Keystone XL pipeline, before heading home and taking several weeks to reflect upon and analyze my experience.

The objective of my study was to travel throughout Alberta and the United States, conducting interviews with representatives from Indigenous groups and oil companies to try to conceptualize a general relationship between these entities, and hopefully make some recommendations on ways to for the industry to proceed. My plan was to do this by collecting the perceptions of members of Indigenous communities and associates of bituminous sands companies on the different operations methods of the industry. That is, I wanted to learn what people thought about in-situ mining versus surface mining, pipeline transport versus rail transport, and other extraction, midstream, and processing operations methods. Ultimately, my goal was to combine quantitative data on the environmental, economic, and social effects of each operations method with the qualitative data on perceptions of operations methods from my study to conclude on which operations methods were preferable. If an operations method was more

environmentally, economically, or socially beneficial and was also perceived more positively by my subjects, I would consider it preferable. If an operations method was perceived more positively even though it had less environmental, economic, and social benefits, I would look into the ways that the operations method gained its perception.

Although initially my study's purpose was to gain peoples' perceptions on the industry's operations methods, in this report I will include other knowledge that I gained about the industry. In fact, upon arriving to Canada and beginning my study, I realized that comparing perceptions of operations methods was not the crucial information that I planned on it being.

I also realized that the study I had planned on was far too large, involved and extensive to be within my reach. With my limited time, money, and experience it was clear that the study that I had planned for months was too small a piece of the whole story to allow me to make meaningful conclusions.

I realized early on that a simple comparison between in situ and surface mining would not be a sufficient representation of bituminous sands extraction methods given the variability in methodology across oil companies. How could I possibly look into every important operations method when there are so many and the technology is advancing so quickly? What if the differences between operations methods are not noticeable, or not important? What if my tiny and incomplete study's attempt at drawing large conclusions results in clouding the answers rather than clarifying them? What if industry's different operations methods are not what is most important to my research subjects? These are the questions that I asked myself upon arriving to Canada and realizing how quickly my one month there would pass.

Upon broadening the scope of my project to accommodate my incorrect hypothesis, I asked questions about what my research subjects naturally seemed drawn to. I allowed myself to develop more personal relationships with the people I encountered, traveled with interviewees to cultural events unrelated to the bituminous sands, and most of all, listened. Instead of focusing on my study, my story, my questions, I listened. I listened to the stories of the elders, the mine operators, and the Chiefs. I listened and therefore I heard a truly amazing story.

Drawing upon the feminist methodology of listening, I listened, allowing the truth, as seen through the eyes of my interviewees, to unfold before me. Finally, through listening, I was able to draw conclusions that offer an explanation of how people perceive the bituminous sands, and how those perceptions are created. This section of my report will serve to tell my story of listening to those who I encountered while exploring the bituminous sands.

I interviewed individuals associated with nine different bituminous sands organizations and 12 different Indigenous groups, filling the memory card of my voice recorder and the pages of my notebook. I spoke with those who loved the industry and those who hated it; those who had worked for the industry for decades and those who were just starting; Indigenous individuals who thought of the industry as genocide and others who thought of it as means to survival.

Perspectives on Bitumen Development

Wherever I traveled, the conversation about the costs and benefits of bituminous sands development was vibrant. The Canadians in my study did not know a little about the bituminous sands, they knew *a lot*, and most knew enough to have a well formulated opinion. The dichotomy of pro- and anti-bituminous sands believers was alive and well.

Everyone had strong, sometimes emotional things, to say about the industry, which led me to interesting conversations and a realization that almost everyone believed they have the right facts and the right plan. Although my Discussion section in this paper is organized into conversations with either Industry or Indigenous individuals, neither demographic is fully aligned with an argument for or against bitumen development.

In this section, I draw from the numbers, statistics, and sources offered to me by my interviewees. Whether talking to oil companies or Indigenous peoples, I use the “facts” they used, even if they conflicted with one another. This is in an attempt to better understand my interviewees perspective, and how and why each side of the argument has conceptualized their truth.

Conversations with Bituminous Sands Associates

The section is broken down into three subsections, Economics, Environment, and Society, with an emphasis on Indigenous relations. Breaking this section into these subsections is my doing, and does not necessarily reflect the format of my interviews as it was my goal to let the conversations flow as naturally as possible and illuminate the important issues from the perspective of my interviewee without my influence.

In my conversations with oil company office secretaries, communications advisors, rig operators, tour coordinators, consultants, and tribal relations coordinators, I found myself speaking with pleasant and warmhearted individuals. Despite the proverbial image of the evil oil company employee, all of my oil company associated interviewees were kind, intelligent, and eager to talk about their work. There is a real bituminous sands culture, full of history and hard work, of which my industry interviewees were very proud. The following is a collection of the main points of discussion in listening to bituminous sands company staff, supporters, and analysts. I have attempted to relay the

points my interviewees were naturally inclined to discuss on their own, paired with clarifying explanation from my continued research.

Economics

The most common, and most obvious, reasons for excitement and pride regarding bituminous sands were the economic benefits of the industry. Canada has the third largest proven oil reserve in the world of 175 billion barrels, 97% of which is in the bituminous sands of Alberta. This is impressive, but not as impressive as when you consider that the bituminous sands account for 56% of global oil available for private sector investment (“The fact on oil sands,” 2011). Yes, more than half of the oil not controlled by national governments exists in a Western, democratic, capitalistic country, where investors from all over the world can come and benefit: Canada.

The bituminous sands are an economic miracle for Canada. The industry is expected to contribute more than \$2.1 trillion to the Canadian economy over the next 25 years. Jobs will also increase. Today, there are more than 75,000 Canadian jobs associated with the bituminous sands industry. This number is expected to rise to 905,000 by 2035 (“The fact on oil sands,” 2014). The economic benefits will cross borders, as well, with an expected \$42.6 billion growth in the U.S. economy.

Locally, the Regional Municipality of Wood Buffalo, the area containing Fort McMurray and much of the Athabasca bituminous sands, is one of the most economically comfortable regions in Canada. In 2012, the average household income was more than \$189,000 (Wood Buffalo Economic Profile, 2014). With a population of 116,407, and an annual spending budget of about \$1 billion, Wood Buffalo has one rich government.

The price of housing reflects this economy. In 2012, the average price for a single family dwelling in Wood Buffalo was \$751,232. The average rental cost for a one-

bedroom apartment was \$1648. Even with real estate costs at astronomical highs, the affordability of living in the area is actually quite high, probably due to the region's average income being 103% above the national average (Wood Buffalo Economic Profile, 2014).

It is also a young place, further emphasizing the economic growth potential. The average age in Wood Buffalo is 32.7 years (Wood Buffalo Economic Profile, 2014). In an interview with an employee of a bituminous sands development group, my interviewee recalled the common anecdote of a 18 year old Canadian who graduates high school, moves to Fort McMurray, starts driving a truck in the oil field earning more than \$100,000 per year, and buys an \$850,000 house before he can drink a beer in most of Canada¹. This is why the population of the area is expected to almost triple between 2012 and 2030, but perhaps the population bomb has already exploded. 2012 census data found that there was a discrepancy between recorded residents and water consumption of more than 80,000 people (Wood Buffalo Economic Profile, 2014). This discrepancy is likely the result of thousands of camp workers and fly-in workers, who use the public utilities, but do not fill out a census.

As I drove past the many bituminous sands operations sites throughout Northern Alberta, I saw huge buildings nestled within the thick, boreal forest. These buildings are home to the many who want to enjoy the income provided by the region's economy, but not the commitment to permanently living in one of the towns, which are under resourced and endure a brutal winter of -40 degrees. Camps such as these also allow those who are willing to live and work on site to avoid the morning commute. With 27,000 people

¹ The legal drinking age is 19 most of Canada; it is 18 in Alberta.

commuting on one highway in Fort McMurray every morning, I heard that the seven-minute drive took more than two hours before the city expanded the highway.

Others choose to avoid the area altogether. With a typical work cycle of six days on, six days off, many workers choose to fly directly to work, sometimes from outside of Canada. In my interview with an oil sands development group, my interviewee told me stories of people flying in for work while living as far away as Las Vegas, Nevada, in order to enjoy all the amenities of a large city, while retaining the income and experience of working on the bituminous sands. Many people fly directly onto company airstrips located on site. So many, in fact, that more people are currently flying into company airstrips in the Athabasca region than into Fort McMurray's brand new airport.

Every person I interviewed acknowledged the economic benefits of the industry, but the boom-town type growth has led to social, environmental, and even economic problems. How does a small town like Fort McMurray plan for booming growth when the economy is based upon the volatile oil market? The answer is the Oil Sands Community Alliance (OSCA), a government appointed nonprofit to address socioeconomic problems caused by the bituminous sands industry. The four main focuses of OSCA are the issues of work force, infrastructure, community well being, and Aboriginal relations.

Sometimes it is good to have a high demand for jobs, as suggested by the often-boasted 3.5% unemployment rate in Wood Buffalo, one of the lowest in Canada (Wood Buffalo Economic Profile, 2014). High demand of jobs is good for young people to gain work experience. One interviewee's daughter was the manager of a Dairy Queen at age 16 because she was the most qualified applicant for the job. High demand for jobs,

however, can be problematic if there is a lack of hospital staff, police, and other fundamental services that increase the well being of a city.

Infrastructure throughout the Fort McMurray region is at or above capacity. With about 250,000 truck loads passing through Fort McMurray every year, some so big that the light poles need to be rotated to create a path, the roads leading to the bituminous sands are under pressure. Highway 63, “the Highway of Death,” leading from Edmonton to Fort McMurray, is currently under construction, and some say that the expansion and splitting of the highway is far overdue. “After a long weekend in the winter it is rare that everyone comes back to work on Monday without someone having been in an accident,” said one Aboriginal band office employee. Driving North on Highway 63, my tiny truck and I would be physically jolted from the wind created by the passing of some enormous semi truck, piled high with tree trunks or refinery equipment. This stretch of Highway 63 gets its nickname from the large number of head-on collisions (Nikiforuk, 2009).

The drive gets even scarier when you realize what you are sharing the road with. On several occasions on my drive, I saw a goliath “megaload” parked on the side of the road, taking a break until night time to continue its slow journey North. Megaloads, often carrying Asian manufactured equipment that came in through U.S. ports in Oregon and Washington, can be hundreds of feet long, hundreds of thousands of pounds, and employ four semi trucks linked together like train locomotives to crawl forward at less than walking speed. Over the past half decade, megaloads have caused quite a stir as environmentalists, Native Americans, and anti bituminous sands activists have stood in their paths, protesting the industry and expressing solidarity for the Indigenous peoples being affected. On several occasions, protests have led to arrests, on others, trucks have

had to find alternate routes to the bituminous sands. An interviewee told of an enormous bitumen upgrader component that had to be disassembled and shipped in smaller pieces with “incredible cost to the company” due to protests and legal action.

Once megaloads get into Fort McMurray, they face another set of infrastructural problems. Before the Grant MacEwan Bridge, which crosses the mighty the Athabasca River in the middle of the city, was rebuilt in late 2013, megaload drivers would have to exit the vehicles and allow the behemoth to be cinched across. This was to prevent casualties in case the bridge collapsed under the immense weight.

As the population, economy, and demand for workers and infrastructure booms in Fort McMurray, so does the crime rate. Within five minutes of arriving to Fort McMurray, my car was vandalized. A truck full of laughing young men pelted the LBT with eggs, yelling, “Fucker!” I got a good laugh out of the irony of driving for a week, just to get egged. Other stories are not as laughable. Drug use, prostitution, domestic violence, and child abuse have skyrocketed in the last decade (Nikiforuk, 2009). Despite the correlation to population increase allowed by the bituminous sands, the industry denies causality, boasting a study claiming that bituminous sands employees are not the criminals.

An economic boom associated with a natural resource boom will often be a harbinger for crime. On the tail end of my trip, I stopped in the Bakken region North Dakota. Here, the U.S. is experiencing its own contentious oil boom caused by advancements in hydraulic fracturing and directional drilling technology that some environmentalists say is unsafe. As with the bituminous sands, these claims do little to slow the industry, as it becomes the poster child for the resurgence of the U.S. American

oil industry. The Bakken region, some of which is located on Native American tribal land, has experienced a crime boom. During my time there, an oil company employee suggested I not camp in my truck as I had been the rest of my trip in the central hamlet of New Town, citing memories of cars on the side of the road with windows busted out and set ablaze. My conversations led me to believe that in New Town and in Fort McMurray, the crime seemed to be something people are willing to put up with due to the economic benefits.

It makes sense that an oil boom might indicate a crime boom. Job seekers flock from all over the world and find high wages here in Fort McMurray. They come to make money, not to be a part of the community, although the government and industry are attempting to change this through city redevelopment projects and new amenities. In my time in Fort McMurray it seemed to me that everyone, from the oil rig operators to the cashier at Tim Horton's, was there because of the bituminous sands, and without the bituminous sands there would be no need for so many of the things that make up the city's skyline: fast food restaurants, fork lift retailers, construction companies, and, of course, bituminous sands companies. The bituminous sands, and the demand for goods that their thousands of employees create, allow for all other businesses' success.

The economy was by a wide margin the most discussed topic in my conversations with bituminous sands enthusiasts and employees. One of the other most important factors in the bituminous sands milieu, according to these individuals, was something I did not expect: environmental performance.

Environment

The Oil Sands Community Alliance is to socioeconomic implications of the bituminous sands industry what the Canadian Oil Sands Innovation Alliance (COSIA) is

to environmental policy and technology. According to an employee at a bituminous sands development group, COSIA was created because bituminous sands companies realized that despite the typical capitalistic urge to outcompete it would be to the benefit of all bituminous sands companies to share ideas about environmental performance technology (“The facts on oil sands,” 2014). “We’ve become a scapegoat or a symbol for why it’s important to address how we use energy. Lucky us!” said my interviewee, citing the grief that the industry has endured for being especially environmentally degrading, a trend that has fueled large investments in environmental efforts.

It is true that the industry has endured a great deal of criticism from the environmentalism world. It is also true that bituminous sands companies spend millions of dollars on environmental projects such as reclamation and efficient technologies that use less water and energy. Now, with COSIA, when one company creates a new piece of technology, others have access to the idea, and the entire industry moves forward instead of one company. To date, COSIA member companies have shared 560 technological innovations at a cost of \$900 million (“The facts on oil sands,” 2014). While some argue that these advancements will do little to affect real change or save the environment, the amount of money companies are spending on this sector suggests an area of focus.

Many of the environmental innovations have had to do with the reclamation process. While on the public tour at a Suncor Energy site, we visited the Wapisew Lookout. This grassland of over 540 acres was the industry’s first reclaimed tailings pond. Where once there were millions of gallons of toxic tailings, which are composed of water, sand, and residual bitumen, now was home to grassy hills and a small pond. Suncor worked with biologists to identify and plant native grasses, shrubs, and trees that

would flourish here and make the area look as close to the original as possible. To entice raptors back to the area, reclamation teams buried trees upside down, with their roots acting as a perch for the birds to hunt. Although the growing season is short this far North, Suncor hoped that one day Wapisew Lookout blended in perfectly with the surrounding forest.

This is just one example of the projects created by the millions of dollars spent by bituminous sands companies to advance the reclamation process in the last decade. They have not necessarily spent this money by their own inclination, however. Alberta law requires that all land disturbed by bituminous sands development be reclaimed and remediated to a condition as similar to the state it was in before the disturbance as possible. Companies are also legally obligated to post a security deposit to the government in an amount great enough to cover the cost of remediation (“Understanding the oil sands: Land,” 2011). One look at an active surface mine and it becomes clear how extensive the reclamation process must be.

As a mine advances through time, the scar on the landscape shifts, new forest being cleared to make room for a new active mining operations while old mines are filled in with tailings sand in a process called backfilling. Once an inactive mine has been backfilled, top soil is reestablished and the land is recontoured to ensure a natural appearance and function. Next, the land is revegetated and monitored for well-being and growth (“Understanding the oil sands: Land,” 2011). In this process, called progressive remediation, an adjacent piece of the company’s site could be undergoing tree-slashing, active mining, or any other stage of the process. For this reason, the piece of land will not reach full reclamation for some time.

When a bituminous sands company applies for full reclamation, they must be sure that the site is no longer necessary in any way for their operations. This is because when full reclamation occurs, the leased land is handed back to the Crown² and is immediately once again available for public use. Bituminous sands companies are weary to make this commitment, as allowing the public onto land immediately adjacent to active mining operations poses safety concerns. Despite the thousands of acres that have been reclaimed by bituminous sands companies, very few have received full reclamation certification. In fact, of the 322 square miles disturbed by bituminous sands mining over the last 40 years, only about one third of one square mile has been fully reclaimed (“The facts on oil sands,” 2014).

Gateway Hill, the one square kilometer of fully reclaimed bituminous sands operations land, is now a public park and walking area, reclaimed in 1993 after being disturbed by Syncrude. As I drove past the hill, visible from Highway 63, a large sign triumphantly announced the reclamation. Just past the hill, over a desert of tailings sand and a sea of tailings ponds, a driver heading North can see steam billowing out of the Syncrude upgrader. It is important to note that although this piece of land is the first to reach certified reclamation, the land that was disturbed was not an active mine or tailings pond; rather, it was some undeveloped swath of land leased by Syncrude and probably used for storage purposes.

Another important set of environmental developments has to do with the management of tailings. Tailings liquid is a byproduct of the process of extracting bitumen from the sand. It consists of water, sand, clay, residual bitumen, organic compounds, and solvents (“Understanding the oil sands: Tailings Ponds,” 2011). During

² All public land in Canada is owned by the Crown of England via the Treaty of Paris of 1763.

the extraction process, a slurry is created of hot water is mixed with the bituminous sand. The hot water removes the bitumen from the sand and allows it to rise to the top of the slurry where it is collected for further processing. The remaining liquid and solid in the slurry is pumped into tailings ponds. Current bituminous sands tailings ponds cover more than 70 square miles, and growing (“The facts on oil sands,” 2014). A typical 100,000-barrel per day bitumen producing mine will create enough tailings to fill more than eight Olympic sized swimming pools every day (“Understanding the oil sands: Tailings Ponds,” 2011). This massive amount of fluid is difficult to manage, as the fine clay particles suspended in the tailings liquid can take more than 50 years to settle.

As I drove around the Fort Mc Murray area, large tailings ponds (which to me looked more like tailings lakes) would come into view near bituminous sands operations. Upon closer inspection, I noticed plastic scarecrows suspended above the liquid to fend off curious birds. The scarecrows are a tactic to protect animals conceived after a messy incident in 2008 when a flock of migratory ducks landed in a tailings pond, killing over 1,600 (“Oil sands death of hundreds of ducks, 2012”). The event was a public perception nightmare for bituminous sands companies. As an additional measure to protect animals, companies have installed propane cannons, which explode at random; creating a noise that will hopefully repel wildlife. As I made my way through the area, a loud gunshot sound from one of the cannons would rumble across the landscape every few seconds.

To speed up the tailings pond reclamation process, and hopefully rid the industry of one of its most ugly environmental concern, companies are experimenting with adding gypsum or acid/lime, byproducts of the extraction process, to the tailings, turning the mixture into an inert landfill. The Suncor tailings pond that was reclaimed to create

Wapisew Lookout was made by adding a flocculent to the tailings pond, speeding up the reclamation process from over a half century to about seven years.

Perhaps the most promising, and most cited environmental advancement in my interviews, was the advantage of in situ mining techniques. In situ, or “in place,” mining happens underground, with much less surface disturbance. In situ methods use natural gas to produce steam, which is injected underground and melts the bitumen that can then be pumped to the surface. The production happens more than three hundred feet below the surface, so instead of digging up hundreds of acres in a typical open pit mine, large amounts of bitumen can be produced from an oil pad of just a few acres. This was the benefit of in situ mining I heard most in these conversations. “We take people on tours of [an in situ mining site], and they ask, ‘Where’s all the death and destruction?’” said one interviewee, noting in situ’s relatively low visible environmental effects.

Right now, about 53% of bitumen in the bituminous sands is produced by this method, but that percentage will undoubtedly grow, as 80% of all bitumen in the region is too deep underground to be produced by a surface mine. This growth is concerning to environmentalists and climate scientists, since SAGD is currently the most carbon intensive method of producing oil. To produce one barrel of oil via SAGD, 1,200 cubic feet of natural gas are burned, releasing 65 kilograms of carbon dioxide (CO₂) into the atmosphere (Junewarren-Nickle's Energy Group, 2014).

To cut back on this massive carbon footprint, bituminous sands companies and the Alberta government are exploring two main options. By 2050, Alberta’s carbon emissions are projected to grow astronomically, largely due to bituminous sands development. To offset this, and work towards meeting the goals of the province’s

climate change plan, the Alberta Provincial Government is working with oil companies to implement carbon capture and storage techniques, where CO₂ would be captured at an upgrader or power plant, and piped underground to be stored under pressure in a suitable geologic formation (“Understanding the oil sands: Climate change,” 2011).

Another cost and CO₂ reducing technique involves the addition of solvents that include butane, propane, and a proprietary substance that weakens surface tension between liquids and solids to the water before it is heated into steam. The solvents have the ability to decrease the amount of water that needs to be heated, thereby reducing the amount of natural gas that must be burned. The solvents also have the ability of increasing oil recovery rates by up to 15% (Junewarren-Nickle's Energy Group, 2014). Imperial Oil has taken the technology one step further by getting rid of the need for water altogether and replacing steam injection with higher pressure, lower temperature solvent injection (“The Steam From Below,” 2014).

Bituminous sands companies are certainly spending money on environmental improvements. In this short description, I was not able to include all the environmental advancements I learned about from my interviewees, much less the many advancements being developed by companies I did not interview. Whether bituminous sands companies are advancing their environmental practices because they are required to by law, want to reduce operations costs, or truly care about the environment is up for interpretation. In any case, from my conversations with oil company associates, it was clear that the industry thought it was excelling.

It is appropriate to talk about my discussions concerning the industry's relations with Indigenous peoples last, since it is an issue that does a good job of integrating all the

other facets of the industry (environmental, economic, and societal) into context. I asked about the relations between industry and Indigenous peoples in every interview, and received a wide variety of reactions and beliefs. This is an issue that would often not be mentioned by my industry interviewees until I began asking questions about it. The flaring contention of the bituminous sands industry burned brighter during conversations like these, than when discussing economics or the environment, things that can be quantified. When discussing Indigenous peoples, my interviewees and I were essentially determining the value of something unquantifiable and non-analyzable: culture.

Society: Indigenous Relations

“Every oil company has an Aboriginal relations coordinator, so it’s obviously important,” said one interviewee, an employee of a bituminous sands organization. It is true, based on my conversations with bituminous sands company associates and enthusiasts, Indigenous relations are very important to the industry. Although this was not a flagship concern of my industry interviewees, they certainly had a lot to say while we were on the subject. Throughout the history of the bituminous sands development, policies and programs have been implemented to address the conditions faced by Indigenous peoples upon the impending expansion of a natural resource industry. One bituminous sands employee claimed that “natural resources, not oil, are the contentions.” There is a long history of contention, success, and blight within the realm of the intersection of industry and Indigenous peoples in North America (Wilkinson, 1999). My industry interviewees, however, seemed to think that that bituminous sands industry was working to change this trend for the better.

The majority of my conversations about Indigenous relations with bituminous sands associates touched on the notion of mutual benefit. It became clear that bituminous

sands companies truly believe there are ways for Aboriginal communities and oil companies to work together and prosper in harmony. “Both industry and Aboriginals are there legitimately; where’s the economic trade off?” said one interviewee. As will be discussed later in this report, one of the most cited reasons for Indigenous disapproval of the bituminous sands is the belief that bituminous sands companies are unjustly operating on traditional Aboriginal land. Bituminous sands companies are operating within a different conceptual framework, exemplified by the quote from my interviewee above. Within the bituminous sands industry, it is common knowledge that bituminous sands operations are just, legal, and fairly monitored, and thus have as much of a right to occupy the land in this modern, Western country as anyone. The hope for bituminous sands companies is that both Indigenous peoples and oil companies will benefit through collaboration for a variety of reasons: to take advantage of the work force that exists, to maintain a social license to operate, and to recognize their legal obligation to do so.

Bituminous sands companies want to employ the large workforce that exists within the surrounding Aboriginal populations. In a region where the demand for labor is high enough to hire a 16 year old to manage a Dairy Queen, it makes sense to seek out employees who live nearby. This way, there can be fewer commuters driving back and forth to Fort McMurray from cities like Edmonton and Calgary on a weekly basis, clogging up roads and increasing the risk of accidents. Many Aboriginal communities are proximal to bituminous sands operations. One of my industry interviewees cited that every Aboriginal group in Canada exists within 200 kilometers of some natural resource industry.

Aboriginal populations are growing faster than non-Aboriginal populations across Canada, with a growth rate of 20.1% between 2006 and 2011, compared to just 5.2% for non-Aboriginals (Employment and Social Development Canada, 2014). In Alberta, there are more than 220,000 Aboriginal individuals. Of that approximately 220,000 residents, about 23,000 live nearby bituminous sands operations. In 2010, more than 1,700 Aboriginals in the area had permanent bituminous sands jobs. When one considers the entire bituminous sands work force comprised of permanent positions, construction jobs, and contractor employees, an estimated 10% is made up of Aboriginals (Government of Alberta, “Aboriginal People”).

To achieve this high percentage of Aboriginal bituminous sands employees, industry has created a number of programs through history. In 1976, Syncrude Canada Limited, now one of the biggest bituminous sands producing companies and the largest employer of Aboriginals in Canada, created the Syncrude Indian Opportunities Agreement. The document was signed by the federal and provincial governments, the Indian Association of Alberta in an attempt to increase the job opportunities for Aboriginals within the emerging industry (The Standing Senate Committee on Aboriginal Peoples, 1999). This agreement was described to me by one of my interviewees as a sort of “affirmative action for Aboriginals.” Since then, programs like ASEP, ATEP, and the ATC/Industry Capacity Building Agreement have been implemented by government, industry, and Aboriginal groups to increase Aboriginal participation in the large bituminous sands work force.

As will be discussed later in this report, I was surprised on my trip to find so many of my Indigenous interviewees were employed by the number one bituminous

sands related employer I witnessed: independently owned Aboriginal contracting companies. To accommodate contractors such as these and break down barriers between Aboriginal businesses and industry, a nonprofit called the Northeast Alberta Aboriginal Business Association works with 246 full and associate member businesses (Northeastern Alberta Aboriginal Business Association, 2014).

These organizations and agreements put in place by industry, Aboriginals, and government, show that it is important to those involved with the bituminous sands industry to employ Aboriginals, thereby allowing them to benefit economically as much as any other population. These programs have created a tendency of which the industry is proud. With so much contention surrounding the relations between industry and Indigenous peoples, oil companies see it as beneficial to associate with Indigenous persons and organizations. “It’s a big competition” between oil companies to hire an Aboriginal with a college education, said one of my interviewees, highlighting the positive environment of Indigenous-industry relations through the eyes of industry.

As one of my interviewees pointed out, programs that act to reduce barriers for Aboriginals in the bituminous sands industry often highlight the differences in culture between the bituminous sands industry and Aboriginal communities. “It’s always a big challenge to work with [Aboriginals]...the CEOs of their organizations are always community members and they don’t always have business skills.” The traditional mode of operations for Aboriginal peoples was explained to me on my trip as more “right brained” when compared to the fast-paced, efficiency driven mode of contemporary North American society. This cultural barrier may appear as an obstruction to efficiency to industry, but it has not kept Aboriginals from profiting from industry.

Industry's actions to involve Aboriginals in the bituminous sands boom has certainly paid off for Aboriginal groups financially. From 1998 to 2010, Aboriginal contractors secured more than \$5 billion in contracts, with more than 25% of that being gained in 2010 alone, indicating the proliferating benefits for Aboriginals (Government of Alberta, "Aboriginal People"). This amount does not include the salaries of Aboriginals directly employed by bituminous sands companies, nor does it account for the increased business in other sectors of the economy as a result of the economic boom in the region. Certain structures in places appear to assure that of the more than \$2 trillion that the bituminous sands are expected to add to the Canadian economy over the next 25 years, Aboriginal companies and individuals will secure a significant portion, despite cultural barriers.

Even with my interviewees' inclination to want to highlight the ways in which Indigenous peoples and bituminous sands companies can work together, there were some topics that drew out the differences in the traditional conceptual frameworks of the vastly different cultures these entities represent. The distinction between traditional knowledge, held by Indigenous peoples as a result of millennia of tradition, and technical knowledge, held by oil companies as a result of Western science and technology, was important to my industry interviewees. "The corporate world could learn a lot from Traditional knowledge. Natives could learn a lot [from industry] too," said one bituminous sands employee. In the dozens of glossy-paged bituminous sands information booklets I accumulated on my trip, bituminous sands companies featured explanations of how traditional knowledge was being integrated into the company's discourse. "We consider and incorporate traditional environmental knowledge and other Aboriginal experience

and perspectives into our development,” said Shell Canada’s Oil Sands Performance Report 2013. “[ConocoPhillips Canada’s Faster Forests program is] working with local First Nations to learn what kind of plants may have a traditional use and add those species to the reclamation mix,” said the Environment section of the Opportunity Alberta Oil Sands & the Environment magazine. The fact that a profit driven, publicly traded company would put contemporary science on the back burner to make room for the anecdotal, traditional knowledge of Aboriginal partners exemplifies bituminous sands companies’ desire to create collaborations with Indigenous peoples.

One pattern I found interesting as I met with bituminous sands associates and employees was that Aboriginal groups who had more collaborations with the bituminous sands industry through leased land, contracting agreements, and employment, were mentioned more in conversation. As I learned on my trip, some Aboriginal groups have developed reputations with other Aboriginal communities for being highly involved in the industry. Terms like “sell out,” “obsessed with money,” and “more white than Indian” were used by other Aboriginal groups to describe the Aboriginal bands that I was encouraged to visit by industry interviewees. This pattern suggests a desire of industry to blanket the sentiment of the best Aboriginal relationships over all Aboriginal relationships.

Bituminous sands companies do not only want to collaborate with Aboriginals, they know that they need Aboriginals’ approval in order to maintain a social license to continue operating. “Oil sands companies are working off a social license. They are not going to keep working if there are people chained to the trees,” said one interviewee, who may have been referencing one of the many acts of Indigenous nonviolent direct action in

protest of the industry (McCreary, 2014; “Tribes, environmentalists plead with judge to stop Highway 12 megaloads,” 2013). Or, perhaps this interviewee was alluding to a desire of reconciliation with Aboriginal peoples, with whom they have worked now for almost half a century: “[In] five decades of operating, we’ve always known that we’re on treaty land.” “Treaty land” refers to a section of land parceled out by the Canadian government around the turn of the 19th century, when Aboriginal peoples and the Federal Government of Canada were officially deciphering their land and relationships.³ A longing to collaborate is a notion that most of my bituminous sands associated interviewees expressed. In addition to this emotional sentiment, however, is the potential legal obligation to consult with Aboriginal peoples.

To offer a final example of how bituminous sands companies collaborate with Indigenous peoples, I will explain the consultation process from the perspective of my bituminous sands associated interviewees. Bituminous sands companies need Indigenous approval to maintain a social license to operate, but they also need it to maintain a political license to operate. The First Nations consultation process in Alberta is relatively new, the first policy and guidelines being adopted in 2005. The second and most up to date set of policies and guidelines were adopted very recently.

The Government of Alberta’s Policy on Consultation with First Nations on Land and Natural Resource Management, 2013, was adopted on August 16, 2013. The accompanying set of guidelines, entitled Alberta’s First Nation Consultation Guidelines on Land and Natural Resource Management, was adopted while I was in Canada, on July 28, 2014. The purpose of the former document, the Policy, was to create a way for

³ Today, the Alberta Provincial Government interacts with Aboriginal governments via the Protocol Agreement on Government-to-Government Relations of 2008 (Government of Alberta, “Aboriginal People”).

Alberta “to reconcile First Nations’ constitutionally protected rights with other societal impacts with a view to substantially address adverse impacts on Treaty rights and traditional uses through meaningful consultation process.” The constitutionally protected rights being referred to are the Treaty rights to hunt, fish, and trap for food, protected by section 35 of the Constitution Act, 1982. The Policy also includes an acknowledgment of traditional use land. This is land that can include burial grounds and ceremonial sites but is not section 35 Treaty land. It is nevertheless important to the culture and practices of First Nations. The latter document, the Guidelines, is intended to “clarify the expectations of all parties involved in the consultation process.” In the Guidelines, a full description of what is required of Industry, or the project “Proponent,” is articulated, which makes for an interesting comparison to the main points made by my interviewees during our consultations conversations.

These Guidelines offer all requirements, recommendations, and procedural norms for all entities involved in the consultation process, the depth of which is decided upon using an impact assessment matrix. This is the tool that First Nations, proponents, and governmental offices utilize when carrying out this sensitive process. From the perspective of my industry interviewees, however, the process is not as rigid as it is friendly and fun.

My first exposure to the consultation process occurred near Lac La Biche within my first week in Alberta. I was going to meet an Aboriginal interviewee at an event he thought would be beneficial to my project: a golf tournament. I arrived at this band’s annual golf tournament to find a room filled with just about every person I wanted to talk to in all of Alberta: various tribal council members, the Chief of the band, Industry

Relations Director for the band, and Aboriginal Relations representatives from more than a dozen oil companies. Here, in a single room, was everyone I had been trying—and failing—to get in contact with for the last four months, enjoying beers and steaks together after a long day of golf.

This may sound lavish, but interactions like these are part of the consultation process. Although there is an extensive legal, written process that Aboriginals, the Government of Alberta, and industry are committed to, more personal interactions like these are where many of the most important decisions are made. At this and other social events, I overheard oil company representatives blurting out work related tid-bits in the passing opportunities they had to interact with a band leader. There seemed to be a contradictory understanding that events like these were not work related, yet the main topic of conversation was often the bituminous sands. In this way, the consultation process is a social one. It is a time for representatives from the Aboriginal and industrial worlds to come together and get to know each other and it is a way for the friendly consultation process to painlessly flow by without any long and messy legal battles (Cryderman, 2014). From the perspective of my industry interviewees and the Aboriginal relations representatives I met at social events like the golf tournament, Aboriginals are friends and neighbors of the bituminous sands industry, which is committed to the consultation process. “Do oil companies ever do the bare minimum in the consultation process?” I asked one interviewee. She responded quickly with, “It’s much more than that, they know that [Aboriginals] are their neighbors.”

“So why all the contention?” I would ask my interviewees. The first week of my trip consisted of mainly industry interviews, and I was beginning to forget that not

everyone in Alberta was satisfied with the relations that exist between Indigenous peoples and industry. I wondered, if everything was as cheery as my industry interviewees were describing then why had I read so many stories about the horrible Aboriginal-industry relations in Alberta? “I think they do it because they can!” said one interviewee, referring to the media’s tendency to focus on the contentious relationships over positive ones.

“Conversations about open communication and mutual benefit are *real*...Not all the good stories get published,” responded another interviewee, implying that some of the contentious industry-Aboriginal relationships are more sensationalized media than fact.

Perhaps some of the contention comes from insufficient government intervention. Contrary to the type of story that I read many times before embarking on my trip that read, “The tar sands industry and Canadian Government are working together,” several of my industry interviewees expressed a dissatisfaction with government involvement (Climate Action Network, 2012). “[The Canadian Government] never caught up after doubting the industry,” said one of my industry interviewees. Interviewees like this one thought that the government was too slow and uninvolved to be effective in proper leadership regarding the bituminous sands industry. With the Canadian government aloof, industry would rather work directly with Indigenous populations to consult, creating more personal and meaningful relationships without the burden of government. Despite my industry interviewees claim that the industry-Indigenous relationships are healthier than the industry-government relationships, the media tells a different story.

In my research leading up to my field study, I had never encountered a story in the media or in academia that portrayed the consultation process as leisurely as a day of golf. Now, having circumnavigated the U.S. American media’s stories and the dearth of

academic literature on the topic, I can offer a more accurate portrayal of Aboriginal-industry relations in Canada, which, as my industry interviewees insisted, is more positive than the hateful relations often found in the news (UeChi, J., 2013; Kunzig, Robert, 2013; “B.C. First Nation takes Trans Mountain expansion to court,” 2013).

One common and frequently cited way that industry is improving its relationships with Aboriginal groups is through social events, several of which I was lucky enough to attend during my trip. Funding social events, such as cultural holiday celebrations, is a way for industry to compensate Aboriginal groups without giving cash, a frowned upon practice. “Handing out cash to first nations is the worst thing you can do,” said one interviewee, citing the problems that occur when giving out cash royalties. “Some [companies] have done it when getting close to project application deadlines and the other companies get down on them because it causes social problems. So they try to make [compensation] community based.” I attended two of this sort of event. Industry representatives would make appearances at the events, which consisted of live music, dancing, games for children, and food. Of course, oil company logos were plastered on everything. The amount these companies spend on occasions like this became apparent when I noticed the winners of the talent show, canoe race, and jig competition each won \$1500. The winner of the mud bog, a timed monster-truck race through a muddy trench, won \$5000.

The goal of the consultation process is to protect the constitutional traditional rights of Indigenous peoples in Canada. From the perspective of my industry interviewees, this is done by compensating Indigenous groups through the funding of social events and by giving cash as I have described here. It seems that in general,

industry's interactions with Indigenous peoples are centered around the idea of monetary compensation in one form or another. This is an interesting approach for industry to take as none of my industry interviewees knew how much the culture was worth. No industry interviewee could put a number, or even a formula for determination, on the value of the culture they were involved with compensating. How can loss of culture be properly compensated for monetarily if the value is unknown by the compensators? This topic will be discussed further in the Analysis section of this document, as it has major implications on the conclusions of my study.

In this section, I have outlined my many conversations with individuals associated with the bituminous sands industry from my field trip, attempting to highlight the ideas that my interviewees seemed to think were most important, the ideas they tended to naturally gravitate towards in conversation. In summary, the two main topics that industry interviewees were inclined to talk about in our conversations were environmental performance and economic benefits of the industry. Although the social implications of this rapidly growing industry are becoming more important to stakeholders, the main fight for bituminous sands companies is with environmentalists. As such, industry has strategically organized itself to be addressing environmental concerns, which critics of the industry most often cite. Economic benefits of the industry were continuously brought up because they are by far the most obvious positive benefit created by the industry. It is interesting that in spite of all the loud and contentious relationships portrayed in the media between the bituminous sands industry and Indigenous peoples, this was not one of the primary concerns of the industry.

As publicly traded corporations, most bituminous sands companies have a responsibility to their shareholders, and ultimately, the main goal is to make profit. Technically, profit is the sole reason for any action taken by the publically traded bituminous sands industry, including environmental or social progress. In the next section, I will discuss the content of my interviews with Indigenous interviewees.

Conversations with Indigenous Peoples

My conversations with my Indigenous interviewees were as diverse as the Indigenous cultures I encountered on my trip. As with my bituminous sands interviewees, each conversation presented new challenges, perspectives, and evidence as to why my pre-trip conception of what was happening in Alberta was dead wrong. I heard perspectives ranging from “Fuck all to industry,” to “[The bituminous sands industry] is a survival tool.” Instead of the simple, single dimensional conception of the industry-versus-Indigenous environment I had before my trip, I found through these conversations a wide spectrum of thoughts, knowledge, and experiences regarding the bituminous sands. Also similar to my industry interviewees, my Indigenous interviewees tended to be highly informed on the issues, knowing all the necessary details and offering a well articulated perspective on the industry from, oftentimes literally, right next door. Unlike the industry interviewees, this expertise was not from higher education: few of my Indigenous interviewees had a college degree. Instead, they drew relevant conclusions based on personal experience and traditional knowledge.

Economic

The economic benefits of the bituminous sands industry to the Aboriginal bands I interacted with in Alberta were staggering. Upon arriving to any of the several reserves I visited in my trip, I was shocked by the amount and type of wealth I saw. Unexpectedly,

economics was an emblematic aspect of the relationships between industry and Indigenous peoples, where my previous research had led me to believe that the relations were predominantly environmentally and socially focused.

During my first visit to an Aboriginal reserve, I attended an open-invitation cultural event, complete with food, music, dancing, and presentations. Some of the first words I heard anyone say were those of the MC, who excitedly stated, “Due to new oil sands contracts, every band member will be receiving an extra \$1,000, for it is you that needs to be compensated for the effects of the oil sands development.” The crowd remained surprisingly calm. Over the next several weeks, I visited more Aboriginal reserves, and was always taken aback by how different they were than the dismal and primitive image of Indigenous reserves shown by the media (Commisso, 2011; Smith, 2013). In fact, I found the reserves I visited quite comfortable, even lavish at times. Among the amenities were brand new sports facilities, community centers, new, big houses that “would be million dollar houses if they were in Fort McMurray,” as one interviewee described. Many people on reserve, similarly to the rest of Alberta, drove new pickup trucks and owned multiple four-wheelers. Once, at a cultural event, I decided I would offer a hand with cooking breakfast. After a full morning of flipping pancakes, the organizer tipped me \$500, reminding me that it was insulting to refuse her payment. “Nothing’s free,” added my generous employer.

Band members are well aware of where this wealth comes from: bituminous sands development. “We didn’t have what we do now,” said one interviewee, citing the fact that before the bituminous sands, as recent as 1987, some areas near Fort McMurray were not accessible by road. “Ten years ago,” said another, “people were all about jobs,

houses, money, etcetera. Now they are in better shape.” But money from bituminous sands development does not simply mean receiving checks from industry or the government. In fact, the most wealthy individuals I met on reserve achieved their success through starting oil field contracting companies. As I drove through a reserve, I would see large parking lots filled with tractors, semi trucks, and front-end loaders, the property the successful entrepreneurs who have made a living in the bituminous sands industry. I interviewed the owner and founder of one of these companies and learned that it had grown in the past decade to employ over 200 people, many of whom were friends and family of the owner. Aboriginal contractors, rather than direct bituminous sands company employment or land royalty checks, was the most common way I witnessed Indigenous groups benefitting economically from the bituminous sands industry.

Since 2000, more than \$8 billion has been earned by Aboriginal companies through relationships with the bituminous sands industry. In 2012 alone, Aboriginal contractors in Wood Buffalo and Lac La Biche earned more than \$1.8 billion (“The facts on oil sands,” 2014). This high revenue is likely in part due to industry’s obligation to prefer to hire Aboriginal contractors and employees, but that is not to say that Aboriginal contractors are not fully capable companies in their own right. As one of my industry interviewees pointed out, however, the lack of formal education and business skills of these successful Aboriginal contractors can cause social problems.

During my time on various reserves, multiple people pointed out that despite the monetary wealth accumulated through the bituminous sands industry, there are still economic and social issues. A stark contrast exists between the gleaming new cars and unpaved roads. Even with million dollar homes, much of a reserve might still lack

infrastructure such as plumbing, electricity, gas, or health facilities. Some interviewees welcomed the benefits of more money, yet condemned the externalities of increased wealth. “You have lots of negativity in [a wealthy reserve]. There’s crack cocaine all over the place, there’s lots of people dying, but yet they’re rich. They drive brand new trucks, they have big homes... But there’s a negative side of things,” said one Aboriginal interviewee. It seems that the inherently unsustainable boom of the industry may have caused unsustainable spending practices. Some Indigenous individuals seemed dissatisfied with the assumption that Aboriginal society is somehow solved now that there is more money. “We didn’t have to lock our doors when I was growing up,” said one of my interviewees, reminiscently.

While some of my Indigenous interviewees were critical of the negative effects of increased wealth, others renounced the wealth altogether. One such person described Indigenous peoples affected by the bituminous sands industry as “economic hostages,” constantly experiencing pressure to accept monetary benefits from the industry and accepting the white, Western ideal of materialism and wealth equaling success. Furthermore, there are better ways to earn money than through the bituminous sands industry, my interviewee said. “There’s an economy to be had on the sustainable side...If we can educate people about this sort of thing, there would be a lot of people to make the switch,” said the interviewee, who claimed that money is not necessary for the success of Aboriginals, but if someone is going to seek money they should do so in a more environmentally sustainable way.

Perspectives such as these seemed to coincide with a view that development is already big enough, and thus the wealth it provides is already big enough. Perhaps this

perspective is rooted in a distaste for the quick pace of conformity to bituminous sands culture. “We don’t need any more [development]. Just the way it is right now is enough to keep everyone going in the economy,” said one interviewee, an elder, to whom the bituminous sands economy likely seemed relatively new. “We need energy but not *this* much energy,” said a different interviewee, citing the large size of people’s houses as evidence for the contemporary demand for oil being a frivolous extravagance rather than a necessity.

The economic effects of the bituminous sands industry on the relationships between Indigenous peoples and the industry were as important to my Indigenous interviewees as to my industry interviewees. Contrary to my expectations, perhaps based on the skewed information existing in the media, many of the Aboriginals surrounding the bituminous sands are flourishing in the new economy. All Indigenous interviewees, however, expressed insecurity regarding whether the economic benefits would ultimately be worth the risks. They also mainly expressed an optimism to being able to make the best of what was generally seen by my interviewees as a less than ideal situation. “We all know there’s an impact...but the nation also wants to maximize our benefits, because if we fight and be olden way, we’re not going to get anywhere... The world economy has changed and we need to be a part of that change to make sure future generations have something to live for. And that’s oil, we have to set that standard. And at the same time we have to make sure to maintain our culture, language...” said one Aboriginal interviewee.

Environmental

For about four days during my trip I decided to go to perhaps the most contentious place related to the bituminous sands. In the spirit of my desire to go to the

places where the answers were unclear, I wanted to go to the place where there exists blatant, even belligerent discrepancies between the claims of those who support the bituminous sands, and those who despise them.

Fort Chipewyan, established in 1788, is a small hamlet of about 1,200 residents on the southwestern bank of Lake Athabasca. Here, inside the gigantic, 20 mile wide Peace-Athabasca Delta, exists an incredible landscape of shallow waters and tall grasses, which supported a robust trapping, fishing, and trading economy for 200 years. This fly-in-fly-out community is cut off from the rest of Canada during the summers, when the ice melts and the roads, North to Fort Smith and South to Fort McMurray, melt with it.

I was one of only five passengers flying from Fort McMurray to Fort Chipewyan this sunny afternoon, but we almost filled up the tiny propeller plane, piloted by the same man who loaded my bags onto the aircraft. As we ascended I looked eagerly out the window, hoping to see down upon any of the large open pit mines that are clustered just North of Fort McMurray and about 200 miles south of Fort Chipewyan. About 15 minutes into our 40 minute flight, I began to see the effects on the landscape. A network of roads converged on a large, clear-cut area in the middle of the dense forest. Soon, the clear-cut areas multiplied and grew into each other and formed even bigger swaths of slashed trees. Then I saw a mine. From a cruising altitude of around 14,000 feet above ground, my entire field of view out of my small airplane window was swallowed by the massive, black, dank pit. We were too high to see the Caterpillar 797 trucks, the largest trucks in the world, crawling across the mine surface, or the thousands of employees radioing to one another, or the at least 200,000 barrels of bitumen that would be produced

from this mine on this day, but from 14,000 feet, I finally understood how it was possible to see the bituminous sands mines from space (Handwerk, 2011).

In my short time in Fort Chipewyan I experienced some of the greatest hospitality of my life. A passerby who disapproved of my rudimentary camp in the middle of town insisted I stay in his unused camper, a local resident lent me a fishing pole, and a government employee allowed me to use his motorized scooter to get around town. In the midst of all the generosity I almost forgot that this place is a subject of controversy.

Fort Chipewyan has little to do structurally with the bituminous sands. Although there are several people in town who fly south to work in the oil fields, there are no oil company offices here, and the closest operations are too far away for anyone to see or hear. In fact, in my time in Fort Chipewyan I interviewed several Aboriginal individuals but no current bituminous sands employees, because I did not find any. It is this lack of interaction with the industry that perhaps makes Fort Chipewyan the place it is today. “We don’t have access to all the benefits of the industry because we don’t have a road,” said one interviewee. What the town does have is a major water source that flows north from the thick of the industry. While on the Suncor Energy public bus tour, we crossed the river once to get to the mine, and again to arrive at the upgrader. The Athabasca River is closer to industry than any person without an employment badge is allowed. Downriver, residents of Fort Chipewyan say the Athabasca is bringing toxins from the industry north and killing people.

“I don’t even fish anymore,” claimed one interviewee, noting the many sightings of deformed fish in Lake Athabasca as evidence for the contamination of the water (Canadian Press, 2012). “We get letters in the mail saying ‘Don’t eat the eggs, only eat so

much fish a week.’... I don’t eat the fish out of this lake at all anymore,” said another interviewee. Sure enough, while in the Regional Municipality office I picked up a copy of *Chip Chat*, the local monthly news letter, and found an advisory from Alberta’s Chief Medical Officer limiting the amount of gull and tern eggs to be consumed per week (“Chip Chat,” 2014). But the Provincial Government’s warnings, residents say, are not keeping people from getting cancer.

“In the early seventies is when we started seeing oil sheens on the river...that’s when we stopped drinking the water,” said one interviewee, who was one of the many Fort Chipewyan residents who remembers growing up drinking directly from the lake, without filtration. “We never used to have sickness like this before. As soon as industry started, people started getting sick and dying,” said one interviewee. I was in Fort Chipewyan on the day of a funeral of a community member who had recently died of cancer. “We just buried a friend yesterday from cancer,” said one interviewee, “People know what the cause is but because they don’t have fancy letters behind their name [no one believes them].” Several interviewees made comments like this, in which they referenced traditional knowledge of the environmental and health effects of industry.

“The elders are saying the birds are diverting their path,” said one interviewee, who went on to recall how few days during the summer she saw a flock of ducks migrating, a sight usually seen for weeks. On my trip, I heard an elder describe an ancient prediction, offering an explanation for sickness in Fort Chipewyan. As the story goes, elders long ago predicted that an animal with many legs would come from the south and kill many people. The animal with many legs, of course, is cancer, which travels from the bituminous sands along the Athabasca River to Fort Chipewyan.

Studies have failed to cleanly conclude that the bituminous sands industry is causing cancer in Fort Chipewyan, or even that Fort Chipewyan has higher rates of cancer than the rest of Canada. My industry interviewees cited the research that claimed Fort Chipewyan had perfectly normal rates of cancer. In paraphrased words of my industry interviewees, if there are higher levels of cancer in Fort Chipewyan, it probably has to do with the fact that everyone there smokes and drinks, there is high radon gas exposure from the surrounding uranium mines, and the number of elderly residents has grown over the last 15 years. Another argument I heard from bituminous sands interviewees multiple times was that if there is bitumen contamination in Lake Athabasca, it is there naturally, as anyone can go to the banks of the river near Fort McMurray and see bitumen seeping into the water, the same way it has for thousands of years. The Walmart I was camping at in Fort McMurray was right on the banks of the Athabasca River, so I went to see for myself. Sure enough, the black sandy banks of the river smelled like petroleum, and a shiny blue oil sheen was visible floating on the surface.

On the other hand, residents of Fort Chipewyan are suspicious of government or industry endorsed research: “Government scientists, nobody trusts them. ‘Cause they just say what the government tells them to say. Now, [Aboriginal bands] are doing their own research,” said one interviewee, referring to the fact that band offices have taken it upon themselves to do their own studies on water quality, and with success. In general, studies released by government or industry agree that bituminous sands have nothing to do with increased cancer rates in Fort Chipewyan, while independent or university studies suggest further research before making such confident conclusions (McLachlan, 2014). Despite

what any research says, some members of the community speak from personal experience. One interviewee, an environmental contractor, claimed to witness first hand a tailings pond seeping into the river when doing an evaluation of an oil company's site. "I've seen seepage going into the river. It's kind of a sludge. Dark, dark green. You see it trickling out. [The oil company told] us, 'don't say anything, we're gonna' get it fixed.'"

Fort Chipewyan plays an important role in the process of examining the perceptions of the bituminous sands industry with regard to the environment. Unlike in the area surrounding Fort McMurray, where communities can be more easily compensated for environmental damages, Fort Chipewyan is located far enough from the industry to not receive compensation, but close enough to feel environmental effects. This raises interesting questions about the degree to which compensation plays into perception. It seems to be a back and forth battle of uncertainty between those who believe Fort Chipewyan is being damaged and those who do not. Amidst this uncertainty is at least one thing for sure: many local residents in Fort Chipewyan truly believe the bituminous sands industry is directly responsible for the death of numerous people, and they are not willing to accept industry's counterargument. "Our war is going to be won in the court room," said one interviewee, who also mentioned that in Fort Chipewyan it is common to hear, "I wish this river flowed south."

Before I flew back down to Fort McMurray, I had the opportunity to go for a boat ride with a local who had grown up fishing and trapping in Fort Chipewyan, and who was involved with the commercial fishery there. As we made our way around the delta, the local pointed out the ways the land had changed over the years. Even as an industry employee for many years, he described Lake Athabasca as "the last tailings pond on the

oil sands,” where all the waste from industry, both literal and figurative, flows in to the large settling pond, conveniently located downstream from industry, far enough away that the 1,200 small voices of Fort Chipewyan would not be heard. This interviewee, along with several others I met in town, were convinced that the bituminous sands industry was the cause behind the recent closure of commercial fishing in Alberta (Wittmeier, 2014). Without the commercial anglers in the water pulling out fish, they claimed, no one would be writing stories about the deformed fish industry is causing.

Fort Chipewyan is not the only place where the environmental effect of industry are felt by Indigenous populations: “Industry says, ‘those smells shouldn’t happen every day,’ but the reality is they do,” said one Aboriginal band office employee near Fort McMurray. In the Athabasca and Cold Lake regions of Alberta, some traditional territories and reserves are within visible range of large bituminous sands operations, and some worry about the health effects of living in proximity to the worlds largest industrial project. This interviewee expressed that people on his reserve are worried by the studies that claim there are people dying from the pollution of the industry, but ultimately there is no information on the long term, chronic effects. “Alberta and [the Aboriginal band] were working together to do a joint study but it was stalled,” said the interviewee. Health effects on individuals was one of the most cited environmental concerns of my Indigenous interviewees, but the most prevalent concern was the effect on the peoples’ connection to the land.

One of the phrases I heard most from my Indigenous interviewees was “living in the bush,” meaning living simply, traditionally, and with the land. I heard a general understanding that living in the bush was no longer realistic or possible. “You can’t make

a living in the bush anymore. It's a shame," said one elder interviewee, who remembered not long ago a person could survive off the land for sustenance and money. "We need the jobs [that industry provides], sure, everybody needs a job... There's no trapping anymore... because of industry. You can't survive off the bush anymore," said the interviewee, pointing out that the bituminous industry has offered one type of job by taking away another, more traditional career choice: trapping.

"The money my family raised from trapping 'rats from March to May was enough for the whole year. Now, I'll bet you there isn't a muskrat in the [Peace-Athabasca] Delta," said one interviewee, remembering the days when the land was the center of the economy. "If I was to try to live out there like my parents did I would not be able to be sustainable because the lack of water, animals, and that saddens me." Not only was the land traditionally the center of the economy, it was the center of culture.

One interviewee described a scenario, expressing the typical interaction between an Indigenous group and industry when consulting about development near a cultural site. He said that oil companies often do not understand that a cultural site such as place where medicine grows or a burial site is too sensitive for any development, even indirect. Typically, a company will want to build around the sensitive area or relocate it, he explained, but this defeats the purpose because the power lines and roads and workers that a nearby development will bring will disrupt the traditional experience of the land. This traditional experience, he continued, is what defines his people as Aboriginals, and therefore should not be interfered with whatsoever. For this reason some band leaders have taken a more radical approach to consultation. On my trip, I heard of one band that blockaded an access road in protest of industry. While on reserve, I overheard two leaders

talking about their desire to build a physical barrier around their land, forbidding any bituminous sands development from ever taking place and protecting the cultural significance of the land. Here, at the intersection of the environment and culture, lay the most challenging questions regarding the development of the bituminous sands.

Social

It seems contradictory that Aboriginals have fought to be compensated for their rights to their traditional practices through consultation, yet they would refuse to use those rights and simply block out industry and the benefits it brings. This suggests that there are certain aspects of the traditional practices that are impossible to quantify into dollars. When asking my Indigenous interviewees about these seemingly invaluable aspects I received striking responses. “How do you weigh the cultural impact?” I would ask. “You can’t,” responded one interviewee. “There’s no measurement... We’ll never get [the culture we have lost] back. Never. There’s no amount of money that could offset that impact.”

During my time in the United States, I met with a Native American government employee whose job consisted of bridging the gap between the hydraulic fracturing industry and Native Americans in the area. On a daily basis, my interviewee consulted with Native Americans and advised them on deals with industry with regard to environmental and cultural impact. When asking this interviewee about how the value of culture is determined when deciphering a potentially culture-damaging agreement with industry, he responded similarly: “Sometimes I wonder if I’m doing the right thing.” Conversations like this led me to believe that perhaps there is no cost to the Indigenous cultures of my interviewees. This is not to say that the culture is worthless, just that their

worth cannot be measured in Western, linear, technical terms. Another interviewee expressed dissatisfaction with industry's attempts to buy culture through compensation, and then claim that culture has not been damaged because tokens of it still remain: "Industry is willing to accept that as long as there is an elder in the woods with a young person and there's a tipi, that's culture."

Comments like this sound abrasive, but really they illuminate something Indigenous peoples and industry share in common. None of my interviewees, whether an Indigenous person or industry representative, could put a numerical value on the culture that is being compensated for numerically. Although dollars are acting as the metric of culture's value, no one was confident that the dollar amount being prescribed reflects the value of the "good," or even that the culture can be equated to any number value at all. As one of my Aboriginal interviewees pointed out, perhaps the uncertainty of cultural value is the only quality the two entities have in common.

An Aboriginal band leader near the center of the bituminous sands industry called the industry a "manifestation of the purely technical," compared to the purely nontechnical, traditional, exemplified by the Indigenous way of life. This statement reveals a deep, fundamental difference in the conceptual frameworks of the industry and Indigenous peoples. I do not know what the essence of the nontechnical, traditional way is, and I have a feeling that one has to actually be an Indigenous person to fully understand this, but a story I heard from two Aboriginal men on my trip attempts to put it into contemporary terms. As the story goes, "back in the day," Aboriginals were so pure and connected with nature that they could communicate with plants and animals in ways we cannot imagine. They had developed such deep connections with the land, that when a

man needed wood for a fire, he would not walk around and fetch it himself but would instead summon it from the trees and it would collect before him. He would use an ancient method of communicating his need for fire with the land based on an understanding of mutual benefit by all the life in the environment. However beautiful this story may be, my interviewees were well aware that this way is no longer a reality. As Indigenous cultures have become assimilated to contemporary Western society, they have lost the deep and pure connection to the land of their ancestors.

The topic of assimilation came up in discussion with my Indigenous interviewees far less than I had expected. I think this is due to an optimistic acceptance of the current situation expressed in my interviewees' desires to "make the best" of it. Some interviewees expressed annoyance with people who refused to accept the new reality: "The elders give us a hard time [because] they're always thinking way back, and we have to tell them we're not like that anymore." My interviewees expressed a simultaneous understanding of the negative implications of assimilation and an acceptance of its reality. "[We] have been getting assimilated for the last 1000 years. Since Columbus came over. Since the first white man went into what is now North America. Still today we're getting assimilated," said one interviewee, adding that even the lights around us during our interview were assimilating from past cultures. My interviewee later said, "Oil sands is faster, stronger assimilation...Biggest assimilation in the last one hundred fifty years." Statements like this exemplified the common topic of conversation with my Indigenous interviewees of the ways the bituminous sands industry has affected their daily lives.

When talking to one interviewee about the effect of the industry on the landscape he grew up on, he chuckled and said, “You may as well hunt in Edmonton! [The traditional] way is long gone.” This Aboriginal interviewee worked for a bituminous sands company for more than 30 years, holding many different positions. I asked him if he was ever bothered during those 30 years by all the controversy surrounding the industry’s relations with his traditional culture. He said that he was too busy earning money to raise a family to worry about the effects of the industry. To this interviewee, and several others who expressed similar sentiments, the industry was a force to be reconciled, not fought, if he and his family were going to survive. “We need [industry]...so that people can go to work...so people can feed their kids.” Despite the normative connotation of sustainability to environmentalism, this interviewee’s idea of sustaining his family, livelihood, and culture involved working for this environmentally damaging industry. Many of my interviewees who lived and worked near the industry shared this conception; however, it was not the only way I heard of to sustain a culture and family.

“As an Aboriginal person it is my inherent duty to make sure everything I have my grandson will have, and my great grandson,” said one Aboriginal interviewee, who thought that “the oil sands belong in the ground.” This interviewee, and other who expressed similar sentiments, saw the industry as an obstruction to sustainability of culture and life, despite the immediate monetary wealth. “Industry has nothing to offer,” she said. This interviewee cited global warming and other negative environmental impacts as the reasons that “oil is death.” “We’re setting ourselves up for failure,” said another interviewee, referencing the short lifetime of the industry. Oil companies claim

that there is enough oil in the form of bituminous sands in Alberta to last over 100 years, but even a century is small relative to the history of Indigenous peoples in North America, which dates back millennia. Interviewees such as these agreed that living in compliance with long term environmental sustainability was the best way to preserve culture and protect future generations, despite the fact that this meant forsaking wealth.

These two worldviews, two conceptions of sustainability, highlighted important differences between my interviewees. The long-term sustainability thinkers might call the immediate sustainability thinkers “sell-outs,” criticizing their acceptance of the wealth created by the destruction of the environment. Similarly, the immediate sustainability thinkers might say the long-term sustainability thinkers are living “in the stone ages.” I was not able to decipher any patterns of how these conceptions came to be. Both types of people seem to exist in all places relative to the industry, both ideologies living near and integrated to industry as well as far and uninvolved. It seems that rather than these conceptions being based on a rational, technical thought process, informed by a individual’s practical interactions with industry, they are based on a more fundamental, personal value, untouched by the costs and benefits of the proceedings of daily interactions. It seems that how much money and individual makes from industry or whether a family member believes he or she has contracted cancer as a result of industry has less to do with how the individual perceives industry than a personal characteristic of how the individual thinks about the world. The deep, personal, and fundamental characteristic of how people perceive industry has large implications on my question of: how do Indigenous peoples perceive the bituminous sands industry?

As I have shown here, there are important distinctions among my interviewees' fundamental understandings and perceptions of the bituminous sands industry. There are also some commonalities across these groups. One of which is the distrust of government. Before leaving on my trip, I expected to find that the relationship between industry and Indigenous peoples was broken, uncommunicative, and filled with resentment. Although not all my interviewees loved or even liked the industry, in general my interviewees described the industry-Indigenous relationship to be functional, if not beneficial. The government-Indigenous relationship did not share this positive sentiment, and also plays an important role in the industry. My Indigenous interviewees expressed a deep, sometimes violent abhorrence for the government. In conversations about government I heard my Indigenous interviewees claim they were ready to go to war with the government, and that they would not "be the first to die." This extreme example may be an outlier, but a general distaste and distrust was common.

"The government has no idea what's going on here," said one interviewee, echoing the claim of an industry interviewee that all dealings remain between industry and Aboriginals. Some of my interviewees expressed a desire for more support from the government, breaking the pattern of dealing exclusively with industry. "[There exists] still those old red neck oil companies who just come in, West Texas style, and think they don't have to consult. Some people do the bare minimum to get their permit. They don't care about the relationship... Government needs to make the process more strict so that people don't just come in and do the bare minimum." I also heard a desire for government to show more desire to be more of a nonpartisan entity, since a general understanding is that "government and industry are one." "Government is so pro-

development they don't care about an Indian, they don't care about the people... the world needs oil...they don't care about the 600 Indians who live there.” The fact that both industry and Indigenous peoples showed dissatisfaction with the involvement of government in the industry-Indigenous relationship—a relationship overseen by government—has large implications on creating a satisfactory plan for the future of the industry.

In this section I have compiled the topics of discussion most important to my industry and Indigenous interviewees. This collection based on the assumption that the topics they were naturally inclined to discuss when I would ask general questions about the relations that exist between Indigenous peoples and industry are truly the most important topics to them. My ability to relay this information correctly, and the assumption that I did not coerce my interviewees with leading questions are two limitations of this section. Other limitations include my inability to include all topics discussed, and my ability to recall our conversations without my personal bias. This section was composed using my notes on my interviews, personal narrative from my field study trip, and additional clarifying research.

With these assumptions and limitations in mind, I will now analyze my experience and research in an attempt to draw conclusions about the bituminous sands industry-Indigenous relations, the perceptions of these relations, and how these relations can inform a path forward for stakeholders.

Analysis

In this section I will analyze the results of my study and my methods for collecting data. When analyzing the results of my field study, I attempt to illuminate

useful patterns between my primary research with my secondary research. When analyzing my methods, I will evaluate the success of the methods I employed for collecting data with regard to accuracy of data and feedback from my research subjects.

Results Analysis

Based on the topics my industry interviewees were compelled to discuss in our conversations, Indigenous relations are very important to the industry, but they are not the most important. When thinking of the two biggest concerns of my industry interviewees, environmental performance and economic benefit, I am reminded of the capitalistic nature of these companies. Most bituminous sands companies are publicly traded, meaning they have a responsibility to their shareholders. As one bituminous sands employee pointed out, “The M.O. of a company is to turn a profit.” This seemingly obvious statement carries huge implications. That is to say, that an oil company may be making huge strides toward environmental responsibility and appropriate Indigenous relations, but if these goals ever stood in the way of profits, they would be marginalized. Oil companies are not environmental groups, nor social justice nonprofits, they are oil companies. The only reason they have the inclination and ability to take action on improving the environment and society is because they are profiting billions of dollars by taking actions that degrade the environment and society. In this same way, no bituminous sands company would be spending money on Aboriginal social events or compensation if their actions were not damaging certain aspects of Aboriginal culture.

The two main topics of concern from the perspective of my industry interviewees were environmental performance and economic benefit of the industry. In my study I have assumed that the topics of conversation my interviewees seemed naturally inclined to talk about were the most important topics to them, so it also makes sense to discuss

how my industry interviewees talked about these two crucial topics. Looking back through my Discussion section, it is interesting how many more numbers are in the Conversations with Bituminous Sands Associates subsection than the Conversations with Indigenous Peoples subsection. For example, the symbol “\$” was used 12 times in the Bituminous Sands Associates subsection versus just four times in the Indigenous Peoples section. The symbol “%” was used 11 times in the Bituminous Sands Associates subsection versus zero times in the Indigenous Peoples subsection. Since these subsections are reflections of my conversations with research subjects, and our conversations consisted of me listening to my research subjects, I take example such as these to be a reflection of the way my research subjects talk and think about the bituminous sands industry-Indigenous environment. The fact that there are more dollar amounts and percentages in the industry associates subsection is emblematic of my conversations with these interviewees.

It makes sense that capitalistic companies, which are concerned with profits, talk about their industry in terms of numbers. As my Indigenous interviewee claimed, the bituminous sands industry is a “manifestation of the purely technical,” relying on quantifiable data to make rational considerations. When talking about environmental performance, my industry interviewees would talk about things like acres of land reclaimed, tons of CO₂ reduced, and gallons of water saved. When talking about economic benefits of the industry, my industry interviewees would talk about things such as dollars earned, jobs created, and economic growth achieved. Based on the quantitative, rational way that these interviewees talk about the environment, I think it is possible to

conclude that this is the way they think and feel about the industry-Indigenous environment.

The two most prevalent topics of conversation with my Indigenous interviewees were consultation and cultural preservation. For reasons I have explained, it is useful to examine the ways how these individuals talk about the issues most important to them. Looking back to the Conversations with Indigenous Peoples subsection, I see far less numbers and statistics and more stories and perspectives. Similar to the industry being a manifestation of the purely technical, Indigenous culture was described to me as a manifestation of the purely nontechnical and traditional. As such, the important issues are not described in terms of numbers but emotions, stories, and traditions.

When my Indigenous interviewees talked about consultation, they talked about things such as monetary compensation, royalties collected, and partnerships created. These are all quantitative values, contrary to the nontechnical, qualitative qualities of Indigenous culture. This may either be an indication that my Indigenous interviewee was wrong to say that Indigenous culture is purely nontechnical, or it could be a result of Indigenous culture assuming some of the technical aspects of the industry through the relationship of the consultation process. When my Indigenous interviewees talked about cultural preservation, however, they did not use such technical or quantitative terms.

As I pointed out in my Discussion section, my Indigenous interviewees seemed to develop their opinions of the industry more from a fundamental, personal trait than a rational consideration of the quantitative costs and benefits of industry. One of my Indigenous interviewees pointed out there are basically two ways the bituminous sands industry can benefit Indigenous people, by giving them a job and allowing them to

financially benefit from industry (development), or protect the environment in which they live (preservation). Which one of these benefits an individual chooses to align with seems to indicate which conception of sustainability, and thus the conception of the best method of cultural preservation, the individual holds. If the individual chooses development, he or she aligns with the immediate conception of sustainability epitomized by one of my Indigenous interviewee's comments: "[We] need that [development]...so people can feed their kids." If the individual chooses the environmental preservation benefit, he or she aligns with the long-term conception of sustainability, epitomized by another Indigenous interviewee's comment: "[It] is my inherent duty to make sure everything I have my grandson will have. And my great grandson." These conceptions of sustainability are personal characteristics, and I was not able to decipher any pattern within my Indigenous interviewees that would suggest they are influenced by the individual's environment. That is, an interviewee's conception of sustainability did not appear to be influenced by the amount of costs or benefits experienced from industry. Therefore, cultural preservation is a subjective, qualitative, emotional trait of the individual, not an outcome achievable through compensation. This conclusion makes sense given the lack of insight on the value of culture my interviewee base had.

None of my Indigenous interviewees nor industry interviewees knew the value of the culture of the Indigenous peoples affected by the industry. The only interviewee that offered a conclusive answer rather than an inconclusive "I don't know" said, "There's no measurement." This is not to say that the culture is valueless, nor is it infinitely valuable. It is to say that the culture's value cannot be measured in the Western, contemporary, quantitative form of dollars. This realization takes a fundamental shift in conceptual

framework, and is difficult to understand as it was difficult for me to understand what the two Aboriginal men were talking about when describing the essence of the traditional Indigenous way. It seems to me that culture having an indefinable value is not inherently problematic; these cultures existed for thousands of years without ever being quantified in this way. What is problematic is that these cultures are currently being valued with dollars even when no one seems to know what the cost is, or even if dollars are a suitable metric of cost. This valuation happens though compensation for loss of cultural land and the experiences the land enables. When an oil company compensates an Aboriginal band with “x” dollars for the loss of a cultural site, the culture that the piece of land supported is being bought for the amount of “x” dollars. It seems odd that either party is willing to engage in that exchange when neither knows what the value of the good is.

This problematic valuation of culture seems to be mainly driven by industry, which is constantly spending money in hopes of improving relationships with Indigenous peoples and their perceptions of industry. Industry appears to desire to increase the benefits of interacting with industry enough that Indigenous peoples perceptions will change for the better, thereby relieving the contention and controversy. As I have shown, however, my interviewees’ perceptions of industry were not affected by this type of rational, quantifiable thought process, but rather by a deep, personal conception of sustainability. Why is industry spending money to improve relations with Indigenous peoples when these relations are not informed by money? My data leads me to believe that the bituminous sands industry-Indigenous contention, dysfunction, and controversy are caused by the fact that the two sides are operating under mutually unintelligible conceptual frameworks.

Methods Analysis

The main method that will be analyzed here will be the feminist approach to listening and adjusting my research to fit the reality of the research environment, as it had the largest affect on my project from the time I was collecting data in Canada through my analysis. This methodology employed me to build relationships with my research subjects, avoid imposing my own assumptions while instead focus on listening, and welcome criticism of my methods. It is important to note that this methodology does not welcome criticism in the way of tolerating dissent, but rather is meant to actively integrate feedback and criticism to hone the study's focus on the most important topics (Jaggar, 2014).

As part of this process I was constantly seeking feedback, reminding my interviewees that I had attempted to leave all preconceived assumptions about their situation behind. I think my research subjects appreciated this about me, as I was perceived by them to be less of an investigator and more of a listener. One interviewee alluded to her appreciation of this methodology when expressing her fondness of a documentary about bituminous sands industry-Indigenous relations made by some outside researchers some years before my trip. She said, "This documentary is great...it's just community people talking." The interviewee implies here that her idea of good research involves the researchers simply allowing the community of research subjects to speak. This method may be a good way to hear what issues are most important to the research subject population, but it also allows for all people to comment where perhaps they should not.

Not everyone has equal authority to speak on every matter, yet the feminist democratization of research I employed in my research deeds equal authority to offer

insight to all research subjects. For this reason this method is particularly successful with working with historically subordinated populations, but also creates potentially misinformed conclusions (Jaggar, 2014). On my trip, I asked people who had no background on economics, environmental science, health science, philosophy, and more to comment on these topics. Further, I listened to these perspectives and have drawn conclusions from them assuming they are relevant. I hold that my interviewees' perspectives are relevant and therefore that my conclusions are valid for two reasons.

The first reason I believe the feminist approach to listening by democratizing research was the proper methodology despite its shortcomings is based on the epistemic trustworthiness of emotions. I have pointed out some fundamental differences in the conceptual frameworks of my industry and Indigenous interviewees, and claimed that there are certain aspects of these different cultures that are mutually unintelligible. One example of this is the difference between the rational, technical, quantifiable way of the bituminous sands industry versus the traditional, emotional way of traditional Indigenous culture. In this project I have subscribed to the feminist epistemology that recognizes that emotion is vital to systematic knowledge (Jaggar, 2014). Without recognizing the validity to the emotional, non-rational way of knowing about the world, I would not be affording my research subjects the ability to be heard and have a say in the way they are portrayed in my research as I am morally obligated to as a researcher.

The second reason for my recognition of the validity of my research subjects' epistemic trustworthiness, and therefore my research methods, refers to the concept of Integral Ecology. The theory of integral ecology holds that in order to fully understand complex environmental issues, the perspectives of the individual, collective, exterior, and

interior, must be united. In my study, I have focused on bringing light to the individual perspective, which is often overlooked due to its subjective qualities. Through my research subjects adding their individual perspectives to the larger conversation on this issue, this project has illuminated a fuller and more accurate understanding of the problems and how to move toward solutions (Esbjörn-Hargens, 2009).

Conclusion

The bituminous sands industry-Indigenous peoples relationships are far more complex than the simple, conflicting, and contentious relationships portrayed in the media and academia. Relationships between industry and Indigenous peoples are multifaceted, and are influenced by political, social, economic, and environmental factors. The most powerful influence over relationships, however, were personal perceptions, which transcend rationality and quantification and are based off fundamental, personal characteristics.

Contrary to my expectation, industry-Indigenous relations are functional, civil, and even beneficial. Of course, there are Indigenous groups who stand wholeheartedly against industry, but none that I met with were as adamantly opposed to industry as much as government. Both industry and Indigenous groups were dissatisfied with the role and actions of government within the industry-Indigenous environment. Although I heard many critiques of government, the common thread between all critiques was that government lacks the critical understanding of the situation to maintain the leadership role it currently has.

Indigenous peoples' perceptions on the bituminous sands have more to do with a person's conception of sustainability than the costs and benefits of industry felt by that

person. That is, a personal trait, rather than a practical, quantitative, rational thought process is what contributes to people's perceptions of the bituminous sands industry. Many people, although experiencing many negative effects of the industry, still had a positive perception of the industry. This is because within the bounds of their conceptual framework, the industry seemed positive regardless of the negative impacts. This is a characteristic of an immediate conception of sustainability, one that prioritizes the economic benefits of industry to help preserve culture. Likewise, some of my interviewees were not able to accept the industry at all, regardless of the benefits, because their conception of sustainability was long-term, extending past the timeline of benefits of the industry. These individuals prioritized the environmental benefit of the absence of industry to preserve culture. This conclusion gives a reason for why such vastly different opinions could grow out of the same practical outcome: these opinions are not rooted in practical outcomes but rather personal conceptions.

Even though industry-Indigenous relations are subjective, personal characteristics, influenced by a preferred method of cultural preservation, industry and Indigenous peoples are assuming that money can influence these relations and perceptions. I argue that the Indigenous culture of my research subjects is not quantifiable because of its traditional, nontechnical makeup, therefore, money is not a possible metric for measuring it. Even if culture was quantifiable, none of my interviewees knew what the value would be, further emphasizing the inadequacy of dollars to measure culture as they currently are. Therein lies the unintelligibility of the conceptual frameworks of the two cultures. I conclude that the contentions and conflicts that exist between the industry and Indigenous

peoples likely exists because of an inability to understand one another due to this unintelligibility of conceptual frameworks.

I conclude that utilizing a feminist approach to listening and democratizing my research was an effective research strategy and methodology. This approach allowed me to understand aspects of my research subjects I would have never been exposed to if I had entered into their communities with strict, limiting objectives and questions. By listening to my research subjects rather than imposing questions on them, I earned their trust, which propelled my research even further as people opened up to me. This research methodology also enabled me to more precisely investigate my topic in ways meaningful to my research subjects. Most importantly, this research methodology allowed me to make the conclusions I have, as without listening, I would not have been able to collect the emotional, nontechnical, traditional knowledge that cannot be measured using rigid, non-emotional, and quantitative mode of inquiry.

Recommendations

The unintelligibility of the conceptual frameworks of the industry and Indigenous peoples illuminates why it is silly, impractical, ineffective, and virtually pointless for either sides to be throwing *facts* around as ammunition to break the other's argument: It's not a fact based argument, it's a cultural, conceptual, emotional argument. An emotional argument cannot be resolved with rational, quantitative conversations. To achieve solutions, each side will have to attempt to shift their conceptual framework.

The Canadian government is in serious need of change, as well. Even the industry, which appears to be an obvious economic ally of government, is dissatisfied with the lack of leadership involvement from the Provincial and Federal governments.

The government in Canada should invest more energy into addressing this issue in order to avoid serious environmental, social, or economic problems.

Not a single person in my study had the slightest clue at how much culture was worth. This uncertainty tells me it may be smart to develop slowly and conservatively in order to avoid a potentially devastating outcome.

Both sides of the bituminous sands argument have perfectly valid points. The points made by each of the sides might even be *true*, but that does not mean that the other side's views are wrong. Each side has a fully self contained and sustainable argument. Each argument is like an ecosphere, an enclosed glass orb aquarium that has the perfect balance of water, plant life, microbes, nutrients, and air to sustain the ecosystem within indefinitely. Each side's argument has everything it needs to be not only convincing, but true, to the people who share a similar subjective concept of sustainability. Rather than focusing on argument, however, these groups should be focusing of solutions; rather than smear the opponents stance, listen to it, and use it to make a more informed idea for how to move forward. Until there is compromise, at least one of the two sides will be discontented.

More important than being right is being heard. Neither side of this argument is listening. In this way, environmentalists and oil companies alike are missing the point, and impairing our chances as a society to have a meaningful discussion on the difficult question of how we should use this, and other forms of energy.

In order to make move forward in a sustainable and consensual way, the bituminous sands industry should realize that the most important factor playing into the relations with Indigenous peoples is personal perception. This is influenced by something

much more profound than the economic “trinkets” that are being used as compensation currently. If industry wants to be serious about Indigenous relations, it will take a much more involved and intentional process of relationship building. It will take a challenging shift in the conceptual framework under which it currently operates. I think this process will begin by the simple, yet demanding, act I engaged in on my trip: listening.

Appendix

Appendix A: UROP Grant Application Narrative

E—Part five

1. Introduction:

My research is intended to advance the ideas I am exploring in the writing of my honors thesis for the Environmental Studies Program at CU. The question I am trying to answer through my research is: what are the effects of the bituminous sands industry on indigenous people of Canada and the United States, and is there a mode of operations that the industry could assume in order to eliminate these effects? I began researching this topic in September 2013, and I quickly became passionate about it, as it is the combination of two of my greatest interests: energy and social justice. As I learned more, I began to realize that there are many remarkable patterns in this complex and highly lucrative industry. For one, I found it interesting that there was such a powerful voice speaking out against the bituminous sands by environmentalists, as if *this* were the industry on which anti-fossil fuel activists should focus all their energy. It also struck me that First Nations groups in Canada and Native Americans in the U.S. seemed to make up a disproportionately large part of this voice. As I dug deeper I realized that this discrepancy seemed to be because these communities were bearing a similarly disproportionate share of environmental burdens from the industry at one point or another on the production stream.

I have been exposed to the ideas of environmental justice while working for the CU Environmental Center's Assembly for Sustainability and Equity, and recognized this as a case of such an environmental injustice. As my interest in the issue grew and I became nearly as excited as the activists standing in front of semi-trucks to stop cargo from reaching the bituminous sands in Northern Alberta, I noticed that there is not nearly enough information about this issue being published in scientific journals, newspapers, social science journals, or energy reports to satisfy my desire for knowledge. What I have come to know is that the bituminous sands of Alberta, Canada, and its downstream effects, are extremely under-researched.

Possibly the most fascinating part of the bituminous sands industry, however, is its scale. Such a vast quantity of crude oil is produced in, and shipped out of, in one way or another, the Fort McMurray area of Northern Alberta every day, that it dwarfs many of the other big energy extraction operations in the world. Vast is the volume of petroleum produced, as is the distance that the product must travel to find even the closest refineries – and much further to the American refineries of the Gulf Coast, where the proposed Keystone XL Pipeline would bring over 800,000 barrels of crude oil every day. Keystone XL would pass through the plains of Montana down through Nebraska where it would end in Cushing, Oklahoma, pipeline crossroads of North America and in the center of Sac Fox Nation Native American land. Other Native American groups, in places as far from bituminous sands development as Northern Minnesota, are being affected by the exportation of this product to the global market via trains and pipelines.

To experience this great distance, to distinguish this apparent environmental injustice from what some might call an economically explicable mirage, to inform myself what exactly is going on in spite of a lack of information, and most importantly to gain

the perspective of those who are most geographically and emotionally tied to this land and this issue, I propose to travel from Fort McMurry, to Northern Minnesota, to Cushing, Oklahoma.

I believe that Zora Neale Hurston captured my purpose for going to these places better than I could ever do myself when, in *Their Eyes Were Watching God*, she says “you got tuh go there tuh know there.”

Beyond my own personal thirst for information on this topic, and professional goal of designing, implementing, and analyzing a research project of my own, I believe that other people in the academic, energy, and social justice worlds will find that my study fills a gap in the story of the bituminous sands. Many U.S. Americans see the Keystone XL pipeline as a potential benchmark for measuring our progress and commitment to reducing our carbon footprint, and they will be interested to know that in addition to the issue of environmental preservation, there is an important social justice issue embedded in it. That being said, for every aspect of my research I am committed to scientific objectivity, and although my previous research leads me to believe that the situation I am studying is a certain way, I am excited to be, as I most undoubtedly will be in some way, proved wrong.

2. Background:

The bituminous sands of Alberta, Canada make up the third largest oil reserve in the world in the form of a tar-like substance called bitumen. Bitumen takes extra energy to refine and transport, because it is too viscous to easily move around until it has been cooked into a synthetic crude petroleum product. With so much more energy that has to be consumed in order to produce oil from the bituminous sands, some might wonder why the industry is booming, with investments growing from around \$4 billion to over \$25 billion in the last decade. The answer is likely that the United States, to whom Canada sells 99% of its oil, has also been going through some changes over the last ten years. In 2003, after the beginning of the wars in the Middle East, the U.S. scrambled to find a secure source of oil to feed its huge demand. Suddenly the bituminous sands, whose gigantic reserves had been discovered by geologists many years before but looked upon as too expensive of an oil source, became an economically viable endeavor.

Since then the industry has exploded, with resource extraction leasing permits affecting an area almost the size of Florida. Jobs and money have poured into the region, and there has been a definite impact on those who have resided in this area for centuries. First Nations groups, many of which live in areas that are now completely surrounded by bituminous sands projects, have a multidimensional relationship with this new and growing industry. Although some groups have expressed deep resentment for the bituminous sands, protesting at project sites, practicing civil disobedience, banning oil companies from entering their land, and taking legal action against oil companies, other groups support the bituminous sands and the economic benefit they have brought to the area. This complex relationship, intertwined with economics, social and environmental justice, a history of neocolonialism in Canada, and an even longer history of First Nations culture, is one of the most crucial aspects of this booming energy machine. In order to do research on this topic a multidisciplinary approach must be employed alongside several theoretical frameworks.

I am a student in the Renewable and Sustainable Energy Institute’s Undergraduate Energy Certificate Program here at CU, and I have always been fascinated with the

energy world. I was inspired to study the Canadian bituminous sands while taking a class taught by my UROP faculty sponsor, Sarah Rogers. As an expert on the American West, mineral development, land use, indigenous culture, and energy all backed by a scientific professional history, Sarah Rogers guided me over the course of an entire semester to produce a journalistic report focused on the same question that I eventually turned into my official honors thesis research question. Later, at the beginning of the spring 2014 semester, Northwestern University selected me to be a delegate at the 2014 Northwestern Undergraduate Conference of Human Rights, a conference that Sarah Rogers introduced to me. This year, NUCHR focused on the relationship between the environment and human rights.

This conference served as a breaking point for me in my research. During my time in Evanston, Illinois, I expanded my understanding of the effects of anthropogenic disturbances in the natural environment on the human rights of the people most connected to that environment. It is true that the profit-driven capitalist societies in North America will often take action to increase economic output at the expense of the environment and people. Racial, religious, and ethnic minorities are historically the populations that endure the grossest environmental and social injustices. As a white male as well as a university student, I will carry with me a great deal of privilege based on my race, gender, class, and nationality. It is important that I remain aware of my power and privilege while conducting my research, using the skills I have been practicing for the last two years to maintain an inclusive, and non-oppressive study.

I am in my final semester in a two-year academic, social and environmental justice-focused leadership program at CU called the INVST Community Leadership Program. In INVST, my thirteen fellow cohort members and I have spent the last two school years learning about and practicing the theories of democratic facilitation, nonviolent action and communication, community building and leadership, privilege and oppression, as well as skills like public speaking, civic engagement, and organization. The theories that I have learned and practiced have become integral in my professional personal lives, and will serve as guiding forces during my research. With the bituminous sands industry growing more robust, its coverage in media has also grown, and First Nations communities are often mentioned as opposition. As a result there have likely been many journalists and researchers, like myself, to reach out to these communities in recent months. I will reflect upon this during my research to maintain a culturally sensitive study, in which all people I interact with feel comfortable.

3. Methods:

Much of the research I do for my honors thesis is comprised of analysis of secondary academic and scientific sources. The proposed portion of my research will be all primary sources of information. I plan to collect this information principally through interviews and conversations with people I meet. Since I am conducting research in which humans are the primary subjects, I am undergoing the process of earning permission to do so from the Institutional Review Board. Other information will be collected by taking tours of facilities and attending information sessions, but this will only be supplementary to the person-to-person contact I make along the trip.

I am currently in the process of reaching out to two types of groups in each of my research locations: oil companies and other industry officials, and First Nations and Native American groups. At each research location, Northern Alberta, Northern

Minnesota, and Oklahoma, I want to gain a balanced perspective on what is going on with this very contentious issue. In Alberta, I will meet with First Nations groups as well as bituminous sands oil companies. In Northern Minnesota I will meet with a Native American environmental group (called Indigenous Environment Network, and Winona Laduke, who I met at the NUHR conference) and oil companies in the area. In Oklahoma I will meet with Native American groups involved with the Keystone XL Pipeline (Sac and Fox Nation), as well as the pipeline and oil refining companies involved in the process of bringing bituminous sands oil into the U.S. A generic interview example for each of these two types of entities, indigenous groups and oils companies, can be found in the appendix. Although I am aware every group within their respective category is unique, for the purpose of my research I am interested in asking similar questions to groups in each category so I can make more accurate conclusions about the effect of the bituminous sands on indigenous people of Canada and the U.S. in general.

I have already made contact with at least one community partner (research subject) in every research location via email explaining my research and my desire to come and learn about their situation. So far I have received positive feedback and will follow up to make more solidified plans in the coming months. I will keep contact with these community partners by periodically emailing them to update them with more accurate dates of my arrival, and specifications of what I will be asking of them. I have been put into contact with my community partners through family and friends, the network of my UROP faculty sponsor, meeting them at conferences, as well as through “cold calls” over email. I will continue to utilize all these resources to increase my community partner base so that I have a large number of meetings lined up with people from a diverse range of backgrounds and opinions on the issue. Once in a research location, I hope to utilize the time I have available there as well as the networks of the people I meet with to expand my personal network beyond what I am able to plan prior to leaving.

Even though English is the primary language in each of my research locations, there will be communication barriers between my community partners and me due to differences in cultural understanding, and conceptual language barriers. Some of this can be mitigated by extensive research on the history and current condition of the land, people, government, and business in each research location, but much of it will be impossible to avoid, as I have had a vastly different experience coming from a privileged U.S. American background. This will not degrade the worth of my research, however. If anything, the reconciliation of the differences in people and culture will add to my research, and I will have to be sensitive and compassionate to avoid offensive or oppressive situations. To approach my community partners in a way that shows that I am a trustworthy researcher and friend, and to retain their partnership, I will rely on communication and civic engagement skills I have learned in the INVST Community Leadership Program. These skills include nonviolent, non-oppressive, and democratic communication, as well as nonjudgmental listening skills.

4. Time Schedule:

-From March until July, I will meet with my UROP faculty sponsor once per month in person to sort out preparations and develop my strategy for research. Since this research is centered on my honors thesis, I will also be developing my approach with my honors committee and thesis professor, Dale Miller, who I will meet with twice per week for the remainder of the Spring 2014 semester.

-July 6-8: Drive from Boulder to Fort McMurray, Alberta.

-July 8-22: Travel around the Fort McMurray and Fort McKay area meeting with various First Nations groups, oil companies, interest groups, and community members unaffiliated with the bituminous sands. During this time I will be conducting interviews, meeting as many people as possible and seeing as much of the area as I can as pertains to my research.

-July 22-24: Drive to Callaway, Minnesota.

-July 24-26: Meet with Winona LaDuke and the White Earth Land Recovery Project. This leg of the trip will allow me to gain some insight on the effect of the bituminous sands on indigenous people in the U.S. from their own perspective.

-July 26: Drive to Bemidji, Minnesota.

-July 26-28: Meet with Indigenous Environment Network. This portion of the trip will expose me to an indigenous environmental group in the U.S. that opposes the bituminous sands.

-July 28-30: Drive to Cushing, Oklahoma.

-July 30- August 1: Visit Cushing Oklahoma, the crossroads of the proposed Keystone XL Pipeline, and meet with interest groups in the area.

-August 1: Drive to Stroud, Oklahoma.

-August 1-3: Visit with the Sac & Fox Nation Native American group. This community has been a consistent voice in the bituminous sands ad Keystone XL Pipeline debate.

-August 3-5: Drive home to Boulder, Colorado.

-August 6: Unwind from my trip and spend day reflecting, writing, looking through photos, and organizing research from trip in order to begin the process of writing my final report.

5. Budget Justification:

Note: For much of my trip I will be traveling in a foreign country. Two full weeks will be spent in the Fort McMurray area, where prices are on average 70% higher than in my hometown of Denver according to Numbeo.com. The prices expressed in my budget do the best job possible of considering the variability in price across different research locations.

-The first item on my expense allowance list is a request for \$1200 for transportation. I will be driving more from Boulder to Alberta, to Minnesota, to Oklahoma, and back to Boulder in a trip of about 4,600 miles. My car gets around 20 miles per gallon (average) and gas has an average price between the U.S. and Canada, where gasoline is much more expensive, of \$4 per gallon. All things considered, about \$920 will be needed to complete the 4,600 mile loop. The \$280 extra dollars I have requested will be to cover gas for the approximately 500 additional miles I will travel locally in my research locations, and basic car maintenance like oil changes, and other fluids.

-Next on my expense list, I have requested \$20 per day for food. I will be cooking most of my own food, and so food funds will not only be spent on produce, breads, meat, and dairy, but on necessary food stuffs like cooking oil, salt, etc.

-My next expense is lodging. Although I will be camping for the majority of the trip, I will be paying for lodging every three days in order to have consistent access to amenities and provisions like showers, laundry machines, etc. This sort of lodging will generally be campgrounds that are equipped with such features. There are also some areas I will be passing through that do not allow camping and will require a fee. On average, these campsites cost \$50 per night, and I will utilize them ten nights during my trip yielding \$500.

-Phone and internet access will be crucial for me as I will need to be in constant communication with the people I am yet to meet up with on my trip. I will use the internet to upload notes, photos, and data from my computer onto Google Drive for backup, as well as my phone to call people in advance to solidify plans and make appointments. My cell phone will serve as the internet source for my computer. The requested \$150 will pay for a \$25 dollar international fee from my cell phone provider, and 100 megabytes of internet access for my phone and computer.

- \$100 will be spent on camping gear like fuel for my camping stove to cook on, batteries for flashlights, eating and cooking utensils, fire starting material, first-aid and safety gear.
- \$30 will be spent on toiletries for the month, laundry detergent, laundry machine fees, and medicine.

References – In Bibliography

Appendix

Indigenous Community Member Interview

Name (optional):

Organization (optional):

Location (optional):

Please tell me about your general experience concerning the bituminous sands development. What have you heard, what do you know?

Does this relate/reflect to how you or your community has been treated in the past?

What are the burdens and benefits of the bituminous sands development?

When and where did you begin to notice these changes?

What about the bituminous sands development affects your personal daily life the most?

Do you believe that indigenous folks bear more or less of these burdens or benefits than other populations? Why?

Are the bituminous sands an important issue? Why or why not?

What experience do you have with nature? Is this typical of a person in your community?

For you, what is the purpose of life? Do the benefits of the bituminous sands development help in achieving this purpose?

Do you have any further comments?

Who would you recommend I talk to next?

Oil Company Interview

Name:

Company:

Location:

What does your company do? Please tell me about the history and current condition of the organization.

What is your company's mission? How does this relate to the bituminous sands?

In what ways is your company's involved in the bituminous sands development?

What are the benefits and costs of the bituminous sands in terms of the economy, society, and environment?

What are the most common complaints/negative effects from the bituminous sands? Why do these exist?

Are there ways that your company could avoid these effects?

Who do you think these effects land on the most? Why do you think this happens?

Do you think native people in the U.S. and Canada have a larger than normal stake in this issue? Why or why not?

Why are (First Nations or Native Americans) commonly listed along with environmentalists when talking about people who oppose bituminous sands (pipelines, etc.)?

What would the cost of eliminating all negative social effects of the bituminous sands?

What is your hope for you company in the future? How does this relate to the bituminous sands?

What effect does the Keystone XL pipeline have on bituminous sands development?

Should it be built? Why?

F—Part six—Abstract of the project

The bituminous sands of Alberta, Canada are some of the biggest and fastest growing energy developments in the world. This booming industry is not without an effect on the people most geographically close to the area, which is being completely changed in the name of oil. Proximity to the bituminous sands mines, however, is not the only factor that seems to be determining the effect the industry has on people. Indigenous people of both Canada and the United States seem to bear greater environmental burdens from the industry than other populations. Through meeting with oil companies, indigenous organizations, and community members in locations affected by different facets of the production stream of the industry, I hope to find out if and why these apparent disproportionate effects exist, and if the industry can take action to change them.

Appendix B: Revised UROP Application Narrative

Background

The bituminous sands are a highly under researched field. This is likely because the industry has only become a popular issue within the last decade or so, as more investments have been acquired and the Canadian economy has shifted. In addition, pro-industry laws have made it difficult for certain information to surface. The research on the bituminous sands that does exist has focused on the environmental effects of the industry in terms of carbon emissions into the atmosphere and chemical releases and spills into land and waterscapes. Studies like this, however, are purely quantitative, and lack the sociological approach that I aim to employ.

In terms of the effect of the industry on humans, some research has been done on the effect that the aforementioned environmental conditions have had on people who live near bituminous sands developments, or downstream from watersheds that are utilized by bituminous sands companies for operation. Studies suggest that the health of some people, especially First Nations, is being adversely affected due to the bituminous sands industry. Indigenous communities tend to be disproportionately affected by the industry. In light of this, the ideas of neocolonialism, environmental justice, and racial oppression have helped to frame the academic conversation through which these studies are conducted.

Little research has been done in the way of the comparing the industry's different extraction and transportation methods. For example, some argue that steam assisted gravity drainage mining is better for the environment than strip mining, and some claim that pipelines are more efficient in terms of energy use for transporting oil than rail cars. The perceptions of First Nations and Native Americans, who tend to be large bearers of

the positive and negative effects of these different extraction and transportation methods, have not been collected. US American research has examined the economic and environmental costs and benefits of oil transport in pipeline versus rail as part of an ongoing deliberation regarding the allowance of the Keystone XL Pipeline, but the preferences of indigenous people in North America have not been of paramount political consideration. These discussions have become political as they can have a dramatic effect on the economy of an area.

No research has been done in the combining of all these studies: the comparison of different industry operation methods, and their respective perceived impacts on nearby or downstream Indigenous communities. My honors thesis research will create a more comprehensive understanding of the effect the bituminous sands industry has on people. I will do this by combining the scientific research that already exists on the environmental and health effects of the bituminous sands industry with a new study, which I am proposing here, on the understanding people have gained in their community's experiences on the effect of different industry operation methods. This will be accomplished through hearing and comparing peoples' perceptions of the effects of these different methods. The proposed research that will take place in Alberta, Canada, Minnesota, and Oklahoma, will make up a portion of this larger research question by answering the question of what are the burdens, benefits, and other effects of the different extraction and transportation methods employed by the bituminous sands industry from the perspective of the Indigenous communities most affected by them?

Methods

My method of collecting data will be to conduct meetings with individuals from Indigenous groups and gaining their perspectives on the different methods of operations that are happening around them. Additionally, I will conduct meetings with oil companies to gain insight on why the different operations methods exists in the places they do. Ultimately I want to be able to make recommendations to the industry about how to best address the needs of the Indigenous groups by assessing the perceived costs and benefits of the different operations methods, and pairing that information with the research that exists on the health and environmental effects of the operations methods. I will conduct interviews with the following groups:

Alberta:

-Indigenous groups include the Athabasca Chipewyan First Nation, Chipewyan Prairie First Nation, Fort McKay First Nation, Fort McMurray No. 468 First Nation, and Mikisew Cree First Nation. With these groups I will inquire about the stories and perceptions the people have in relation to the different operations methods. Oil companies include Suncor, Syncrude, Exxon-Mobil, and BP. With these oil companies, I will do tours of sites where different operations methods are used and inquire about the scientific, environmental, political, and social reasons why one method is used in a particular place over another.

Minnesota:

-I will meet with groups on the White Earth Reservation to discuss the proposed Keystone XL Pipeline, an example of one transportation method potentially employed by industry.

Oklahoma:

- I will meet with members of the Sac and Fox Nation to discuss the Keystone XL Pipeline, which will ultimately end in their reservation land. Here, I will also meet with TransCanada, the maker of the pipeline. This leg of the trip will allow me to explore the ways that different bituminous sands transportation methods are perceived by Indigenous groups outside of Alberta, where the impact on land use is still felt.

During these meetings, I will use the nonviolent communication and strategic questioning skills I have learned while studying leadership with the INVST Community Leadership Program. I will only conduct totally consensual interviews where my intentions are transparent, and allow any interviewee to remain anonymous and stop the interview at any point. To maintain scientific integrity and continuity in my work, I will ask everyone similar questions and avoid leading questions that could distort answers. See below for updated versions of my interview templates.

Indigenous Community Member Interview

Name:

Organization:

Location:

Please tell me about your general experience concerning the oil sands development. What have you heard, what do you know?

What are the burdens and benefits of the oil sands development?

When and where did you begin to notice these changes?

What about the oil sands development affects your personal daily life the most?

Why do you believe I asked you in particular to allow me to interview you?

Are the oil sands an important issue? Why or why not?

If there was one thing you could change about your communities relationship to oil sands, what would it be?

Do you have any further comments?

Oil Company Interview

Name:

Company:

Location:

What does your company do? Please tell me about the history and current condition of the organization.

What is your company's mission? How does this relate to the oil sands?

In what ways is your company's involved in the oil sands development?

What are the benefits and costs of the bituminous sands in terms of the economy, society, and environment?

What operations methods do you employ in your developments?

What are the social, political, geological, and environmental reasons for these methods?

Who are the stake holders in these operation methods?

Appendix C: IRB Protocol



University of Colorado
Boulder

TITLE: The Effects of the Oil Sands Development

PROTOCOL VERSION DATE: May 8, 2014

VERSION: 1

PRINCIPAL INVESTIGATOR (PI):

Name: Turner Wyatt

Address: 1555 Broadway Apt. 110, Boulder, CO, 80302

Telephone: 720-838-4243

Email: turner.wyatt@colorado.edu

KEY PERSONNEL

Name: Dale Miller

Role in project: Faculty Advisor

OBJECTIVES

-The purpose of this project is to research the effects of the bituminous sands industry on Indigenous groups in Canada and the United States most affected by this industry. Through studying the perceptions of these groups on the industry's different methods of operations, and in combination with scientific data collected regarding the environmental and health effects of these methods, I hope to learn which operational methods are most ideal for these Indigenous groups. This research will be used in the production of the PI's undergraduate honors thesis.

BACKGROUND AND SIGNIFICANCE

-The bituminous sands industry is new, and thus far the research has primarily looked at the environmental and health effects caused by the pollution of the industry. Research has been done on the history of colonialism and how the industry relates to those traditions, with regard to Indigenous groups. This study will employ the knowledge of affected Indigenous people by studying their perceptions of the industry in combination with previous research in Meta analysis.

-So far, no research has been done on the perceptions of the groups on the different methods of oil production and exportation, yet they are some of the people most affected by these methods.

-This study will apply the knowledge that the people who are most affected have on the bituminous sands industry. In conjunction to the research on health and environmental

effects that already exists, this study will create a more inclusive picture of the effects of the bituminous sands industry.

PRELIMINARY STUDIES

-The PI has researched the bituminous sands industry including its history, operations methods, and the environmental and health impacts. The PI has also researched the history of Indigeneity in North America and how this relates to industry and colonialism. This study began in January 2014.

RESEARCH STUDY DESIGN

-This study will involve person to person interviews in order to collect the knowledge and perceptions of the subjects regarding the bituminous sands industry. The study will be conducted at three different locations from July 7, 2014 – August 7, 2014, Fort McMurray, Alberta, Canada, Minnesota, and Oklahoma. In each of these locations, individuals will be selected based on their association to the bituminous sands industry. About one third of the subjects that will be approached (through referral, email, or over the phone) will be involved directly in the bituminous sands industry and the two thirds will be members of Indigenous groups. Individuals will be asked to conduct short interviews lasting from 15-60 minutes, in which they will be asked questions regarding their relationship or experience with, and perception of the bituminous sands industry. In the Fort McMurray area, about 20 people will be asked for interviews. In Northern Minnesota, about 10 people will be asked for interviews. In Oklahoma, about 10 people will be asked for interviews. Upon returning to Colorado, I will begin the process of analyzing my data through organizing and comparing the perceived effects to the already researched environmental and health effects. If I am able to make a recommendation about certain operations methods being better than others from the perception of the Indigenous groups, then my objectives will have been met.

FUNDING

-This research is being funded by The Undergraduate Research Opportunity Program at the University of Colorado at Boulder.

ABOUT THE SUBJECTS

-40 subjects will be enrolled.

Subject Population(s)	Number to be enrolled in each group
Oil companies in Alberta	5
Indigenous community members in Alberta	15
Oil companies in Minnesota	5
Indigenous community members in Minnesota	5
Oil companies in Oklahoma	5
Indigenous community members in Oklahoma	5

- All 40 subjects are anticipated to complete the study.

-Most of the subjects will be Native North American from a variety of different groups. Men and women, as well as people from all ages will be contact evenly (other than minors). Subjects outside of these reservations will be predominantly white men.

-During the interviews, subjects will be asked questions that could lead telling stories about family, co-workers, community members, or other people in the area that add to their perception of the bituminous sands industry. NO specific question asking subjects to reveal information about other people will be asked.

-The only criterion for subjects is that the subject, or subjects guardian in the case of a minor, consents to the study and wants to be interviewed.

VULNERABLE POPULATIONS

-I will be talking with people on Native reservations, which tend to be economically disadvantaged places. There will also likely be people who do not speak English or speak English as their second language. I may also talk to some children, given the consent of their guardian. In all of these cases I will use sensitive language and avoid directed questions that could coerce people. As part of the preparatory study, the PI will be researching the cultures of these vulnerable populations to make sure that appropriate language is being used. For example, this study is called to “The Effect of the Oil Sand Development” because this is the more accepted term in Canada, while bituminous sands is the term used in the US.

RECRUITMENT METHODS

List recruitment methods/materials and attach a copy of each in eRA	
Email	
Phone call	
Referral leading to either email or phone call	

-The PI will recruit subjects for interviews by either calling them on the phone or e-mailing them. During an interview, the PI will ask the subject if there is anyone he or she knows that would be beneficial to talk to for the study based on their knowledge of the bituminous sands industry. After receiving this referral, the PI will contact them in the same way (either phone or email). Subjects will be approached based on their geographical proximity to the industry, or relevance to the study (i.e. if they are involved in an Indigenous group or oil company). To avoid coercion, the PI will be clear with the subject that the study is completely voluntary and that nothing will be held against the subject for withdrawing from the study at any time.

COMPENSATION

-No compensation will be given to subjects.

CONSENT PROCESS

-Consent will be obtained after the signing of the consent form which will be done in person after the PI meetings the subject and before the interview is conducted. To avoid coercion, the PI will read the consent form aloud and make sure the subject understands each section can affirms understanding with a verbal “yes.” The areas pertaining to the consensual nature of the study will be emphasized. In the case that a translator will be needed, the translator will need to be someone who speaks English and the language of the subject, and have no predisposition to altering the answers of the subject. In the case

of minors, the PI will read the consent form in the presence of them and the minor's guardian, and again emphasize the areas pertaining to consent.

-With many Indigenous groups, tribal or governmental law require that council representatives, or central authority figures such as chiefs, approve the presence of non-Natives on reservation land, and any research being conducted. The PI will research all Indigenous groups prior to engaging with them, and follow the necessary steps for approval. Any approval given by an Indigenous group will be submitted to IRB.

PROCESS TO DOCUMENT CONSENT IN WRITING

-The PI will offer a consent form to every subject upon its signing. The three types of consent form will be for adults who are able to consent, adults who are not able to consent, and children.

PROCEDURES

Name of instrument/tool/procedure	Purpose (i.e. what data is being collected?)	Time to Complete
Interview, recorded with a voice recording device. Questions from the interviews are attached.	Subjects' perceptions and knowledge about the bituminous sands industry.	15-60 minutes.

Visit #	Procedures/Tools	Location	How much time the visit will take
Interview	PI will conduct an interview with the subject and record it with a voice recording device. If the subject prefers to opt out of using the voice recorder, notes will be taken on the PI's computer or with pen and paper. The audio recording of the interview—or the notes in the case the subject opts out of being recorded—will be the only record of the interview.	At the subjects home, work, or public location of their preference	15-60 minutes

SPECIMEN MANAGEMENT

-No specimens will be collected.

DATA MANAGEMENT

-Data will be collected on the PI's personal computer or a voice recording device. In either case, the data will be uploaded onto the PI's cloud hard drive. The PI's computer

will remain locked at all times and require a password to turn on. Additionally, the data will be protected by another password system to log on to the cloud drive. After any hard data is uploaded onto the cloud drive, hard copies will be erased. The hard copies of the consent forms from the study will be locked in the truck of the PI. At the end of the study, all physical material will remain as the property of the University of Colorado until it is disposed of by the PI.

WITHDRAWAL OF PARTICIPANTS

-If any subject wishes to remove themselves from the study at anytime, the data pertaining to that subject will be deleted and nothing will be published containing information that was collected from that subject. The subject will be informed during the consent process that they are able to withdrawal from the study at any time from the time of the interview until the final research is published.

RISKS TO PARTICIPANTS

-The risks of this study are all of small magnitude and probability. One possible risk is embarrassment during the interview process if the subject reveals something personal. Subjects could also be at risk of being questioned about their involvement in this study by their employer if they work for a bituminous sands company or the Canadian government. Subjects are also at risk of being reprimanded by their community if they reveal something negative about their society.

MANAGEMENT OF RISKS

-Risks will be avoided by removing all ties between the individual subject and the data recorded, as well as keeping data locked away or stored on a password protected network. The PI will also work to minimize risks by not verbally speaking about the information that is recorded during interview to other subjects or other people involved in the research.

POTENTIAL BENEFITS

-The relationships between bituminous sands companies and Indigenous groups tend to be complex and contentious. This research will ease these relationships by giving people on both sides the perspectives of the other so that they may make decisions while respecting the rights of one another and move forward in the most mutually beneficial way politically, socially, environmentally, and economically.

PROVISIONS TO MONITOR THE DATA FOR THE SAFETY OF PARTICIPANTS

-The PI will be responsible for all data. Upon collecting data and throughout the process of writing the final report, the PI will be analyzing and evaluating the data, making sure that no private information is discernible.

PROVISIONS TO PROTECT THE PRIVACY INTERESTS OF PARTICIPANTS

-Subjects will be given the opportunity to participate in the interview in any location they choose, include their own home. Additionally, they will be able to decide whether they want information to be recorded using a voice recording device, computer, or by hand.

MEDICAL CARE AND COMPENSATION FOR INJURY

-The research does not involve more than minimal risk.

COST TO PARTICIPANTS

-If the subject chooses to participate in the interview somewhere outside their home and they arrange to meet the PI in a location, the subject will be responsible for all transportation costs involved, including bus fare, gas, parking, etc.

DRUG ADMINISTRATION

-No drugs will be administered.

INVESTIGATIONAL DEVICES

-No investigational devices will be used in this study.

MULTI-SITE STUDIES

-All research and analysis of the data recorded during this study will occur at the University of Colorado at Boulder.

SHARING OF RESULTS WITH PARTICIPANTS

-During the interview process, all subject will be given the opportunity to request a digital copy of the final product from this study upon its completion. The PI will be responsible for sending out final products. Additionally, each subject will be able to request digital copies of the information that was collected during their own interview.

Appendix D: IRB Consent Document

Title of research study: The Effects of the Oil Sands Development

Investigator: Turner Wyatt

Why am I being invited to take part in a research study?

We invite you to take part in a research study because of the geographic proximity to or involvement in the oil sands industry.

What should I know about a research study?

Someone will explain this research study to you.

Whether or not you take part is up to you.

You can choose not to take part.

You can agree to take part and later change your mind.

Your decision will not be held against you.

You can ask all the questions you want before you decide.

Who can I talk to?

If you have questions, concerns, or complaints, or think the research has hurt you, talk to the research team at 720-838-4243 or turner.wyatt@colorado.edu. Local: Alison Taylor, ataylor@ualberta.ca, 780-492-7608

This research has been reviewed and approved by an Institutional Review Board ("IRB").

You may talk to them at (303) 735-3702 or irbadmin@colorado.edu if:

Your questions, concerns, or complaints are not being answered by the research team.

You cannot reach the research team.

You want to talk to someone besides the research team.

You have questions about your rights as a research subject.

You want to get information or provide input about this research.

Why is this research being done?

This research is part of the principle investigators undergraduate honors thesis at the University of Colorado at Boulder. It is being done to expand the scope of knowledge that exists about a new industry by offering researchers and the general public the perspectives of those most affected by the industry.

How long will the research last?

We expect that you will be in this research study for one or two interviews. The study itself will last until November 2014.

How many people will be studied?

We expect about 40 people will be in this research study. We expect about 25 in Canada and 15 in the US.

What happens if I say yes, I want to be in this research?

If you agree to be a part of this study, you will be asked a series of questions about your daily life, general experience, and interactions with the oil sands industry. During the interview the principal investigator will record the conversation with either a computer, hand written notes, or a hand held voice recorder. The interview will last anywhere from 15 minutes to an hour. Upon the choice of the principal investigator, you may be asked to a follow up interview that will be of similar length and questions. The interview will be done wherever you feel most comfortable, e.g. you house or a nearby establishment. You are welcome to have any friend or family member present during the interview, but otherwise you will be with the principal investigator only.

What happens if I do not want to be in this research?

You can leave the research at any time and it will not be held against you.

What happens if I say yes, but I change my mind later?

You can leave the research at any time it will not be held against you.

Is there any way being in this study could be bad for me?

You should know that any thing you say could be published, so if there is something you think could be socially harming to you, you can choose to not say it.

Will being in this study help me any way?

We cannot promise any benefits to you or others from your taking part in this research. However, possible benefits include a greater understanding of how other people with similar relationships to the oil sands industry are affected.

What happens to the information collected for the research?

Efforts will be made to limit the use and disclosure of your personal information, to people who have a need to review this information. We cannot promise complete secrecy. Organizations that may inspect and copy your information include the IRB and other representatives of this organization. Other organizations that may have access to this information will be the University of Colorado at Boulder, and the Environmental Studies Program there.

Can I be removed from the research without my OK?

The person in charge of the research study or the sponsor can remove you from the research study without your approval. Possible reasons for removal include discovery of fake information or perception of danger.

We will tell you about any new information that may affect your health, welfare, or choice to stay in the research.

What else do I need to know?

This research is being funded by the University of Colorado at Boulder.
If you are interested in receiving a copy of the final product of this research you can request one by contacting the principal investigator at 720-838-4243 or turner.wyatt@colorado.edu.

Signature Block for Capable Adult

Your signature documents your permission to take part in this research.

_____ Signature of subject	_____ Date
_____ Printed name of subject	
_____ Signature of person obtaining consent	_____ Date
_____ Printed name of person obtaining consent	<div style="border: 1px solid black; height: 20px; width: 100%;"></div> IRB Approval Date

My signature below documents that the information in the consent document and any other written information was accurately explained to, and apparently understood by, the subject, and that consent was freely given by the subject.

_____ Signature of witness to consent process	_____ Date
_____ Printed name of person witnessing consent process	

Signature Block for Children

Your signature documents your permission for the named child to take part in this research.

<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Printed name of child</div>	
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Signature of parent or individual legally authorized to consent to the child's general medical care</div>	<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Date</div>
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Printed name of parent or individual legally authorized to consent to the child's general medical care</div>	<div><input type="checkbox"/> Parent <input type="checkbox"/> Individual legally authorized to consent to the child's general medical care (See note below)</div>
<p>Note: Investigators are to ensure that individuals who are not parents can demonstrate their legal authority to consent to the child's general medical care. Contact legal counsel if any questions arise.</p>	
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Signature of parent</div>	<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Date</div>
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Printed name of parent</div>	
<div>If signature of second parent not obtained, indicate why: (select one)</div> <div style="display: flex; flex-wrap: wrap;"><div style="width: 50%;"><input type="checkbox"/> The IRB determined that the permission of one parent is sufficient.</div><div style="width: 50%;"><input type="checkbox"/> Second parent is incompetent</div><div style="width: 50%;"><input type="checkbox"/> Second parent is deceased</div><div style="width: 50%;"><input type="checkbox"/> Second parent is not reasonably available</div><div style="width: 50%;"><input type="checkbox"/> Second parent is unknown</div><div style="width: 50%;"><input type="checkbox"/> Only one parent has legal responsibility for the care and custody of the child</div></div>	
<div>Assent</div> <div><input type="checkbox"/> Obtained <input type="checkbox"/> Not obtained because the capability of the child is so limited that the child cannot reasonably be consulted.</div>	
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Signature of person obtaining consent and assent</div>	<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Date</div>
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Printed name of person obtaining consent</div>	<div style="border: 1px solid black; height: 30px; width: 100%;"></div> <div>IRB Approval Date</div>
<p>My signature below documents that the information in the consent document and any other written information was accurately explained to, and apparently understood by, the subject, and that consent was freely given by the subject.</p>	
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Signature of witness to consent process</div>	<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Date</div>
<hr style="border: none; border-top: 1px solid black; margin-bottom: 5px;"/> <div>Printed name of person witnessing consent process</div>	

Appendix E: IRB Supporting Documents

Indigenous Community Member Interview

Name:

Organization:

Location:

- What is this area like?
- Is this area different than it was in the past? How? Do you like it better now?
- Are there oil sands developments near here?
- Have you noticed any new smells in this area?
- What do you think about the Keystone XL Pipeline? Will that affect your life here?
- What do the kids think about the oil sands?
- Is the river near here?
- How has the river changed in recent years?
- Do you hunt or fish?
- How is the hunting and fishing near here?
- How has the hunting and fishing changed in recent years?
- Does anyone you know work for the oil sands?
- Have any of the changes in this area been because of oil sands?
- Does anyone you know work for the oil sands? Who?
- Have any of the facilities in town changed in recent years?
- Describe your typical day living around here.
- Would you ever work for the oil sands? Why or why not?
- Have you noticed more people moving to this area from out of town? What do you think about the new people?
- If you could, what would you do with more money?
- Do you have any further comments?
- What do you think about the Yinka Dene alliance and other anti oil sands groups?
- Will expansion of the oil sands decrease if big pipelines like Northern Gateway and Keystone XL are not built?

Oil Company Interview

Name:

Company:

Location:

- What do you do within this company?
- Where did you study in college? What was your major?
- Describe the process of being hired by your company.
- Describe your typical day.
- What drew you to this industry?
- What sort of people do you interact with in your job?
- What is the most impressive part of your company?
- What is your least favorite part of working for your company?
- In what ways is your company involved in the oil sands development?
- Do you consider yourself an environmentalist?
- Who do you see as the stake holders in your work?
- Do you think the oil sands are controversial? Why?

- Do you see any problems occurring with the Indigenous people in the area?
- What process does the company go through before implementing one method over another?
- Do you travel to the mines themselves ever during your work?
- What has your experience been with working with miners?
- What do most people say when they go to the mines?
- In your opinion, does the world need the oil sands? Why?
- Is it hard to get a job with your company? Why?
- Do you have any further comments?
- What do you think about the Keystone XL Pipeline?
- What do you think about the Yinka Dene alliance and other anti oil sands groups?
- Will expansion of the oil sands decrease if big pipelines like Northern Gateway and Keystone XL are not built?

Example Email Templates:

Dear **Indigenous Community Member**,

My name is Turner Wyatt and I am a senior environmental studies major at the University of Colorado at Boulder. I am an undergraduate currently writing a honors thesis on the effect of the oil sands industry and specifically the effect it has on Indigenous folks in Canada and the United States. I am very passionate about this topic and have been studying it for some time now. I will be traveling for the month of July, 2014 throughout Alberta and the United States to do in-depth field research, by visiting people with a diverse range of ideas about the oil sands. **Name of First Nation** has a unique relationship to the oil sands given your proximity to them, and I would be honored to have the opportunity to come and learn more about what that relationship entails. I am wondering if a stop through your area is something you would be interested in helping me organize.

My research question is: "What are the effects of the oil sands industry on indigenous people of the United States and Canada and is there a mode of operations that the industry could assume in order to avoid those effects?" Is this a question that you or anyone in your area could help me answer? This question has developed out of about six months of research, following the industry and studying the social conditions carefully. I am on fire about this topic and want nothing more than to learn as much as I can.

Please let me know at your convenience if this is something you or anyone you know would be interested in. Thank you so much for you time and considering helping me with this project. Feel free to contact me with any questions or concerns.

All Best,
Turner Wyatt

Dear **Oil Company**,

My name is Turner Wyatt and I am a senior environmental studies major at the University of Colorado at Boulder. I am an undergraduate currently writing a honors thesis on the oil sands industry. I am very passionate about this topic and have been studying it for some time now. I will be traveling for the month of July, 2014 throughout Alberta and the United States to do in-depth field research, by visiting people with a diverse range of ideas about the oil sands. I would love to make a stop by your office to chat or, if possible, go to a production facility for a tour. I am hoping to learn as much as I can about the different operations methods employed by **your company**.

Please let me know at your convenience if this is something you or anyone you know would be interested in. Thank you so much for you time and considering helping me with this project. Feel free to contact me with any questions or concerns.

All Best,
Turner Wyatt

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