Exhibit A

PhilanthropyRoundtable
STRENGTHENING OUR FREE SOCIETY

Market-Based Man

Meet Charles G. Koch, winner of the 2011 William E. Simon Prize for Philanthropic Leadership.

Cover Story from Fall 2011 issue of Philanthropy Magazine

By James K. Glassman

Charles Koch is a singular philanthropist. Clearly he is singular in the breadth of his achievements, but he is also singular in the extent to which the principles and practices that inspire and guide his giving also animate his personal life, his politics, and his business. "Charles," says Richard Fink, who has worked with him for more than three decades, "is the most consistent person I have ever met." Kim Dennis, president of the Searle Freedom Trust, says of Koch, that, when it comes to promoting free markets, "he has done more by far than any other donor." It's this integration—this intensity, based on a set of bedrock ideals—that accounts for his remarkable success in advancing social progress through what he calls the "science of liberty."

"Often people who make a lot of money feel like their philanthropy is a way of compensating for their business success," says Kim Dennis. "But Charles is not 'giving back.' He is supporting the things that made his business success possible." It's all of a piece.

The William E. Simon Prize for Philanthropic Leadership

The Philanthropy Roundtable is honored to have been asked by the William E. Simon Foundation to administer the William E. Simon Prize for Philanthropic Leadership. The foundation is named for its principal benefactor, the late financier, philanthropist, and Secretary of the Treasury, William E. Simon Sr.

The purpose of the William E. Simon Prize for Philanthropic Leadership is to highlight the power of philanthropy to promote positive change and to inspire others to support charities that achieve genuine results. The prize is intended to honor living philanthropists who have shown exemplary leadership through their own charitable giving, either directly or through foundations they have created.

The prize honors the ideals and principles which guided William E. Simon's many philanthropic initiatives, including personal responsibility, resourcefulness, volunteerism, scholarship, individual freedom, faith in God, and helping people to help themselves.

The Philanthropy Roundtable would like to thank the 2011 Selection Committee, composed of Kimberly O. Dennis, Robert P. George, Russ Hall, Adam Meyerson, J. Peter Simon, William E. Simon Jr., Thomas J. Tierney, and Donn Weinberg.

The Kochs of Kansas

Charles' grandfather, Harry Koch (pronounced "coke"), was born in Holland, and moved to the United States in 1888. Three years later, he settled in Quanah, Texas. With a population of 1,651, it was a desolate railroad depot near the Oklahoma border. Harry had been a printer's apprentice in the Netherlands, and he soon bought the town's two weekly newspapers, merging them to form the *Tribune-Chief*, a paper still published today.

Charles' father, Fred C. Koch, was born in 1900. Fred was an ambitious young man, who saw little future in dusty, hardscrabble Quanah. He left town, making his way to the Rice Institute and then the Massachusetts Institute of Technology. Fred graduated from MIT in 1922 with a degree in chemical engineering—and a turn as captain of the boxing team—before going to work for domestic and international oil companies. In 1925, he joined P. C. Keith, an MIT classmate, and Lewis E. Winkler in a firm in Wichita, Kansas. Keith left the firm shortly thereafter, which was renamed Winkler-Koch Engineering.

Business was difficult at first, until Fred developed a new and more efficient thermal cracking process for refining heavy petroleum into gasoline. A cartel of large oil refiners sued Winkler-Koch for patent infringement, crippling the company's ability to compete in the United States. (In 23 years of litigation, Winkler-Koch lost exactly one lawsuit. The verdict was reversed when it was later discovered that the judge had been bribed.) The firm turned overseas. One of its first major sales was to the Soviet Union, whose government paid Winkler-Koch $5 million to build 15 cracking units.

Koch Carbon's transfer facility in the San Francisco Bay area.

As he was building a business, Fred started to build a family. He married Mary Robinson in 1932 and had four sons. The eldest, Frederick, born in 1933, graduated from Harvard, served in the Navy, earned an M.F.A. from Yale, and has since spent his life supporting the arts. Charles was born in 1935, and the twins, David and William, arrived in 1940. Fred worked his boys hard.

"From the age of 9 on," reported the *New York Times Magazine* in 1986, "Charles worked the family ranches, digging post holes and baling hay." But, as Charles would later write, "by instilling a work ethic in me at an early age, my father did me a big favor, although it didn't seem like a favor back then."

All three of the younger sons followed their father to Cambridge, studying engineering at MIT. Charles earned three degrees, including masters in both nuclear and chemical engineering, and after graduation he joined Arthur D. Little, the Cambridge consulting firm. "I enjoyed what I was doing," he says, "and I was learning a lot." His father asked him to return to Wichita to run the company, Rock Island Oil & Refining, which held interests in ranching, refining, and crude oil gathering. Charles turned him down.

"About a year later, he called again," says Charles. "He told me he didn't have the energy he once had, and that he wanted me to come back and run the company." Charles told his father that he wanted to go to business school. "Son," Charles recalls his father telling him, "I don't think my health is that good. I would like you to come now. Either you come now or I'm going to sell the company." Charles returned to Wichita.

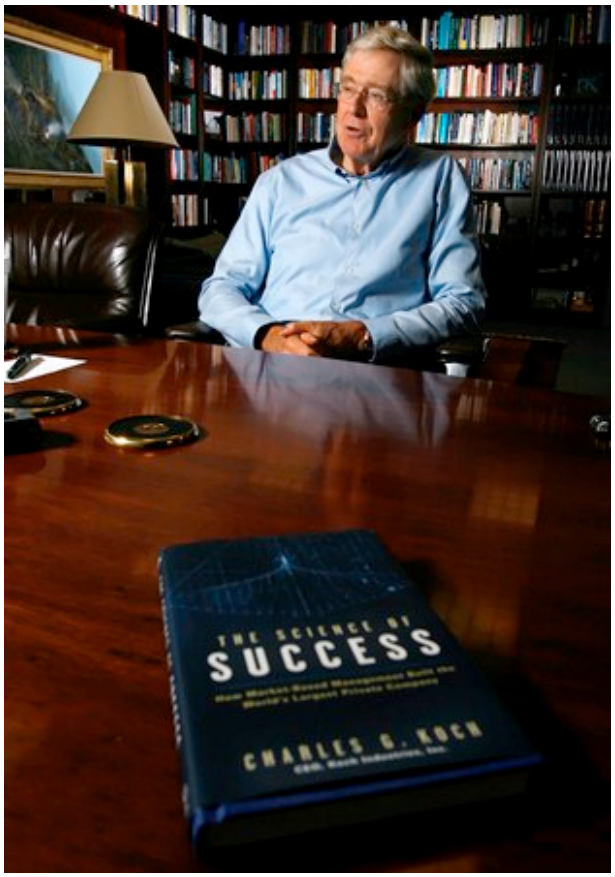
His father's first words to him: "Son, I hope your first deal is a loser. Otherwise you will think you're a lot smarter than you are." Charles' first assignment was to get a small equipment company's European operations back on track. "I was too naïve to know that I was in way over my head, so I went over and did it, but I got lucky, and that worked out." His father gave him more assignments. "He was tough. He was Dutch," says Charles. "He was great with me. He kept giving me plenty of rope to hang myself, which I did a number of times."

In November 1967, Fred went bird hunting in Utah. While in a duck blind, he began having heart palpitations. At last, a lone mallard flew overhead. Fred fired, dropping the bird from the sky. He turned to the gun-loader next to him and said, "Boy, that was a magnificent shot." He immediately collapsed, dead of a massive heart attack.

Charles was 32 years old. He instantly became chairman and chief executive officer of the company, which was later renamed Koch Industries in honor of his father.

Market-Based Man

When Charles Koch returned to Wichita in 1961, he developed an intense curiosity about many of the elemental questions of human existence. What is the nature of human freedom? How does freedom lead to human flourishing? He began to read widely and deeply, studying works of history, economics, philosophy, and psychology. In so doing, he immersed himself in what he refers to as the "science of human action." As an MIT-trained engineer, he understood the physical world to operate according to fixed, natural laws. In the course of his reading, he gradually came to discover a set of similar laws governing societal wellbeing. Those laws, he proposed, could best be understood through what he calls the "science of liberty," which applies the science of human action to social organization.



Foremost among the insights of the science of liberty is the realization that widespread and sustainable prosperity is only possible in a free society. As Koch absorbed the implications of that insight, he began to test its applicability within his business. Drawing on this integration of theoretical concepts and practical application, he developed a holistic approach to management, intended to help organizations and individuals thrive in the face of growth and change. His goal, as Koch would later write, was to "discover or develop the mechanisms that would enable us to harness the power of the market economy within the company."

The result is his trademarked Market-Based Management, the science of human action applied within an organization. Koch coined the term in 1990, but the concepts underlying the approach have been subject to continued experimentation and refinement. In 2007, he outlined the contours of the approach in his book, *The Science of Success*. Market-Based Management consists of five interdependent dimensions: vision, virtue and talents, knowledge processes, decision rights, and incentives.

The first dimension of Market-Based Management is vision. Successful companies begin by determining where and how they can best create value in society. Koch notes that it is a long-term, non-linear effort, one which undertakes a process of continuous experimental discovery. Moreover, companies that are dedicated to creating real and lasting value must be willing to embrace change. They must set priorities, anticipate competition, and commit to innovation and improvement. Equally important, adds Koch, is that they communicate the vision internally, so that it guides all of the company's activities.

When a shared vision inspires an organization, Koch explains, the virtues and talents of each individual can be harnessed to maximum effect. The second dimension of Market-Based Management works to build on vision by cultivating an ethos within the corporation. At Koch Industries, that ethos is distilled in a set of 10 guiding principles. With a shared framework of just conduct established, it then becomes necessary to ensure that every employee is placed into a position that will make the best possible use of his or her unique skills and talents.

But how to know what the best possible use of talent is? Koch observes that market economies succeed in large measure because their primary mechanisms—pricing, profit and loss—are enormously efficient at creating useful knowledge. The challenge for organizations is creating similarly efficient feedback mechanisms. That is the exact concern of the third dimension of Market-Based Management, measuring profitability wherever practical and ensuring that knowledge is optimally acquired, shared, and applied.

Property rights are an essential component of the market's knowledge creation; in the absence of private property, it is impossible to get reliable price information. Market-Based Management sees an analogous position within a company for decision rights. Rather than assets, employees "own" certain roles, responsibilities, expectations, and authorities. When these are clearly defined, employees will know what they are responsible for—and for what they will be held accountable.

The final dimension of Market-Based Management involves incentives. Koch Industries rewards employees according to the value they create for the company. It is an effort to align the interests of employees with those of the company—and those of society at large. When those interests align properly, Koch explains, the task of creating value is greatly facilitated. Individuals—incentivized to lead productive lives, realize their full potential, and find satisfaction in their work—benefit. The company benefits. And society as a whole benefits.

It is a profound mistake, Koch concludes, to treat Market-Based Management as a rigid formula. It is intended to guide thought and behavior, not prescribe a foreordained set of outcomes. He notes that the point of this approach is to provide a challenge, not a checklist. It is meant to be internalized, to become a new mental model, a new way of looking at the world. That process of internalization requires a focused and prolonged effort. It requires, writes Koch, "the most difficult and painful of all changes: A change in the way we think."

The Rise of Koch Industries

Market-Based Management grew symbiotically with Koch Industries. As Charles studied the social arrangements most conducive to human flourishing, he hypothesized that these same principles would be relevant to the wellbeing of miniature human societies, like corporations. Could Schumpeter's theory of creative destruction, Hayek's notion of spontaneous order, and Ricardo's idea of comparative advantage be integrated into a corporate ethos? If so, could that ethos be distilled, systematized, and taught to new employees? Koch was willing to try.

Flint Hills Resources Alaska (photo courtesy of Koch Industries)

For five decades, Charles has worked to build Koch Industries according to the principles of Market-Based Management. The results have validated the experiment. Koch Industries ranks second on the *Forbes* list of the largest privately held companies in America. Today, the company has annual revenues over $100 billion and employs about 67,000 people in nearly 60 countries around the globe. Under Charles' leadership, the value of Koch Industries has increased more than 2,800-fold. It now has holdings in sectors including energy, fertilizers, paper, plastics, ranching, commodity trading, finance, minerals transport, chemicals, and fibers. It produces household brand goods like Dixie tabletop products, Stainmaster carpet, Brawny paper towels, and Lycra fabrics. If Koch Industries were a publicly held corporation, it would rank 18th on the *Fortune* 500 list, just ahead of IBM.

Koch Industries has grown by continuously pursuing constructive change. It's a fundamental principle of Market-Based Management: change is the only constant in the marketplace. Success in the market goes to the individuals and groups that embrace change and work to capitalize on the opportunities it presents. As a result, Koch Industries is committed to constant experimentation, always seeking to find innovations and efficiencies before its competitors do.

Koch refers to the process as one of ongoing experimental discovery. Take, for instance, the 2005 acquisition of Georgia-Pacific, the forest-products giant, bought for $21 billion. Koch Industries identified forest products as an industry that fit the company's capabilities, in part because it had excelled at managing other natural-resource businesses. Koch therefore decided to experiment—a "modest-sized investment"—buying two pulp mills from Georgia-Pacific in 2004. Only after the demonstrable success of the purchase did Koch Industries buy the entire company.

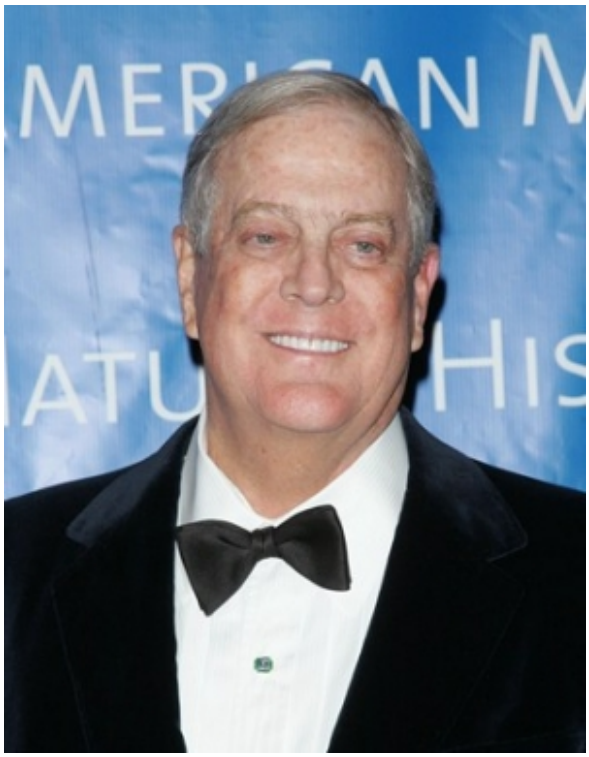
Complementing its commitment to experimental discovery, the company has a policy of reinvesting 90 percent of its profits. Of course, it helps that Koch does not have to deal with public shareholders. "By being private," he says, "we can focus almost solely on maximizing long-term value and applying our trademarked philosophy of Principled

Entrepreneurship. A public company has to cope with the extreme focus of the analysts and the equities market on quarterly earnings."

This relentless focus on maximizing long-term value has made the two principal owners—Charles and David, who serves as executive vice president—very wealthy men. (In 1983, Charles and David bought out the shares of brothers Frederick and William, among others, for $1.1 billion.) With an estimated net worth of $25 billion each, the two brothers are now tied for fourth place on the 2011 listing of the *Forbes* 400.

Market-Based Philanthropy

The staggering success of Charles and David has made possible a wide range of philanthropic achievements. In some areas, they have worked together. In particular, they have collaborated on the decades-long project of convincing policymakers and the wider public that enlarging the scope of economic freedom redounds to the benefit of all people, especially the poor. They have worked together on efforts to study how free markets contribute to free, peaceful, and prosperous societies. They have cooperated on projects to advance the ideas and policies of a principled libertarianism in public policy debates.



David Koch (Getty Images / Jim Spellman)

Of course, not all of their philanthropy aligns. In some areas, the two brothers have worked separately. David, for example, is a noted ballet enthusiast, as well as one of the nation's foremost patrons of the arts. He donated $100 million to the New York State Theater, now the David H. Koch Theater. His lifelong fascination with science led to a $20 million gift to the American Museum of Natural History, a $15 million gift to the National Museum of Natural History, and a $7 million gift to the PBS show Nova. A prostate cancer survivor since 1992, he has become one of the world's leading funders of cancer research. He has contributed $30 million to the Memorial-Sloan Kettering Cancer Center and $25 million to the M. D. Anderson Cancer Center. In 2007, he contributed $100 million to MIT to build a center for integrative cancer research, where world-class engineers work with cutting-edge oncologists and biologists to revolutionize the diagnosis, monitoring, and treatment of cancer.

Charles has tended to focus his charitable giving more narrowly. Foremost among his philanthropic accomplishments has been his long-term, strategic investment in the promotion of economic freedom through academic research, public policy, and educational and career-development programs for young people. He has funded scholarships, particularly in the field of economics; he has supported the work of Nobel Prize–winning economists like James Buchanan, Friedrich Hayek, and Vernon L. Smith. He has played a pivotal role in building some of the nation's most innovative and influential think tanks. And he has supported efforts to inspire at-risk young people to consider entrepreneurship, to teach American students the principles of limited government, and to connect recent graduates with market-oriented organizations, in an effort to launch their careers in public policy.

Decades of study and reflection have deeply informed Koch's understanding of how some societies prosper and why certain corporations succeed. They have also guided his philanthropy.

Vision

When Koch began grappling with the questions of human flourishing, two works proved especially influential: Ludwig von Mises' *Human Action* and F. A. ("Baldy") Harper's *Why Wages Rise*. They provided him with the beginnings of a theoretical framework, but perhaps more importantly, they helped provide him with a vision. Koch wanted to know where his charitable giving could create the greatest value. One answer, he decided, would be in systematically examining the question of why and how freedom, particularly economic freedom, seems to be the only route to sustainable, long-term prosperity.

Harper's book led Koch to the Institute for Humane Studies (IHS). Founded in 1961 by Harper, IHS was dedicated to "furthering the science of a free society" through research and education. Koch quickly recognized the importance of its mission, and became a major supporter of IHS starting in 1965. A year later, he joined the board of directors—on which he has served continuously to the present day. In 1973, Harper died unexpectedly from complications of an auto accident. Koch stepped in briefly to serve as part-time president.

Throughout its early years, IHS hosted academic conferences, sponsored research, and published books. Among its most influential publications was the highly respected series Studies in Economic Theory. Invited to affiliate with George Mason University, IHS left its home in California in 1985 and relocated to Virginia. From the early 1980s, IHS increasingly focused on identifying and facilitating the development of young talent interested in advancing classical liberal ideas as they entered careers in higher education, journalism, and public policy.

Today, IHS hosts interdisciplinary liberty-themed seminars for undergraduate and graduate students, offers scholarships and fellowships for graduate students interested in advancing freedom, and makes grants for up-and-coming scholars to attend academic conferences. It runs two major internship programs for students and recent graduates. One program sponsors aspiring reporters with journalism internships. The other—the Charles G. Koch Summer Fellow Program—has supported more than 900 students during eight-week internships at public policy organizations, both in D.C. and around the country.

As IHS prospered, Koch continued his efforts to promote an intellectually rigorous focus on classical liberal ideas within American higher education. During the 1970s, he funded a series of on-campus programs at leading universities. Koch hoped to create or build university centers of excellence that would bring to American higher education a sophisticated understanding of how markets work. Today, nearly 200 colleges and universities throughout the United States receive funding from the Charles Koch Foundation.

The unifying objective of these programs is the study of free societies, with the goal of discovering how economic freedom advances the wellbeing of humankind. Koch's funding helps the programs engage these questions from a variety of disciplines. At the University of Arizona, for example, David Schmidtz applies the conceptual rigor of normative philosophy to the questions surrounding political freedom. At Florida State University, economist James

Gwartney has developed the Economic Freedom of the World reports, which measure the consistency over time between national policies and the principles of economic freedom. At Brown University, political scientist John Tomasi leads the Political Theory Project, which explores classical liberal approaches to traditional and contemporary issues in political philosophy.

For decades, Koch has supported such university-based programs quietly, seeking little or no credit and drawing little attention. In May, however, one such gift ignited a brief but intense controversy. Protests flared around a $1.5 million grant from the Charles Koch Foundation to Florida State University to hire two faculty members for a new program on political economy and free enterprise. But what is really significant is not the opposition that Koch's academic efforts provoke. It is their widespread acceptance—in universities like Brown, Dartmouth, and Duke. The aim of the Koch-sponsored academic work is to encourage education and research that analyze free societies, rigorously and empirically, with a particular focus on how they advance the well-being of humankind. Koch may be convinced that freedom enhances prosperity, but he wants more research into why, and how.

Virtue and Talents

Koch, however, never intended to confine his giving to research and higher education. He understood that the principles of individual freedom were too broad and the threats that imperiled them were too immediate. He had determined that libertarians needed a strategy to bring about social change. As he later explained to historian Brian Doherty, the strategy would need to stretch "from idea creation to policy development to education to grassroots organization to lobbying to litigation to political action. The limit was talent—finding somebody who could take on some piece and have some confidence that they would make something of it."

Talent: Koch needed talented partners to help achieve his vision—partners like Ed Crane. Koch and Crane originally met in the 1970s, when Crane was active in the libertarian movement. Koch approached him about the need to connect libertarian principles with public policy proposals. As a result of their conversations, Koch's vision expanded. He realized the need for a full-spectrum libertarian think tank. Its goal would be to generate workable policy proposals that would enhance societal well-being. With funding from Koch, in 1977 the think tank began operations in San Francisco. Named in honor of Cato's Letters, an enormously influential series of pamphlets among the American revolutionaries, it was the beginning of the Cato Institute.

Cato Institute

Now a leading presence among Washington think tanks, Cato continues to assess policy proposals in light of their

implications for individual liberty, limited government, free markets, and peace. Every year, the roughly 50 scholars and fellows from Cato write hundreds of articles, essays, monographs, and books, as well as appear on television and radio programs worldwide to argue for classical liberalism. The think tank hosts hundreds of events each year, and runs an annual weeklong series of seminars at what is known as Cato University. It also manages sober publications such as *Cato Journal*, *Regulation*, *Supreme Court Review*, and the *Cato Handbook for Policymakers*, as well as extensive electronic outreach, ranging from broadcasting to social media. And all because, some 40 years ago, Charles Koch saw potential in Ed Crane.

Koch saw the same potential in Richard Fink. "There are a lot of people who have ideas but they don't know how to get it done," Koch recently told Matthew Continetti of the *Weekly Standard*. "Rich always had a sense for how to get something done and make it effective." The relationship between Koch and Fink traces back to the late 1970s, when Fink was a professor of economics at Rutgers. Fink had launched a small, on-campus center for the study of Austrian school economics, called the Center for the Study of Market Processes. He approached Koch for funding, and was invited to Wichita for an interview. The meeting was brief; Fink assumed his request would be rejected. He flew back to New York, only to discover a few days later that the funding was approved.

In 1980, Fink left Rutgers, moving to George Mason University. The center moved with him. Fink worked hard throughout the 1980s to cultivate a cadre of rising free-market economists. (In 1999, the center was renamed Mercatus, the Latin word for activity associated with markets.) But Koch and Fink had another goal in mind. Mercatus would bridge two worlds. Like many of the on-campus centers that Koch has funded, it would continue to conduct original academic research, increasing the store of human knowledge on how institutions affect prosperity. At the same time, it would take advantage of its proximity to Washington, bringing its scholarship into direct contact with public policy.

Mercatus stands on the conviction that free market principles offer a powerful framework for understanding, and tool for solving, the nation's and the world's most daunting challenges. Against the default statist assumptions of many policymakers, it proposes market-based alternatives. Mercatus scholars accordingly work on a broad range of topics, from reforming financial markets to rebuilding a post-Katrina New Orleans, from regulatory policy to economic development in Africa. They are free to pursue research that fits within the broad mission of Mercatus, balancing research with real-world, market-based solutions. The formula has yielded impressive results.

Mercatus, stated the *Wall Street Journal* in July 2004, is "the most important think tank you've never heard of." The article explained how, in 2001, the newly inaugurated Bush administration asked the public to suggest which federal regulations were in most urgent need of reform or repeal. Based on dozens of academic studies of regulations, Mercatus submitted a list of 44 candidates. When the White House released the 23 regulations on which it planned to focus, Washington insiders were astonished. It was considered a real accomplishment to get even one proposal green-lighted; not a single proposal from the National Association of Manufacturers, for example, made the list. The White House adopted 14 of Mercatus' proposals.

Knowledge Processes

Market economies succeed largely because they are well-equipped to produce useful knowledge. Profit mechanisms and free speech provide critical feedback signals that allow participants to assess, reconsider, and improve their performance. Mercatus clearly had demonstrable success in having its policy proposals adopted by the Bush administration. But, points out Koch, philanthropy in general lacks the price signals that offer a critical feedback mechanism in the for-profit sector. So how to tell if you are succeeding?

"Unfortunately," says Koch, "either in government or in the nonprofit world, people tend to measure what's easy to measure." Think tanks brag about how many op-eds their scholars have published; free-market programs at universities point to how many students take their courses. "For example, let's say you have a magazine," says

Koch. "You have an article, and so many people read it. Well, that's fine and good, but that's a first step. That's a starting measure. The real measure is: Did it change behavior?"

The objective is "having a society that has economic freedom and prosperity." It can best be achieved by measuring the outputs tied to that objective. For activities—like philanthropy or politics—that are largely insensitive to price signals, the constant temptation is to measure inputs. That temptation must be overcome through diligent self-discipline. The vision must be the goal; activity cannot become its own end. With the vision in focus, says Koch, "everything flows from that. When you have that, you're in a position to get good health, a good environment, longevity, a high level of happiness and fulfillment, and all of the things most people would say constitute a good society."

Take Youth Entrepreneurs (YE), founded in 1991 by Charles and Liz, his wife of 39 years. Initially an eight-week program at Wichita High School North, YE has since grown into a two-semester entrepreneurship course taught at 28 high schools throughout Kansas and Missouri, as well as in 10 schools in Atlanta. The program is open to all students, but is targeted toward at-risk youth. In the 2010–11 school year, more than 1,100 students completed the class.

Youth Entrepreneurs alumni with YE chairman Liz Koch

YE is intended to teach the fundamentals of entrepreneurship with real-world, hands-on experiences. During the two-semester sequence, every student writes a business plan and is encouraged to use it as the basis for launching a business. All participants receive academic credit for successfully completing the class, and alumni have opportunities to participate in internships at area businesses as well as receive venture capital and scholarship funding.

But to Koch the greatest concern is the outcomes. And the outcomes at YE align with his overarching vision of a more prosperous and peaceful society. Compared to their peers, YE alumni have been shown to have better business skills, to be more likely to pursue higher education, less likely to accept welfare, and more likely to start a business.

The success of YE led Koch to help launch the Bill of Rights Institute (BRI) in 1999. Koch had come to believe that that too few primary and secondary school teachers had the necessary background to convey the principles of

limited, constitutional government. He decided to create an organization that would improve American civic education, one that would, in the words of Richard Fink, "help students increase their awareness and knowledge of the liberties guaranteed in our founding documents and their relevance to modern society."

BRI provides a number of programs for both students and teachers. In 2006, it launched an annual "Being an American" student essay contest. This year's question: "How does the Constitution establish and maintain a culture of liberty?" High school students are eligible to submit up to 1,000 words on the topic, competing for one of 15 cash prizes. Since its inception, more than 80,000 students have participated in the contest.

BRI also works with educators, who may attend its seminars on teaching founding principles or make use of its instructional materials. BRI offers professional development to more than 2,000 teachers annually, providing 16 sets of curricula for middle and high school teachers and offering seminars (and webinars) intended to increase knowledge of the Constitution, the Bill of Rights, and the principles of limited government. Through its teacher development programs, BRI has influenced more than 17,000 educators—thereby reaching, by its estimate, more than 1.8 million students.

In his most recent effort to support young people, Koch launched the Koch Associate Program (KAP) in 2006. KAP works with early career college graduates, helping to place them four days per week in full-time positions at market-oriented nonprofits in the D.C. area (The Philanthropy Roundtable has employed several Koch Associates.) One day every week, the program's participants gather to read and discuss some of the seminal writers on free-market economics, such as Hayek and Mises. The hope is that they will take the ideas and apply them to their nonprofit work. "We start with a deep dive to understand markets," says Fink. "We then try to translate our findings into superior management systems, to capture the productive power of markets within nonprofit organizations." When KAP greeted its first class in 2006–07, it consisted of 16 associates paired with seven organizations. Since then, the program has grown steadily, with more than 380 KAP participants having worked in about 70 nonprofits, both in D.C. and around the country.

Being an American Essay Contest winners with Juan Williams and John Stossel

Decision Rights

For all of his work shaping future generations of free market leaders, Koch sees a more immediate problem: Right now, the United States is "losing ground." This political moment is something of a test, one that is challenging the nearly half-century of effort—and many millions of dollars—he has invested in the promotion of economic liberty. "Will this country be a free and prosperous society based on the Bill of Rights," he asks, "or will it become a statist

or collectivist society in which people are impoverished because one person is pitted against another as everyone attempts to gain by redistribution rather than producing goods and services that make people's lives better?"

Koch points to the findings of the annual Economic Freedom of the World report published by the Fraser Institute, another organization that he supports. Across a variety of key indicators—government spending and taxes, business regulation, property rights, monetary policy, and trade—the United States appears to be retreating from the vanguard of economic freedom. In 2000, the index ranked the United States the third-most free and open economy on earth, behind only Hong Kong and Singapore. In the latest study (based on 2009 data), the nation stands in 10th place. Koch fears we will soon fall much further. "We're now less than a tenth of a point above Cyprus, in 18th place," he says. "If we lose another half-point, we'll be tied with Kuwait for 47th place. If past correlations hold true, this will be devastating for American prosperity."

Given the urgency of the political moment, Koch has continued to supplement his philanthropy with contributions to advocacy organizations. Such support represents an application of his notion of decision rights. In order to achieve his vision, he is committed to placing the right people in the right roles, based on their interests, values, and capabilities. For some of the people he works with, that will mean operating in the world of nonpartisan nonprofits. For others, it will mean a more direct engagement with the world of politics.

It is not, of course, a new departure for Koch. For many years, he has supported a range of advocacy organizations, especially 501(c)(4) entities. (Unlike 501(c)(3) nonprofit public charities, (c)(4) entities may engage in lobbying, participate in political campaigns, and advocate for specific pieces of legislation. Funds donated to (c)(4) entities are not tax deductible as charitable contributions.)

In 1984, Charles Koch, Richard Fink, David Koch, and Jay Humphreys launched the Citizens for a Sound Economy Foundation (CSEF), a 501(c)(3) entity originally headed by Fink. An affiliated (c)(4) group, Citizens for a Sound Economy (CSE), was set up afterwards, devised with the goal of cultivating grassroots engagement, supporting the volunteer activities of individual citizens who wanted to make a public case for lower taxes and reduced spending. "What we needed was a sales force that participated in political campaigns or town hall meetings, in rallies, to communicate to the public at large much of the information that these think tanks were creating," David Koch recently explained to the *Weekly Standard*'s Continetti. ("Mary Kay meets von Mises," as Continetti pithily put it.) It proved a remarkably effective model. CSE racked up an impressive number of achievements, perhaps most notably playing a key role in the 1993 defeat of President Clinton's proposed BTU-based energy tax.

In 2004, CSEF and CSE formally discontinued their affiliation. CSE, the (c)(4) group, became associated with FreedomWorks, another (c)(4) entity that had been founded in the late 1980s and was headed by former House Majority Leader Dick Armey. Meanwhile, CSEF, the (c)(3) organization, was renamed the Americans for Prosperity Foundation (AFPF), chaired by David Koch. AFPF in turn created a new affiliated (c)(4) entity, Americans for Prosperity (AFP).

Charles and David remain committed to both AFPF and AFP, although they do not now nor have they ever supported FreedomWorks. AFP is a (c)(4) group dedicated to educating and mobilizing American citizens. It focuses on promoting fiscal responsibility (chiefly through cutting taxes and reducing spending), removing needless barriers to business formation, and restoring a sense of balance to the tort system. At the same time, AFPF conducts research and policy analysis, offers grassroots education, and provides news on the state of freedom and free-enterprise in America. To date, AFP has motivated some 1.75 million Americans to help organize events, write letters to the editor, and petition their representatives to uphold freedom and prosperity.

Those numbers belie the frequently heard complaint that the Koch brothers use (c)(4) entities like AFP to "astroturf" the political landscape. "That's nonsense," Fink said during a recent interview with the *Washington Examiner*. "It's clear from the very personal and passionate expressions of concern at these events that they haven't been scripted or

orchestrated. Tea parties reflect a spontaneous recognition by people that if they do not act, the government will bankrupt their families and their country. They're absolutely right about that. Now, if our work over the past 30 or 40 years has helped stimulate some of those citizens who are becoming more active, that's great, but it's a far cry from pulling strings."

As with his philanthropy, Koch's political funding takes a variety of forms. During the 2010 elections, Koch donated to such victorious Republican Senators as Rob Portman of Ohio and Marco Rubio of Florida. Koch Industries backed winning Gov. Scott Walker of Wisconsin. No surprises there.

Other activities are perhaps more unconventional. He inaugurated the Koch Seminars, which started nearly a decade ago in Chicago. Twice each year, Koch Industries convenes some of the nation's leading philanthropists, thinkers, and business leaders in order to share ideas for advancing free-market policies. "This is a gathering of doers who are willing to engage in the hard work necessary to advance our shared principles," wrote Koch in the invitation letter to a recent event.

Names of participants in the seminars are private, but published reports list Gov. Bob McDonnell of Virginia, Supreme Court Justices Antonin Scalia and Clarence Thomas, and Republican House leaders Eric Cantor and Paul Ryan as among the more than 200 attendees at one recent conference. The *Weekly Standard* reports that, at the end of each seminar, participants would pledge money to free-market initiatives. (One attendee told author Continetti that "the Kochs were among the best political fundraisers he'd ever seen.") The seminars represent another application of Koch's notion of decision rights: ensuring that the right people are in the right roles at the right times.

Whether the cause is philanthropic or political, there is an essential unity to what Charles Koch will fund. The overarching purpose of his giving is to increase the freedom of individuals, within a beneficial framework of clearly articulated and rigorously enforced rules of just conduct, so that people may pursue their own interests. That, he believes, is the only truly sustainable way to promote ongoing societal wellbeing.

Incentives

Just as he has an overarching purpose, Charles Koch has an overarching process for both his philanthropic and political funding. That process was developed through his study of the writings of Joseph Schumpeter, who coined the term "creative destruction." It was refined at Koch Industries, which developed the discipline to sell operations when they believed the opportunity cost was greater than the value created. ("Working on profitable activity is wasteful," he has written, "when there is another, even more profitable activity that can be performed instead.") Koch can name dozens of businesses from which the company has exited, in fields such as animal feed production, natural gas liquids processing, and transportation. One notable example is Koch Industries' crude oil gathering business, which grew from modest beginnings to the largest system in North America. It was sold in 1998.

"It is absolutely critical," says Koch, to exit from businesses that no longer have the ability to create superior value. "If you do not, then you tend to focus on the problems. And with creative destruction and the nature of the experimental discovery process in the marketplace, you have to nurture your winners constantly—whether the winners are the people, the processes, the products, the businesses."

Koch applies the same experimental discovery process to the nonprofits he funds. For example, his first experiment in institution building was the Center for Independent Education, which conducted research on the relative performance of public and private schools. It was headed by Robert Love, the head of a private preparatory school in Wichita and a longtime friend of the Koch family. Koch supported the organization for years, but, as Brian Doherty writes, it "ended up being folded into first the Institute for Humane Studies, then Cato, then faded away." Koch had come to recognize the Center for Independent Education as a sunk cost. He stopped his funding stream,

and allowed the market to run its course.

Koch is willing to play a key role in the founding of institutions, when he sees an opportunity and believes there is a real market opening. He can be a leading supporter in an organization's early years. But a key element of the experimental discovery process involves the deliberate decision to step back, compelling the organization to strike out on its own. If a group is creating real value in the marketplace of ideas, other funders will step forward to support it. Since its founding in 1999, for example, the donor base of the Bill of Rights Institute has grown from a few individuals to more than 3,000 funders. Koch was indispensable to the creation of the Cato Institute; today, however, he is one of roughly 20,000 supporters. Together with its 501(c)(3) counterpart, Americans for Prosperity has received financial support from more than 80,000 citizens in all 50 states.

"I don't think many people understand how little these institutions depend on the Kochs' continued generosity," writes Will Wilkinson—who spent more than a decade as a researcher at Cato, Mercatus, and IHS—in the *Economist*. "Of the brothers, Charles is the ideas man, and his idea has always been to build a set of complementary institutions which, once mature, can thrive without his (or his brother's) financial help. That said, I have no doubt that these institutions either would not have existed, or would have existed in a very different form, were it not for the Kochs' institution-building philanthropy."

For Koch, it is a matter of creating the proper incentives. At the outset of the experimental discovery process, it is appropriate and perhaps necessary to fund a promising nonprofit by oneself. But to remain, over long periods of time, the sole source of support for a nonprofit is to create a set of perverse incentives. It encourages the nonprofit to think of the donor as a customer rather than an investor—and in so doing, it distracts from the overarching vision. By drawing down his support, he is committing the nonprofits he has built to engage more fully with their mission, and to remain focused on the goal of increasing knowledge and activity geared toward greater prosperity.

Looking Forward

When I ask Koch what kind of impact his work has had on America, he hesitates. "When I started trying to do anything, to have a magazine or a seminar, we'd be lucky if we could get half a dozen professors or scholars there." Since then—through the Institute for Humane Studies and hundreds of university programs; through Cato and Mercatus; through Youth Entrepreneurs, the Bill of Rights Institute, and the Charles Koch Foundation; through Americans for Prosperity and the Koch Seminars—he has labored to build up cadres of freedom advocates. In all, concludes Koch, it is a movement that "we think has helped keep the United States relatively free and prosperous."

Charles Koch turns 76 in November. He wants the United States to remain free and prosperous for generations to come, and he wants the Charles Koch Foundation to outlive him by many years. "There are no sunset provisions," he says, "but we're not holding back on spending money." Is he worried that the foundation will diverge in the future from the clear intent and strategy he has laid down? He is not. "The main thing is to have the right board, and I have people on the board who are very dedicated to these ideas, including my family." On the other hand, he favors "preventing the leader of a nonprofit from becoming the de facto owner by packing the board with cronies and then co-opting them. We have seen this happen numerous times, and when it does the nonprofit becomes run for the benefit—ego, power, financial, other—of the leader, rather than to advance the mission." While the board of his foundation cannot be accused of cronyism or of inflating the ego of one of the least visible multi-billionaires in America, it is flush with family members. In addition to Koch himself, the board is composed of his wife, Liz Koch; his two children, Elizabeth Robinson Koch and Charles Chase Koch; and Richard Fink, who has been a board member for 20 years.

In the end, the legacy almost certainly will depend not simply on board members and family, but on the organization Charles Koch has built. "We have a very substantial staff," he says, "and they're developing new talent all the time who are very dedicated and capable. And we have a detailed vision and philosophy statement that everybody who is in a position of authority has signed off on."

"It won't be exactly the same as when I'm here," he adds, but "we're transferring more and more decision-making to others already, and they probably will do a lot better when I'm not involved." Don't count on it. Koch is the dynamo, the animating force in promoting free-market principles and policies in America. His power comes from a deep unity of purpose, an integration of life and work, reflection, and conviction. As Kim Dennis says, "Charles believes this stuff in his bones."

James K. Glassman is the founding executive director of the George W. Bush Institute in Dallas. He was formerly a senior fellow at the American Enterprise Institute and served as Under Secretary of State for Public Diplomacy and Public Affairs from 2008 to 2009.

Exhibit B

From the San Francisco Business Times
:http://www.bizjournals.com/eastbay/stories/2008/07/14/story10.html

SUBSCRIBER CONTENT: Jul 13, 2008, 9:00pm PDT Updated: Jul 10, 2008, 4:20pm PDT

Tesoro wins contract to ship petroleum coke from Pittsburg to China's Sinochem

Jessica Saunders

Tesoro Corp. has inked a deal with global conglomerate Sinochem Corp. to sell it 150,000 tons of a new, higher grade of petroleum coke, an oil refining byproduct.

The value of the contract wasn't disclosed. Petroleum coke can be used as fuel in the manufacturing of steel, titanium and aluminum, and as material for manufacturing everything from flat-screen TVs to charcoal briquets.

Tesoro, which operates the Bay Area's second-largest refinery in Martinez, agreed in May to sell Sinochem 150,000 tons of coke after a three-year period of negotiation, said Brad Nail, Pittsburg economic development director. The first shipment of about 30,000 tons left Pittsburg June 24.

Sinochem, one of China's largest companies, is involved in logistics, industrial investment, chemicals, rubber, petro�chemicals and energy. Pittsburg city leaders made three trips to Shanghai and hosted Sinochem officials once to help Tesoro win the coke contract, Nail said.

The deal is for a grade of petroleum coke called "delayed," which is granular like sand, said Mike Marcy, Tesoro government and public affairs manager. The Martinez refinery used to produce a lower grade of coke, a very fine grain called fluid coke, until a recent $100 million upgrade resulted in the higher-quality byproduct.

Sinochem is expected to follow up the initial coke contract with future orders, Nail and Marcy said.

The delayed coke product will be trucked from the refinery to a storage facility in Pittsburg operated at Koch Carbon LLC, and then shipped through Koch Carbon's terminal, Marcy said. Meanwhile, the Pittsburg property where Tesoro used to store fluid coke, which is adjacent to Koch Carbon, will be shut down by next year under an agreement with the city.

The city wanted Tesoro to close the 13-acre facility at 595 E. Third St. because of the black dust it generated, Nail said. When the coke was kept in uncovered piles, high winds picked it up and blew it over the city, which was trying to redevelop the downtown and waterfront.

As Pittsburg's residential neighborhoods expanded, they got closer to the Tesoro storage facility and its dust, Nail said. "We told them we couldn't tolerate open piles of coke."

Tesoro had earlier agreed to put up higher screens around the storage facility, to screen the coke when it was loaded aboard bulk container vessels and to suspend operations during periods of high wind, Marcy said. Ultimately it agreed to close the Pittsburg operation by second quarter of 2009.

Koch Carbon expanded its storage facility and Tesoro contracted to use it for delayed coke shipments, Marcy said. The company is reviewing possible uses for the waterfront land after that deadline.

"We have yet to conclude what the potential future use is going to be," Marcy said. "To satisfy our agreement with the city, we will no longer transport coke through that facility. We have a fiduciary duty to our shareholders to determine what the highest return would be of other potential uses of our property, and while we do that, we also want to, to the extent we can, work cooperatively with the city of Pittsburg on how they would like to see our property utilized in the future."

The city hopes to develop a mixed-use project on half the land and leave the rest industrial, Nail said.

Tesoro Corp.

NYSE/TSO Business: Petroleum products refiner and marketer
Headquarters: San Antonio, Texas
Founded: 1968
Chairman, president & CEO: Bruce A. Smith
Employees: 5,500
2007 revenue: $21.9 billion
2007 net income: $566 million
Address: 300 Concord Plaza Drive, San Antonio, Texas 78216
Phone: 210-283-2000
Web: www.tsocorp.com

jsaunders@bizjournals.com | 925-598-1427

Exhibit C

DISCOVERY

THE QUARTERLY NEWSLETTER OF KOCH COMPANIES

APRIL 2008

In the Black

"What customers value," Charles Koch reminds us, "is constantly changing."

That's why, no matter how successful a company may be, to stay in business it must improve and innovate.

The same is true for individual plants and facilities, even award-winning ones such as Koch Carbon's Bay Area Bulk Transport facility in Pittsburg, Cal.

The BABT, located near San Francisco Bay, set new standards for the industry when it opened in 1998. California's environmental authorities have called it "the best of its kind in the world."

The BABT handles about 500,000 tons of petroleum coke per year. Most of it is shipped to Asia or Europe and used to fuel utility plants, steel mills, aluminum producers and cement manufacturers.

Principle 5

In late 2005, Tesoro and Koch Carbon discussed how to handle a significant increase in pet coke output from Tesoro's nearby Golden Eagle refinery in Martinez.

There was just one problem: Tesoro's projected volume – one million tons of pet coke per year – would require a tripling of capacity at the BABT.

"Golden Eagle is their largest refinery, and the planning required to meet their request was enormous," said Pat Baldwin, vice president of operations for Koch Carbon.

"We had to consider engineering challenges and the need for various permits. We had to organize an internal team and evaluate the best external contractors.

"Managing our communication became even more essential. Not just with our customer, but with our contractors, management and shareholders.

"Once the expansion was underway, we also had to innovate, because there are always conflicts or problems you can't anticipate."

Those unexpected problems included sharply escalating steel prices, limited availability of iron workers and delays in getting approval for paint colors from the city government.

"If the team had not done such a good job of responding to these challenges, we might have incurred $7-$10 million in cost overruns."

Out of the barn

Among the innovations at the expanded facility is a new design for the "barn" where pet coke is stored.

"Because the water table is so high," said Scott Lebbin, Koch Carbon's West Coast manager, "we had to rethink our design. We figured out it was better not to excavate a central tunnel, but to put more of a trench on the side of the barn farthest from the river.

"Now, instead of drawing down coke through holes in the floor, we actually push product to hoppers on the side with the trench. This arrangement not only avoided water table issues, it made us more efficient."

"Scott and the team did a wonderful job," said Baldwin. "But what's really impressive is that they also managed to achieve California VPP STAR status (that state's highest safety designation) during the expansion process.

"We celebrated that award on January 23 and completed the expansion ahead of schedule and under budget on March 18, so our year is off to a great start." ■

THIS ISSUE...

Letters may be edited for length or clarity

I am a wife, mother and homemaker.

The January 2008 "Perspective" editorial in *Discovery*, written with stark sobriety, mirrored thoughts many of us have about the direction politicians are leading our great nation.

We are living in a culture with an entitlement mindset. Politicians expertly reel in these voters, hook, line and sinker, undermining the very principles and values upon which our country was founded.

I wholeheartedly agree it is the voter's responsibility to self-educate. This is increasingly important because politicians' decisions are eroding our liberties in an insidious and sometimes irreversible way.

We must be better watchdogs.

Amy Baxt
Wichita, Kan.

Is Mr. Koch's editorial from the January 2008 *Discovery* available electronically? I'd like to share it with friends.

Ronnie Parkhurst
Flint Hills Resources
Longview, Texas

You are always free to share *Discovery* with family and friends. Recent issues of *Discovery* are posted at www.kochind.com along with Koch Industries' overview brochure and annual EH&S and community stewardship report. Under Newsroom, click on Publications, then enter your name and hometown.

Fiesta de los Niños **– For 16 years, Flint Hills Resources has been the leading sponsor of this fundraiser benefiting Driscoll Children's Hospital in Corpus Christi, Texas. During that time, FHR has helped raise $4.1 million. This year's event, held Jan. 30, raised a record $585,000.**

I want you to know how much I have enjoyed your book, *The Science of Success*, and catching up on the progress you've made in articulating the practice of MBM® and its underlying concepts.

I'll be sharing your book with our executive team.

Julie Gomez
Dir., Corp. Development
Granite Construction, Inc.
Watsonville, Calif.

On behalf of KSU, I want to thank you for your support of Diversity Recruiting – Project IMPACT initiatives.

We are very optimistic about our partnership with the Foundation and Koch Industries, Inc.

All the best,

Jon Wefald, President
Kansas State University
Manhattan, Kan.

In February, KII and the Fred C. and Mary R. Koch Foundation announced a total of $400,000 in grants to support diversity initiatives at K-State. This funding will promote the recruitment, enrollment and mentoring of multicultural students.

Hazel Nash, a 2006 graduate of Kansas State University, is a chemicals market analyst for Flint Hills Resources. She is also Koch Industries' diversity coordinator for KSU programs, including Project IMPACT.

DISCOVERY
APRIL 2008 VOLUME 14 NUMBER 2

Questions? Comments? Reprints?
Contact: Rod Learned
(316) 828-6136
learnedr@kochind.com

Publication design:
Deanna Bauman
Koch Creative Group

Brussels, Belgium – On Feb. 6, Koch Industries' chairman and CEO, Charles Koch, led a day-long mentoring session for Georgia-Pacific business leaders responsible for GP's consumer products businesses in Europe, the Middle East and Africa.

One of the objectives of the session was to help these leaders better integrate the theory and practice of Market-Based Management®.

"The purpose of MBM®," Koch reminded them, "is to focus on results, not tools."

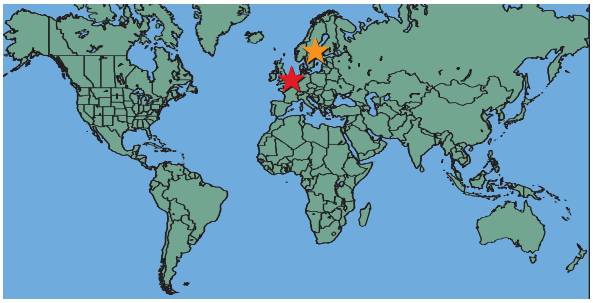
About 80 Georgia-Pacific employees attended the event.

The following day, Charles Koch traveled to France, where he visited GP's R&D facility and paper mill in Kunheim.

Karlstad, Sweden – Christopher Columbus needed just three ships and a little more than two months to make it from the Old World to the New in 1492. In contrast, it took 55 ships 18 months to transport all the parts needed to build the new #7 paper machine at Georgia-Pacific's Wauna, Ore., facility.

Most of the new machinery was shipped from Karlstad, in south-central Sweden (about halfway between Stockholm and Oslo, Norway), to the Pacific Northwest, and then loaded onto barges for the trip to Wauna.

After being assembled by a team that included more than 700 construction workers, the Karlstad parts completed a $200 million, three-story, through-air dried towel machine that has transformed the way GP makes Brawny®, its marquee paper towel product.



This 240-ton dryer unit (left) was manufactured in Sweden...

...then installed (above) at Georgia-Pacific's mill in Wauna, Ore.

The new Brawny has been redesigned to be softer, thicker, and more cloth-like, combining the classic Brawny strength so it is durable enough to clean a greasy skillet and also soft enough to wipe a child's face. GP is supporting the re-launch of Brawny with a national marketing effort that combines advertising, sampling, coupons and more. The new Brawny began shipping to retail customers on Feb. 4, and appeared on shelves nationwide by mid-March.

Turning Up The Heat

Although there are plenty of questions about the long-term effects of climate change and how best to deal with it, there can be little doubt that a concerted effort is underway to promote climate change legislation.

If most politicians have their way, we will be facing plenty of new taxes, new fees and new regulations.

Proposals scheduled for consideration by the U.S. Congress this year, most notably the Lieberman-Warner Climate Security Act, are unprecedented in their scope and in their probable effects.

Estimated costs of Lieberman-Warner climate change bill by 2030

Up to:

- **4 million jobs lost**
- **145% higher gasoline prices**
- **129% higher electricity costs**

Source: NAM and ACCF

Many observers are convinced these fees and policies will cripple America's economy, eliminate jobs and increase consumer costs for a wide variety of goods and services.

Independent assessments of the cost of implementing the Lieberman-Warner bill are staggering.

The National Association of Manufacturers and the non-profit American Council for Capital Formation predict at least 1.2 million and perhaps as many as 2.3 million jobs lost; between $5 and $8 trillion in lost Gross Domestic Product; a 15 percent increase in fuel prices; and, a 35 to 65 percent increase in electricity costs – all within seven years.

Estimates from NAM and ACCF through the year 2030 are even more grim (see sidebar).

These consequences are not the end of the story. The Lieberman-Warner bill would also impose significant costs on the poor and those with fixed incomes.

Seniors, such as those who rely on Social Security and Medicaid, would have little or no way of offsetting these higher costs, which are predicted to increase as much as $6,752 per household per year.

Big CO_2 cuts = big job cuts

Biased, bogus or both?

It is easy to argue that such projections are just speculation. But the reality is that we are already seeing similar effects from recent U.S. legislation, including the Energy Act of 2007.

Thanks to legislation that has already been passed - such as the mandate for increased production of corn-based ethanol – Americans have already seen sharply higher prices for milk, meat and many other food products.

Meanwhile, other government policies have caused commodity prices to soar, not only for grain, but for metals and crude oil.

Instead of taking a carefully reasoned and truly scientific approach to understanding climate change, many politicians and the media have already rushed to judgment and started promoting their supposed "cures."

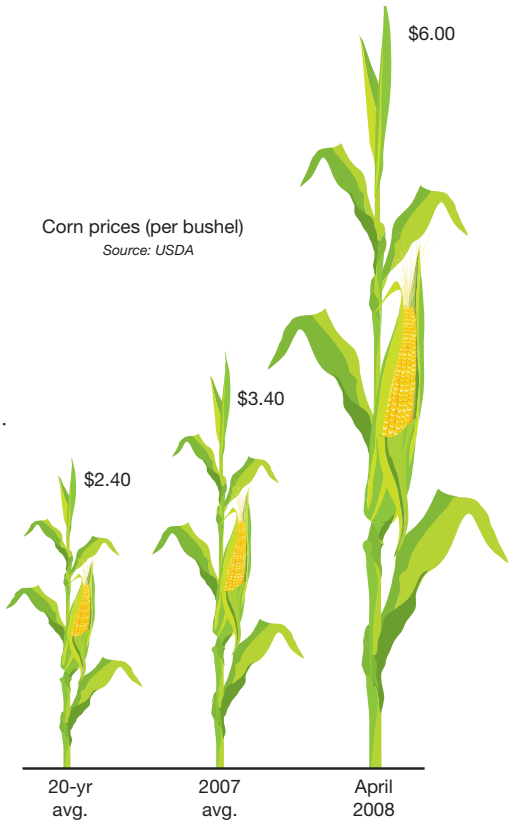
Target: CO_2

All three leading presidential contenders have endorsed significant reductions in U.S. carbon emissions. Their targeted cuts range from 65 to 80 percent.

That may sound appealing, but it would require the U.S. to reduce its CO_2 emissions to the current levels of countries such as Belize, Jordan, Haiti, Mauritius and Somalia.

Are such reductions truly possible? In the U.S., an 80 percent reduction in CO_2 emissions would require per capita emissions even lower than those in Colonial times.

Bottom line: "80 by 50" (reducing carbon emissions 80 percent by 2050) is a nice slogan, but would require a harsh drop in the standard of living for almost all Americans.



Climate-related policies have dramatically increased the cost of corn and many other commodities.

Double standard

Developing countries that are competing with the U.S. and Europe, such as China and India, have made it clear they have no intention of passing restrictive climate change laws. This gives them an enormous economic advantage over any country willing

Renewable energy sources are often expensive and unreliable. Texas, which generates more wind power than any other state, had an electricity emergency in February when demand jumped just as wind generation dropped by more than 80 percent due to calm winds.

to hamstring its own productivity.

The irony in all of this is that there is little, if any, evidence that the U.S. can come close to meeting sharply lower targets for emissions.

But in trying to do so, there will unquestionably be enormous economic consequences.

Because of pressure from special interests, legislators have rushed to pass drastic climate change proposals. This is in spite of the fact that their own constituents are saying they have other priorities, including the economy, access to healthcare and quality education for their children.

> ***Reducing U.S. CO_2 emissions by 80% would require per capita emissions lower than those in Colonial times.***

Several proposals calling for a "cap and trade" (which essentially means cap and tax) on the use of fossil fuel would limit or ration the use of coal, oil and natural gas, curtailing supplies and increasing costs.

When you consider that fossil fuels supply 85 percent of America's energy needs, including gas, electricity and home heating oil, the effect of such proposals becomes enormous.

When surveyed about energy use, most Americans say they support a variety of energy options. Those options include a mix of fossil fuels, nuclear energy and renewable energy sources such as wind and solar.

Like hybrid cars, which cannot run without gasoline in the tank (not to mention fossil fuel to generate the electricity needed to charge their batteries), we are far better off with a balanced approach.

Predictions

Interestingly enough, both opponents and proponents of climate change legislation seem to agree on one thing: the U.S. economy will suffer as a result of the legislation currently under consideration.

The difference is that proponents believe the politics of today should outweigh the economic implications of tomorrow. They believe we should sacrifice our economy by cutting back on greenhouse gas emissions in hopes we will "save the planet."

Contrast that with what Alan Greenspan, former chairman of the Federal Reserve, has said: "Cap-and-trade systems or carbon taxes are likely to be popular only until real people lose real jobs as their consequence.

"There is no effective way to meaningfully reduce emissions without negatively impacting a large part of an economy. Jobs will be lost and real incomes of workers constrained."

Managing America's energy policy is not an easy task, but when millions of jobs and hundreds of billions of dollars are on the line, policy-making should involve more than knee-jerk reactions to questionable claims.

> ***"Tackling global warming by trying to lower emissions" will cause "real people [to] lose real jobs."***
> ***- Alan Greenspan***

One of the best ways to keep politicians from making bad decisions is by using the power of the ballot box. You owe it to yourself, and to your family, to inform yourself about energy issues and then support those candidates who support a realistic energy policy.

If you would like to learn more about energy balance, climate change and other energy issues, here are some helpful resources:

www.ncpa.org/globalwarming

www.heartland.org

http://instituteforenergyresearch.org

www.texaspolicy.com/publications.php?cat_level=84

Biomassive Energy Source

The United States Department of Energy estimates that 2.4 percent of America's electricity is generated from so-called renewable sources, such as wind, solar and geothermal energy.

Leaf River, Miss. – Many GP plants produce up to 70 percent, or more, of their electricity from renewable sources.

The DOE also calculates that the largest renewable energy source – by far – is woody biomass, which includes wood waste and related byproducts.

How big is this energy source compared to other renewable sources? According to the DOE, woody biomass accounts for 48 percent more electricity generation than wind power, and about 80 times more electricity than solar sources.

Renewable leader

Using woody biomass to generate electricity is not a technology we have to wait for. Georgia-Pacific is responsible for more than 10 percent of all the "green" or renewable biomass electricity generated in the U.S. from this source.

Many of GP's largest facilities self-generate as much as two-thirds of their electricity from woody biomass. GP's Leaf River, Miss. plant, acquired by Koch Cellulose in 2004, leads the way by generating almost all of its electricity this way.

Altogether, more than half of the energy required for Georgia-Pacific's operations comes from renewable biomass fuels. GP facilities generate an estimated 169 billion BTUs of energy from renewable sources.

That is enough energy to heat 3.38 million households for an entire year. Or, put another way, more than sufficient for all the residents of New York City, Atlanta and Wichita combined.

Recyling since 1930s

Recycling is another "green" concept that GP has been using for decades.

As Wisconsin Gov. Jim Doyle has noted: "Georgia-Pacific has been a national leader in recycling for more than 70 years, starting in the 1930s when its Broadway facility in Green Bay began collecting wastepaper and using recycled fiber to make tissue products."

March 26 – Gov. Jim Doyle (left) helped celebrate a new paper recycling system for GP's Broadway facility in Green Bay, Wisc. The facility converts more than 475,000 tons of wastepaper into popular tissue products.

Gov. Doyle made those comments at a March 26 celebration of GP's $50 million investment in a new paper recycling system in Green Bay.

> **GP provides enough electricity from renewable sources to power more than 3.3 million households.**

Thanks to that system, water use at GP's Broadway facility will be reduced by up to 1 million gallons per day, average energy use will drop by 2 percent and the amount of solid waste sent to landfills will plummet by 50 tons per day.

Over the past several years, GP has invested a total of more than $100 million to update equipment at the Broadway mill, where recycled wastepaper is turned into branded products such as Angel Soft®, Soft N' Gentle® and So-Dri® tissues.

Projects such as these not only benefit the environment and the bottom line, they help communities that are concerned about employment. More than 160 GP jobs in Green Bay will be maintained thanks to the new recycling system, with at least 100 more contracted through local companies. ■

Congratulations

Congratulations to Marc Hoss, reliability center manager for Flint Hills Resources' Pine Bend Refinery. Hoss was voted Person of the Year by Coking.com, a global organization devoted to sharing best practices among those who operate delayed coker units at refineries. Hoss was keynote speaker at a ceremony held in Edmonton, Alberta, Canada in March.

Noteworthy

Cool It - The Skeptical Environmentalist's Guide to Global Warming by Bjorn Lomborg

Lomborg, a Danish environmentalist and economist, is not focused on debating whether or not climate change exists.

Instead, he wants to focus on how we can best spend our time, talent and treasure.

"We need to remind ourselves that our ultimate goal is not to reduce greenhouse gases or global warming per se," he writes, "but to improve the quality of life and the environment.

"Radically reducing greenhouse-gas emissions is not necessarily the best way to achieve that."

Rather than spending billions to save .06 polar bears per year, Lomborg would rather save the millions of humans dying from preventable diseases, such as malaria.

Lomborg offers several "inconvenient truths" that are avoided by global warming extremists, such as the fact that many more people die from cold each year than from heat.

Such objectivity comes at a price.

"Anyone who does not support the most radical solutions to global warming is deemed an outcast and is called irresponsible and is seen as possibly an evil puppet of the oil lobby."

He adds: "Being smart about our future is the reason we have done so well in the past. We should not abandon our smarts now."

Too True

"The uninformed are easily misinformed."
— Fred C. Koch

Political process

As Charles Koch pointed out in his book, *The Science of Success*, Koch companies always strive to create value by the economic means rather than the political means.

"The economic means," he wrote, "creates wealth by making each participant, and, therefore, society as a whole, better off."

This is in stark contrast to the political means of profiting that "transfers good or services from one party to another by force or fraud."

Avoiding profit by the political means (such as lobbying the government to hamper competitors or asking for unfair or exclusive subsidies) does not mean we should avoid the political process.

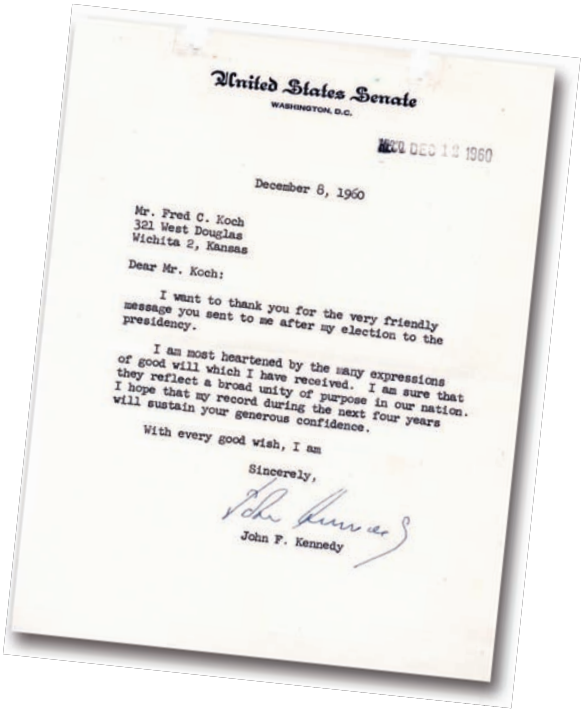
Quite the contrary, Koch companies and their employees have a long tradition of engaging lawmakers in hopes of advancing truly fair, market-based policies. Such policies enable companies to create real value and benefit society as a whole.

That political engagement has taken many forms, including correspondence and face-to-face meetings.

KII co-founder Fred C. Koch corresponded with several national leaders, including Richard Nixon and John F. Kennedy.

Hubert H. Humphrey, the Minnesota Senator who later became Vice President, communicated frequently with the management of Pine Bend refinery.

In more recent years, politicians ranging from Senators and Cabinet secretaries to Congressmen and Governors have interacted with Koch leaders.



United States Senate
WASHINGTON, D.C.

DEC 12 1960

December 8, 1960

Mr. Fred C. Koch
321 West Douglas
Wichita 2, Kansas

Dear Mr. Koch:

I want to thank you for the very friendly message you sent to me after my election to the presidency.

I am most heartened by the many expressions of good will which I have received. I am sure that they reflect a broad unity of purpose in our nation. I hope that my record during the next four years will sustain your generous confidence.

With every good wish, I am

Sincerely,

John F. Kennedy

A letter from President-elect John F. Kennedy to Fred C. Koch.

This interaction extends to Europe as well. In 2005, Charles Koch, KII's chairman and CEO, was invited to address the President of the Austrian Parliament and other leaders in Vienna. Koch's topic was "Applying the Austrian School of Economics to Create Prosperity and Growth."

To learn more about how you can engage in the political process in a positive way (or more about our philosophy of profiting by the economic means), visit the following Web sites:

www.kochcan.org
www.kochpac.com
www.americansforprosperity.org
www.kochscienceofsucess.com

By Richard H. Fink,
KII Executive VP
Public Sector Group

All of us, no matter where we work or live, are being confronted with extreme points of view regarding global climate change.

On one hand, we are being told that catastrophic climate change is well underway, that mankind is causing most of it, and that if we don't do something equally extreme right now, our very existence will be threatened.

Most of the suggested "cures" for this problem would radically undermine America's economic health.

On the other hand, many scientists and economists are questioning both the science and the wisdom of these proposed policies. These challengers, who claim that the "cure" is far worse than the "disease," are ignored or shouted down in much of the public arena.

Many in the media or political arena are quick to ridicule anyone who questions the most catastrophic environmental predictions. The media also seem willing to steamroll those who are unwilling to support so-called solutions to global climate change.

Truth and consequences

Objective efforts to present various points of view are the foundation of both science and education in a free society. Unfortunately, concerted efforts to present a one-sided approach to climate change have already reached even the elementary schools across our nation.

Much of this "information" is discredited science and exaggerated scares. This is far more propaganda than education and should be vigorously opposed by every parent.

At Koch, we have learned the importance of both a productive challenge process and the concept of a Republic of Science. [See *The Science of Success*, pages 113-114.] These principles and tools are essential in any public debate.

The attempt to silence scientists who disagree by threatening their careers or equating them with Holocaust deniers should be denounced by every citizen who cherishes his or her freedom.

Do the math

I have spent most of my life as a student of economics, and it seems to me there are some strong similarities between today's global climate change issues and an historically significant economic debate.

For years, there was a certain set of economic assumptions that most economists believed to be true. These assumptions were based on the writings of the Depression-era British economist John Maynard Keynes.

Keynesian economic theory, which relies heavily on government manipulation of the economy, reigned supreme for more than 30 years. It was much more difficult to get a university position as an economics professor if you weren't a Keynesian, and most economic journals were dominated by Keynesians.

Consequences of climate policies are so severe we must take time to understand the issues.

Non-Keynesians were labeled as out of the mainstream and therefore not to be taken seriously.

Over time, Keynesian economics was shown to be seriously flawed, but not before countless government programs based on its assumptions had already been implemented.

Those policies proved unworkable and did incredible damage to the economy, causing energy shortages, stagflation, high interest rates and high unemployment.

As these misguided policies were revealed, the economic "deniers" became the new mainstream.

What to think

The issue of global climate change has become so politicized and propagandized that it needs a fundamental reexamination. (Lawrence Solomon's book, *The Deniers,* is a helpful place to start.)

Mistaken policies to address global climate change are already affecting our lives. Today's renewable fuels subsidies and mandates, for example, have already caused significant increases in food and commodity prices as well as environmental harm. The worst is yet to come.

Programs and policies such as these have been the knee-jerk reaction of politicians to a relatively small but well-connected group of alarmists and special interests.

The consequences of these policies are likely to be so severe that each of us must take the time to understand the issues. We must objectively look at the evidence and carefully evaluate what we learn.

Despite the many attempts to shout down alternative views and legitimate scientific challenges to global warming claims, every citizen should have the courage to stand up for free speech and scientific inquiry, and take a serious look at competing analyses.

Otherwise, we face even more climate change "cures" that are certain to be far worse than the supposed disease. ■

Exhibit D

PERMIT APPLICATION

AIR CONTAMINANT DISCHARGE PERMIT APPLICATION

Coyote Island Terminal, LLC

Bulk Transloading Facility

Port of Morrow - Boardman, Oregon

Submitted To: Oregon Department of Environmental Quality
Eastern Region
475 NE Bellevue, Suite 110
Bend, Oregon 97701

Submitted By: Golder Associates Inc.
9 Monroe Parkway, Suite 270
Lake Oswego, OR 97035 USA

Distribution: Coyote Island Terminal, LLC

July 26, 2012

113-99739

A world of capabilities delivered locally

Golder Associates

Table of Contents

Tables, Figures, and Appendices follow the application text.

List of Tables

List of Figures

List of Appendices

1.0 INTRODUCTION

This permit application is being submitted to the Oregon Department of Environmental Quality (DEQ) to allow for the construction and operation of an enclosed transloading facility to be located at the Port of Morrow in Boardman, Oregon (address not yet assigned, but the general location is shown in Figure 1 and the exact location is delineated in Figure 2). The facility will be operated by Coyote Island Terminal, LLC and will be used to transfer sub-bituminous (SB) coal (such as the coal obtained from the Powder River Basin) entering the facility by railcar to barges on the Columbia River. The facility will consist of a railcar unloading station, enclosed transfer conveyors, storage buildings, and barge loading equipment. Once bulk material is unloaded from a railcar, it will be conveyed and stored in enclosed spaces until it is ultimately unloaded into barges.

As a result of the naturally high moisture content of SB coal, and the enclosures and control devices incorporated into the project, very minimal air pollutant emissions will result from the operation of this facility. Based on the type of facility and estimated emissions, Coyote Island Terminal, LLC believes that the facility would not require an Air Contaminant Discharge Permit (ACDP) in order to be constructed and operated in accordance with OAR 340-216. However, in a July 12, 2012 letter from Mr. Mark Fisher with the DEQ to Mr. Clark Moseley with The Morrow Pacific Project, DEQ requested that the facility apply for a Standard ACDP in order to provide enforceable operating conditions for the extensive emission reduction controls and mitigation measures proposed for the project. Rather than debate the issue of applicability, this permit application is being submitted.

The required DEQ permit application forms identified for this application consist of the following:

- AQ101 (Administrative Information)
- AQ102 (Facility Description)
- AQ230 (Process form; one for each process with emissions)
- AQ231 (Operation and Maintenance Practices)
- AQ303 (Wet Scrubber Control Device Information)
- AQ402 (Plant Site Emissions Detail Sheet)
- AQ403 (Hazardous Air Pollutant Emissions Detail Sheet)
- Land Use Compatibility Statement (LUCS)

These application forms and LUCS are provided in Appendix A.

1.1 Project Description

The proposed transloading facility will be designed to handle SB coal, which will travel to the site via railcar from mines located primarily in Wyoming and Montana. SB coal is generally harder than lignite, but softer than bituminous coal. It has an inherently high moisture content, expected to be in the range of

20% to 30% for the SB coal being supplied for this project. It is used primarily as fuel for electric power plants and similar combustion units to produce heat (thermal coal). Unlike harder coals such as bituminous coal or anthracite, sub-bituminous coal is generally less dusty due to its higher moisture content.

As will be described below, the majority of the bulk material handling processes at the facility will be completely enclosed. An artist's rendering of the proposed facility is provided in Figure 3. A preliminary plot plan for the facility is provided in Appendix B and a preliminary process flow diagram is provided in Appendix C (both process and conveyor numbers are shown on this diagram). Note that the project is anticipated to initially be built with only one bulk material storage building, but will eventually include three such buildings. This permit application is based on the full build-out of the facility (i.e. with three storage buildings).

The coal will be brought into the project site via railcars. Once onsite, railcars will enter an unloading building which will be enclosed except for entrance and exit doorways for the railcars. Below-ground hoppers will receive the coal as it is unloaded via a rotary dump mechanism.

The unloading building will incorporate an advanced dust extractor system, with air pickup vents on either side of the mouth of the receiving hopper, with the captured particulate matter directed to one of two wet scrubbers. The entrance and exit of the unloading building are only marginally larger than the railcars to limit influence by ambient winds.

Material will travel through a completely enclosed conveyor system either directly to barge loadout (via the Bypass Conveyor and Loadout Conveyor), or to one of three planned storage buildings (via transfer conveyors). Dust emissions will be almost entirely mitigated as a result of the conveyor enclosures.

For material diverted to the storage buildings, it will be dropped from an overhead Tripper Conveyor onto a pile centered within the width of the building (see plot plan in Appendix B). Each storage building will be ventilated through five water scrubbers with intakes located along one side of the building and ambient air being drawn from the opposing side of the building. The one, two, or three scrubber intakes nearest the location where bulk material is being dropped onto, or being reclaimed from, the storage pile will operate at a time. Each scrubber will have its own exhaust stack to atmosphere, and this system will achieve complete capture of particulate emissions generated inside the building.

Reclaimers within the storage buildings will pull material off of the storage pile when needed and move the material onto a Storage Reclaim Conveyor which exits the building. All portions of the reclaim conveyors outside of the storage buildings will be completely enclosed.

The Storage Reclaim Conveyors will transport material to an enclosed Loadout Conveyor, which will pass material through two transfer towers (each with a conveyor transfer point), then onto the Barge Loading Conveyor. The conveyor transfer points within the transfer towers are controlled with water spray/fogging.

Barges to be loaded will be of a specific design with a narrow, lengthwise hatch opening on the deck peak which can accommodate a retractable loading chute (see Figure 4 for an artist's rendering of the preliminary barge design). All coal will be loaded below deck and contained in the barge hold. The chute will be designed to minimize dust emissions by incorporating sensors that allow the shrouded end of the chute to maintain close contact with the pile surface, and incorporating an internal design that reduces drop velocity, and therefore emissions.

2.0 AIR POLLUTANT EMISSION ESTIMATES

The only criteria pollutant emissions anticipated from the proposed project are particulate matter. This includes total particulate matter (PM), particulate matter less than 10 microns in diameter (PM_{10}), and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$). In all cases, the emissions will consist of small quantities of fugitive dust from the bulk material being handled.

The emissions event at each point along the process is best described as a material drop. This would include material dropping from the railcar into the receiving hopper, material dropping from one conveyor to another, material dropping from an overhead conveyor onto a storage pile, and material dropping from the loading chute into a barge hold.

2.1 Particulate Matter Emission Factors

Emission factors for particulate matter size fractions due to handling of aggregates and coal are provided in the U.S. EPA AP-42 document in Chapter 13.2.4 (Aggregate Handling and Storage Piles). Although the title of this section only references aggregate handling, the data included in the discussion of the emission factors indicates that the equations are applicable to the handling of coal. Additionally, these emission factors are used for estimating particulate matter emissions from coal handling for air quality permitting at the two coal-fired power plants in the Pacific Northwest (the TransAlta plant in Centralia, Washington and the Portland General Electric plant in Boardman, Oregon). Therefore, these emission factors are used to estimate particulate matter emissions for the proposed project.

These emission factors are determined using the following equations:

From Aggregate Handling and Storage Piles (Chapter 13.2.4) – Material Drop

$$E\ (lb/ton) = k(0.0032) \times [(U/5)^{1.3} / (M/2)^{1.4}]$$

U = Wind Speed (mph)
M = Moisture (%)

$k\ (PM_{10}) = 0.35$
$k\ (PM_{2.5}) = 0.053$

No k value is provided for total PM, but k for particulate less than 30 µm is 0.74 and 30 microns is often provided as the maximum size for total suspended particulate,[1] which would make it an appropriate size fraction for total PM.

[1] For example, see http://www.epa.gov/apti/bces/module3/category/category.htm.

Bulk SB coal handled at the proposed facility is expected to have a moisture content within the range of 20% to 30%, with an annual average moisture content near the midpoint of these values. For purposes of the conservative estimates provided in this application, the assumed material moisture content for both short-term and long-term emissions is assumed to be 20%.

For all bulk material drops associated with the proposed project, each drop will be sheltered from outdoor winds to varying degrees. The annual average outdoor wind speed at nearby Hermiston, Oregon is 7.3 miles per hour.[2] Within the storage buildings, small wind velocities will be induced by the scrubber fan systems, but these will be very low near the center of the building, where most of the emissions will occur. For the railcar unloading process, the partial enclosure will significantly attenuate outdoor winds at the drop point. Barge loading, which will occur inside the barge hold, will be sheltered from outdoor winds, though not completely. During loadout there will be a gap that runs lengthwise down the barge roof to allow access for the telescoping loadout chute.

For purposes of deriving an emission factor using the AP-42 equation above, it was assumed that effective wind speeds within enclosed conveyors and the enclosed surge bin will be no more than two miles per hour (mph). Similarly, effective wind speeds within the enclosed storage buildings will be no more than two miles per hour. Because the railcar unloading and the barge loading are slightly more exposed to outdoor winds compared to being inside complete enclosures, an effective wind speed of four mph was assumed for these material drop points.

2.2 Process-Specific Particulate Matter Emissions

A total of eleven separate processes (in some cases consisting of two or three conveyors), which can be grouped into five separate categories, are identified as having potential particulate matter emissions. In this case, a process is taken to be one or more unique types of material drops; for example, there will be three storage buildings at the proposed facility, each with an overhead storage building tripper conveyor. These three identical conveyors represent a single process, and it is assumed that all of the material brought into the proposed facility will pass through one of these three conveyors. In reality, the coal unloaded onsite could bypass the storage buildings altogether (being conveyed directly to the barge loadout process), but for purposes of the emission calculations it is assumed that 100% of the material unloaded onsite passes through the storage buildings, resulting in the highest emissions estimates.

The eleven processes identified for the proposed project are labeled on the process flow diagram provided in Appendix C. The appropriate hourly and annual material throughput values are summarized in Table 1.

[2] From http://www.wrcc.dri.edu/summary/hri.or.html accessed January 26, 2012.

2.2.1 Railcar Unloading

Railcar unloading emissions will occur as bulk material is dropped into the underground hoppers from the rotary railcar unloading system (labeled as process "1" in the process flow diagram in Appendix C). .

The upper portion of the underground hoppers will employ a dedicated air intake system to immediately capture any dust generated by the unloading process (see representative information for the air handling system in Appendix D). The dust-laden air will then pass through one of two pre-filter boxes, each followed by a wet scrubber (representative scrubber information provided in Appendix E).

Based on discussions with the project design engineering firm (Taggart Global LLC), it is estimated that the air pickup system will have an overall capture efficiency of 90%. The scrubbers used are expected to have the following control efficiencies by particle size fraction (these control efficiencies are applicable to all scrubbers proposed for this project):

- PM: 99.7% control efficiency
- PM_{10}: 98.4% control efficiency
- $PM_{2.5}$: 95.0% control efficiency

Emissions not captured by the air pickup system were assumed to be emitted to atmosphere.

Based on this information, particulate matter emissions were estimated for this process using the appropriate size-specific emission factor discussed in Section 2.1 above, a capture efficiency of 90%, the scrubber control efficiencies shown above, and the applicable hourly or annual material throughput. These emissions are provided in Table 2.

2.2.2 Conveying to Storage

Bulk material unloaded from the railcars travels on a Railcar Unloading Conveyor to a primary Unloading Conveyor. The Unloading Conveyor will incorporate a completely enclosed transfer tower in order to allow the material to change direction into the end of Storage Building #1. After the transfer tower, material on the Unloading Conveyor may be diverted to the Loadout Conveyor, which would go directly to barge loading, bypassing storage (this route is not considered in the emission calculations as this would result in lower overall emissions). Alternatively, material on the Unloading Conveyor may be diverted to the storage building overhead Tripper Conveyor for Storage Building #1.

If the material does not drop into Storage Building #1, it may be diverted onto a transfer conveyor that may be diverted to the storage building overhead Tripper Conveyor for Storage Building #2. If the remaining material does not drop into Storage Building #2, it may be diverted onto a transfer conveyor that then drops onto the storage building overhead Tripper Conveyor for Storage Building #3. All of these

conveyers will be completely enclosed, either by conveyor enclosures or by virtue of being located inside of a building.

For annual average emission calculations, it was assumed that material would be evenly distributed between the three storage buildings, resulting in an average of one drop onto a transfer conveyor. For hourly emission calculations, it was conservatively assumed that material would be distributed into Storage Building #3, resulting in two drops onto a transfer conveyor.

Emissions resulting from material dropping from the Feeder Conveyor to the Unloading Conveyor are assigned to process "2". Emissions from the material drop inside of the Transfer Tower are assigned to process "3". Emissions resulting from material dropping from the Unloading Conveyor to the transfer conveyors associated with getting material to the Tripper Conveyors are assigned to process "4". Emissions resulting from material drops onto the overhead Tripper Conveyors leading into each Storage Building are assigned to process "5". These process numbers are shown in the process flow diagram in Appendix C.

Because all of these conveyors will be enclosed, a PM/PM_{10}/$PM_{2.5}$ control efficiency of 95% is conservatively assumed, although the actual control efficiency is expected to be much higher if the conveyor enclosures are appropriately constructed. Note that these enclosed structures will be periodically washed down with internal water sprays to remove collected particulate, with the wash water being collected in sumps.

Therefore, particulate matter emissions were estimated for this process using the appropriate size-specific emission factor discussed in Section 2.1 above, a control efficiency of 95%, and the applicable hourly or annual material throughput. These emissions are provided in Table 3.

2.2.3 Storage Building Conveying

From the overhead Tripper Conveyors in the three storage buildings, emissions will occur from the material drop onto the indoor storage piles. Emissions resulting from these drops are assigned to process "6".

Material reclaimed from each storage pile using mechanical reclaimers is dropped onto the Storage Reclaim Conveyors (inside storage buildings). Emissions from these drops are assigned to process "7".

Because these emissions occur within the storage buildings, they will be picked up by the scrubber systems and controlled.

Therefore, particulate matter emissions were estimated for this process using the appropriate size-specific emission factor discussed in Section 2.1 above, the size-specific control efficiency for the

scrubbers (see Section 2.2.1), and the applicable hourly or annual material throughput. These emissions are provided in Table 4.

2.2.4 Loadout Conveying

Material on the Storage Reclaim Conveyors is dropped onto the Loadout Conveyor. Emissions resulting from these drops are assigned to process "8". The material is then transferred to a transfer conveyor (inside of an enclosed transfer tower), and then placed on the Barge Loading Conveyor (inside of another enclosed transfer tower). Emissions resulting from these drops within the transfer towers are assigned to processes "9" and "10".

Therefore, particulate matter emissions were estimated for these processes using the appropriate size-specific emission factor discussed in Section 2.1 above, the assumed control efficiencies for the enclosures, and the applicable hourly or annual material throughput. These emissions are provided in Table 5.

2.2.5 Barge Loading

Material on the Barge Loading Conveyor will drop through an enclosed chute into the hold of the barge being loaded. Vendor information for the preferred loading chute design is provided in Appendix F. Emissions resulting from barge loading are assigned to process "11".

The chute and loading arrangement will significantly reduce particulate emissions relative to an open material drop. First, the chute will be a "cascade" design, which reduces fall velocity and, therefore, dust generation. Second, there will be a shroud installed at the end of the loading chute that will be kept in contact with the material pile, reducing the opportunity for dust to escape from around the shroud. Finally, the material pile will be placed inside the storage hold of the barge, protected from external wind and allowing time for some particulate settling before potential emissions are vented to atmosphere. Relative to an open material drop, it's anticipated that emissions will be reduced by 80% to 95%; for purposes of the conservative emissions estimates presented in this application, a reduction factor of 80% has been used.

Therefore, particulate matter emissions were estimated for this process using the appropriate size-specific emission factor discussed in Section 2.1 above; an emission reduction factor of 80%; and the applicable hourly or annual material throughput. These emissions are provided in Table 6.

2.3 Facility-Wide Emissions

Based on the emission estimation methodologies discussed in Sections 2.1 and 2.2 above, facility-wide PM, PM_{10}, and $PM_{2.5}$ emissions are summarized in Table 7.

As is the case with most naturally-occurring materials, coal contains trace quantities of metals, some of which are classified as hazardous air pollutants (HAPs). Average metals concentrations in Powder River Basin coals are published by the U.S. Geological Survey.[3] In Table 8 these metals concentrations are multiplied by the facility-wide PM emission estimates from Table 7 to estimate the negligible annual HAP emissions associated with the proposed project.

[3] *Coal Quality and Geochemistry, Powder River Basin, Wyoming and Montana*, U.S. Geological Survey Professional Paper 1625-A, Table PQ-1, 1999 (http://pubs.usgs.gov/pp/p1625a/Chapters/PQ.pdf).

3.0 REGULATORY REQUIREMENTS

The proposed transloading facility could potentially be subject to air quality rules promulgated by the DEQ in Oregon Administrative Rules (OAR) Chapter 340 as well as federal rules promulgated by the U.S. Environmental Protection Agency in Title 40 of the Code of Federal Regulations. In many cases, the DEQ has been delegated the authority to implement the federal air quality rules. Sections 3.1 and 3.2 below summarize the results of an applicability review of these air quality regulations.

3.1 Oregon State Rules

The following OARs are expected to be applicable to this facility; any OARs not mentioned are considered inapplicable:

OAR-340-202-0110: Particle Fallout

"The particle fallout rate as measured by an Oregon standard method at a location approved by the Department of Environmental Quality must not exceed: (1) 10 grams per square meter per month in an industrial area."

OAR 340-208-0110: Visible Air Contaminant Limitations

"(2) New sources in all areas and existing sources within special control areas: No person may emit or allow to be emitted any air contaminant into the atmosphere from any new air contaminant source, or from any existing source within a special control area, for a period or periods aggregating more than three minutes in any one hour which is equal to or greater than 20% opacity."

OAR 340-208-0210: Fugitive Emission Requirements

"(2) No person may cause or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be used, constructed, altered, repaired or demolished; or any equipment to be operated, without taking reasonable precautions to prevent particulate matter from becoming airborne."

OAR 340-208-0300: Nuisance Control Requirements

"(1) No person may cause or allow air contaminants from any source subject to regulation by the department to cause a nuisance."

OAR 340-208-0400: Masking of Emissions

"No person may cause or permit the installation or use of any device or use of any means designed to mask the emission of an air contaminant that causes or is likely to cause detriment to health, safety, or welfare of any person or otherwise violate any other regulation or requirement."

OAR 340-208-0450: Particle Fallout Limitation

"No person may cause or permit the emission of particulate matter larger than 250 microns in size at sufficient duration or quantity as to create an observable deposition upon the real property of another person when notified by the department that the deposition exists and must be controlled."

OAR 340-226-0210: Particulate Emission Limitations for Sources other than Fuel Burning and Refuse Burning Equipment

"(1) No person may cause, suffer, allow, or permit particulate matter emission from any air contaminant source in excess of:

(b) 0.1 grains per standard cubic foot for new sources.

(2) This rule does not apply to fuel or refuse burning equipment or to fugitive emissions. "

OAR 340-226-0310: Particulate Emissions from Process Equipment- Emission Standard

"No person may cause, suffer, allow, or permit the emissions of particulate matter in any one hour from any process in excess of the amount shown in Table 1 (of the OAR), for the process weight rate allocated to such process."

(Note: At the proposed facility this will apply to conveyors, material storage structures, and equipment other than that for which specific emission standards apply)

Additionally, certain portions of the following rules are expected to apply to this project:

OAR 340-214-0100 to -0130: Reporting
OAR 340-214-0300 to -0340: Excess Emissions and Emergency Provision
OAR 340-216: Air Contaminant Discharge Permits

Notes on certain rules that do not apply:

OAR 340-218: Oregon Title V Operating Permits - The proposed transloading facility will have permitted emissions well below the applicability thresholds of this permitting program. The facility will operate under a Standard ACDP.

OAR 340-224: Major New Source Review - The proposed transloading facility will have permitted emissions well below the applicability thresholds of this permitting program.

OAR 340-226-0130: Typically Achievable Control Technology (TACT) - The proposed source will not have any criteria pollutant emissions equal to or greater than 1 ton per year. Regardless, the emission controls and total enclosure of the coal from railcar unloading to barge loading exceeds typical industry standards and would more than meet TACT requirements if they were applicable.

OAR 340-228: Requirements for Fuel Burning Equipment and Fuel Sulfur Content - The proposed facility will have no fuel burning equipment. Emergency fire water and electricity will be supplied by off-site sources at the Port of Morrow.

OAR 340-238: New Source Performance Standards (NSPS) - The proposed project will not have any combustion devices or any other units for which there is an applicable NSPS. Title 40 CFR 60 Subpart Y regulates affected facilities located at coal preparation and processing plants that process more than 200 tons of coal per day. A coal preparation and processing plant is defined as "any facility (excluding underground mining operations) which prepares coal by one or more of the following processes: breaking, crushing, screening, wet or dry cleaning, and thermal drying." The proposed project will not have any processes that fall under the definition of "coal preparation and processing plant." Therefore, Subpart Y is not applicable.

OAR 340-244: Oregon Federal Hazardous Air Pollutant Program - The proposed facility will not have uncontrolled emissions in excess of the major source definition that defines the applicability of many of the National Emission Standards for Hazardous Air Pollutants under 40 CFR Parts 61 and 63. Additionally, there are no area source categories under 40 CFR Part 63 that are applicable to the proposed transloading operation.

3.2 Federal Rules

The State of Oregon is delegated by the U.S. Environmental Protection Agency to implement any federal rules that could be applicable to this facility.

4.0 CLOSING

As provided in this application, the proposed Coyote Island Terminal LLC bulk transfer facility at the Port of Morrow will be a state-of-the-art facility for handling SB coal with minimal air pollutant emissions. As requested by the Oregon DEQ, the applicant has agreed to submit this application in order to obtain a Standard ACDP. If there are any questions pertaining to this application, please contact either Brian Patterson or Chad Darby with Golder Associates at 503-670-1820.

GOLDER ASSOCIATES INC.

Brian Patterson, Ph.D.
Associate

Chad Darby, M.S.
Associate

Table 1
Production and Process Rates
Coyote Island Terminal LLC, Boardman, Oregon

Input		Value
Annual Throughput (tons/year)	(1)	8,800,000
Hourly Throughput (tons/hr)	(1)	3,000

References:
(1) Provided by applicant.

Table 2
Particulate Emissions from Railcar Unloading
Coyote Island Terminal LLC, Boardman, Oregon

Process No.	Rail Car Unloading	Emission Factor [(a)] (lbs/ton)	Estimated Potential Emissions	
			Hourly [(b)] (lbs/hr)	Annual [(c)] (tons/yr)
1	PM	7.05E-05	2.2E-02	3.2E-02
1	PM_{10}	3.34E-05	1.1E-02	1.7E-02
1	$PM_{2.5}$	5.05E-06	2.2E-03	3.2E-03

Notes:

(a) Emission factor (lbs/ton) = (particle size multiplier [k]) X (0.0032) X (wind speed [U] / 5)$^{1.3}$ / (moisture content [M] / 2)$^{1.5}$

PM particle size multiplier (k) =	0.74	(1)
PM_{10} particle size multiplier (k) =	0.35	(1)
$PM_{2.5}$ particle size multiplier (k) =	0.053	(1)
Wind speed (mph) (U) =	4	(2)
Moisture content (%) (M) =	20	(3)

(b) Estimated potential hourly emissions (lbs/hr) = (emission factor [lbs/ton]) X (annual throughput [tons/hr]) X ([1 - {capture efficiency (%) / 100}] + [{capture efficiency (%) / 100} X {1 - (PM, PM_{10}, or $PM_{2.5}$ control efficiency [%] / 100)}])

Hourly throughput (tons/hr) =	3,000	(4)
Capture efficiency (%) =	90	(5)
PM Control efficiency (%) =	99.7	(5)
PM_{10} Control efficiency (%) =	98.4	(5)
$PM_{2.5}$ Control efficiency (%) =	94.99	(5)

(c) Estimated potential annual emissions (tons/yr) = (potential emission factor [lbs/ton]) X (annual throughput [tons/yr]) X (ton/2,000 lbs) X ([1 - {capture efficiency (%) / 100}] + [{capture efficiency (%) / 100} X {1 - (PM, PM_{10}, or $PM_{2.5}$ control efficiency [%] / 100)}])

Annual throughput (tons/hr) =	8,800,000	(4)
Capture efficiency (%) =	90	(5)
PM Control efficiency (%) =	99.7	(5)
PM_{10} Control efficiency (%) =	98.4	(5)
$PM_{2.5}$ Control efficiency (%) =	94.99	(5)

References:

(1) AP-42 Section 13.2.4.3 (11/2006), pg. 13.2.4-3, for batch/continuous drop operations.
(2) Estimate factoring in degree of enclosure. Annual average wind speed at nearby Hermiston is 7 mph. Average winds at project site likely to be somewhat higher than Hermiston, but drop points are enclosed.
(3) Low end of expected range.
(4) See Table 1, Production and Process Rates.
(5) Provided by scrubber vendor. Emissions from railcar unloading will occur in an enclosed rotary dump with extensive air collection system. Controlled emissions will be vented to two scrubbers.

Table 3
Particulate Emissions from Conveying to Storage
Coyote Island Terminal LLC, Boardman, Oregon

Process No.	Conveyor Drop Point	PM			PM_{10}			$PM_{2.5}$		
		Emission Factor [(a)] (lbs/ton)	Estimated Potential Emissions		Emission Factor [(a)] (lbs/ton)	Estimated Potential Emissions		Emission Factor [(a)] (lbs/ton)	Estimated Potential Emissions	
			Hourly [(b)] (lbs/hr)	Annual [(c)] (tons/yr)		Hourly [(b)] (lbs/hr)	Annual [(c)] (tons/yr)		Hourly [(b)] (lbs/hr)	Annual [(c)] (tons/yr)
2	Drop to Unloading Conveyor	2.86E-05	4.3E-03	6.3E-03	1.35E-05	2.0E-03	3.0E-03	2.05E-06	3.1E-04	4.5E-04
3	Drop Inside Transfer Tower	2.86E-05	4.3E-03	6.3E-03	1.35E-05	2.0E-03	3.0E-03	2.05E-06	3.1E-04	4.5E-04
4	Drop to Transfer Conveyor	2.86E-05	4.3E-03	6.3E-03	1.35E-05	2.0E-03	3.0E-03	2.05E-06	3.1E-04	4.5E-04
4	Drop to Transfer Conveyor [(6)]	2.86E-05	4.3E-03	--	1.35E-05	2.0E-03	--	2.05E-06	3.1E-04	--
5	Drop to Tripper Conveyor	2.86E-05	4.3E-03	6.3E-03	1.35E-05	2.0E-03	3.0E-03	2.05E-06	3.1E-04	4.5E-04
Total			***2.1E-02***	***2.5E-02***		***1.0E-02***	***1.2E-02***		***1.5E-03***	***1.8E-03***

Notes:

(a) Emission factor (lbs/ton) = (particle size multiplier [k]) X (0.0032) X (wind speed [U] / 5)$^{1.3}$ / (moisture content [M] / 2)$^{1.5}$

PM particle size multiplier (k) =	0.74	(1)
PM_{10} particle size multiplier (k) =	0.35	(1)
$PM_{2.5}$ particle size multiplier (k) =	0.053	(1)
Wind speed (mph) (U) =	2	(2)
Moisture content (%) (M) =	20	(3)

(b) Estimated potential hourly emissions (lbs/hr) = (emission factor [lbs/ton]) X (annual throughput [tons/hr]) x (1 - [control efficiency {%} / 100])

Hourly throughput (tons/hr) =	3,000	(4)
Control efficiency (%) =	95	(5)

(c) Estimated potential annual emissions (tons/yr) = (potential emission factor [lbs/ton]) X (annual throughput [tons/yr]) X (ton/2,000 lbs) x (1 - [control efficiency {%} / 100])

Annual throughput (tons/hr) =	8,800,000	(4)
Control efficiency (%) =	95	(5)

References:

(1) AP-42 Section 13.2.4.3 (11/2006), pg. 13.2.4-3, for batch/continuous drop operations.
(2) Estimate factoring in degree of enclosure. Annual average wind speed at nearby Hermiston is 7 mph. Average winds at project site likely to be somewhat higher than Hermiston, but drop points are within an enclosure.
(3) Low end of expected range.
(4) See Table 1, Production and Process Rates.
(5) Engineering assumption based on enclosed conveyors and the utilization of a water spray/fogging system.
(6) It is assumed that on a worst case hourly basis, 100% of the material would pass over each Transfer Conveyor to the furthest coal storage building.

Table 4
Particulate Emissions from Storage Building Conveying
Coyote Island Terminal LLC, Boardman, Oregon

Process No.	Conveyor Drop Point	PM			PM_{10}			$PM_{2.5}$		
		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions	
			Hourly [b] (lbs/hr)	Annual [c] (tons/yr)		Hourly [b] (lbs/hr)	Annual [c] (tons/yr)		Hourly [b] (lbs/hr)	Annual [c] (tons/yr)
6	Drop to Storage Pile	2.86E-05	2.6E-04	3.8E-04	1.35E-05	6.5E-04	9.5E-04	2.05E-06	3.1E-04	4.5E-04
7	Drop to Storage Reclaim Conveyor	2.86E-05	2.6E-04	3.8E-04	1.35E-05	6.5E-04	9.5E-04	2.05E-06	3.1E-04	4.5E-04
Total			***5.2E-04***	***7.6E-04***		***1.3E-03***	***1.9E-03***		***6.2E-04***	***9.0E-04***

Notes:

(a) Emission factor (lbs/ton) = (particle size multiplier [k]) X (0.0032) X (wind speed [U] / 5)$^{1.3}$ / (moisture content [M] / 2)$^{1.5}$

PM particle size multiplier (k) =	0.74	(1)
PM_{10} particle size multiplier (k) =	0.35	(1)
$PM_{2.5}$ particle size multiplier (k) =	0.053	(1)
Wind speed (mph) (U) =	2	(2)
Moisture content (%) (M) =	20	(3)

(b) Estimated potential hourly emissions (lbs/hr) = (emission factor [lbs/ton]) X (hourly throughput [tons/hr]) x (1 - [PM, PM_{10}, or $PM_{2.5}$ control efficiency {%} / 100])

Hourly throughput (tons/hr) =	3,000	(4)
PM Control efficiency (%) =	99.7	(5)
PM_{10} Control efficiency (%) =	98.4	(5)
$PM_{2.5}$ Control efficiency (%) =	94.99	(5)

(c) Estimated potential annual emissions (tons/yr) = (potential emission factor [lbs/ton]) X (annual throughput [tons/yr]) X (ton/2,000 lbs) x (1 - [PM, PM_{10}, or $PM_{2.5}$ control efficiency {%} / 100])

Annual throughput (tons/hr) =	8,800,000	(4)
PM Control efficiency (%) =	99.7	(5)
PM_{10} Control efficiency (%) =	98.4	(5)
$PM_{2.5}$ Control efficiency (%) =	94.99	(5)

References:

(1) AP-42 Section 13.2.4.3 (11/2006), pg. 13.2.4-3, for batch/continuous drop operations.
(2) Estimate factoring in degree of enclosure. Annual average wind speed at nearby Hermiston is 7 mph. Average winds at project site likely to be somewhat higher than Hermiston. but drop points are within an enclosure.
(3) Low end of expected range.
(4) See Table 1, Production and Process Rates.
(5) Provided by scrubber vendor. Material dropped inside storage building. Each building is ventilated through scrubbers.

Table 5
Particulate Emissions from Storage to Loading
Coyote Island Terminal LLC, Boardman, Oregon

Process No.	Conveyor Drop Point	PM			PM_{10}			$PM_{2.5}$		
		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions	
			Hourly [b] (lbs/hr)	Annual [c] (tons/yr)		Hourly [b] (lbs/hr)	Annual [c] (tons/yr)		Hourly [b] (lbs/hr)	Annual [c] (tons/yr)
8	Drop to Loadout Conveyor	2.86E-05	4.3E-03	6.3E-03	1.35E-05	2.0E-03	3.0E-03	2.05E-06	3.1E-04	4.5E-04
9	Drop to Transfer Conveyor	2.86E-05	4.3E-03	6.3E-03	1.35E-05	2.0E-03	3.0E-03	2.05E-06	3.1E-04	4.5E-04
10	Drop to Barge Loading Conveyor	2.86E-05	4.3E-03	6.3E-03	1.35E-05	2.0E-03	3.0E-03	2.05E-06	3.1E-04	4.5E-04
Total			***1.3E-02***	***1.9E-02***		***6.1E-03***	***8.9E-03***		***9.2E-04***	***1.4E-03***

Notes:

(a) Emission factor (lbs/ton) = (particle size multiplier [k]) X (0.0032) X (wind speed [U] / 5)$^{1.3}$ / (moisture content [M] / 2)$^{1.5}$

PM particle size multiplier (k) =	0.74	(1)
PM_{10} particle size multiplier (k) =	0.35	(1)
$PM_{2.5}$ particle size multiplier (k) =	0.053	(1)
Wind speed (mph) (U) =	2	(2)
Moisture content (%) (M) =	20	(3)

(b) Estimated potential annual emissions (tons/yr) = (potential emission factor [lbs/ton]) X (annual throughput [tons/yr]) X (ton/2,000 lbs) x (1 - [control efficiency {%} / 100])

Annual throughput (tons/hr) =	8,800,000	(4)
Control efficiency (%) =	95	(5)

(c) Estimated potential hourly emissions (lbs/hr) = (emission factor [lbs/ton]) X (annual throughput [tons/hr]) x (1 - [control efficiency {%} / 100])

Hourly throughput (tons/hr) =	3,000	(4)
Control efficiency (%) =	95	(5)

References:

(1) AP-42 Section 13.2.4.3 (11/2006), pg. 13.2.4-3, for batch/continuous drop operations.
(2) Estimate factoring in degree of enclosure. Annual average wind speed at nearby Hermiston is 7 mph. Average winds at project site likely to be somewhat higher than Hermiston, but drop points are within an enclosure.
(3) Low end of expected range.
(4) See Table 1, Production and Process Rates.
(5) Engineering assumption based on enclosed conveyors and the utilization of a water spray/fogging system.

Table 6
Particulate Emissions from Barge Loading
Coyote Island Terminal LLC, Boardman, Oregon

Process No.	Conveyor Drop Point	PM			PM_{10}			$PM_{2.5}$		
		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions		Emission Factor [a] (lbs/ton)	Estimated Potential Emissions	
			Hourly [b] (lbs/hr)	Annual [c] (tons/yr)		Hourly [b] (lbs/hr)	Annual [c] (tons/yr)		Hourly [b] (lbs/hr)	Annual [c] (tons/yr)
11	Drop to Barge	7.05E-05	4.2E-02	6.2E-02	3.34E-05	2.0E-02	2.9E-02	5.05E-06	3.0E-03	4.4E-03
Total			***4.2E-02***	***6.2E-02***		***2.0E-02***	***2.9E-02***		***3.0E-03***	***4.4E-03***

Notes:

(a) Emission factor (lbs/ton) = (particle size multiplier [k]) X (0.0032) X (wind speed [U] / 5)$^{1.3}$ / (moisture content [M] / 2)$^{1.5}$

PM particle size multiplier (k) =	0.74	(1)
PM_{10} particle size multiplier (k) =	0.35	(1)
$PM_{2.5}$ particle size multiplier (k) =	0.053	(1)
Wind speed (mph) (U) =	4	(2)
Moisture content (%) (M) =	20	(3)

(b) Estimated potential hourly emissions (lbs/hr) = (emission factor [lbs/ton]) X (annual throughput [tons/hr]) x (1 - [control efficiency {%} / 100])

Hourly throughput (tons/hr) =	3,000	(4)
Emission generation prevention efficiency (%) =	80	(5)

(c) Estimated potential annual emissions (tons/yr) = (emission factor [lbs/ton]) X (annual throughput [tons/yr]) X (ton/2,000 lbs) x (1 - [control efficiency {%} / 100])

Annual throughput (tons/hr) =	8,800,000	(4)
Emission generation prevention efficiency (%) =	80	(5)

References:

(1) AP-42 Section 13.2.4.3 (11/2006), pg. 13.2.4-3, for batch/continuous drop operations.
(2) Estimate factoring in degree of enclosure. Annual average wind speed at nearby Hermiston is 7 mph. Average winds at project site likely to be somewhat higher than Hermiston, but drop point is enclosed.
(3) Low end of expected range.
(4) See Table 1, Production and Process Rates.
(5) Engineering assumption. Material loaded onto barges using a telescoping loading chute with a shroud at the tip that maintains contact with the pile at all times. Additional control provided due to the fact that the barge hold being loaded is mostly enclosed.
(6) Provided by scrubber vendor.

Table 7
Facility Particulate Emissions Summary
Coyote Island Terminal LLC, Boardman, Oregon

Process No.	Conveyor Drop Point	Estimated Potential Emissions					
		PM		PM_{10}		$PM_{2.5}$	
		Hourly (lbs/hr)	Annual (tons/yr)	Hourly (lbs/hr)	Annual (tons/yr)	Hourly (lbs/hr)	Annual (tons/yr)
1	Rail Car Unloading	2.17E-02	3.19E-02	1.14E-02	1.68E-02	2.20E-03	3.23E-03
2	Drop to Unloading Conveyor	4.30E-03	6.30E-03	2.03E-03	2.98E-03	3.08E-04	4.51E-04
3	Drop Inside Transfer Tower	4.30E-03	6.30E-03	2.03E-03	2.98E-03	3.08E-04	4.51E-04
4	Drop to Transfer Conveyor	4.30E-03	6.30E-03	2.03E-03	2.98E-03	3.08E-04	4.51E-04
4	Drop to Transfer Conveyor (1)	4.30E-03	--	2.03E-03	--	3.08E-04	--
5	Drop to Tripper Conveyor	4.30E-03	6.30E-03	2.03E-03	2.98E-03	3.08E-04	4.51E-04
6	Drop to Storage Pile	2.58E-04	3.78E-04	6.50E-04	9.54E-04	3.08E-04	4.52E-04
7	Drop to Storage Reclaim Conveyor	2.58E-04	3.78E-04	6.50E-04	9.54E-04	3.08E-04	4.52E-04
8	Drop to Loadout Conveyor	4.30E-03	6.30E-03	2.03E-03	2.98E-03	3.08E-04	4.51E-04
9	Drop to Transfer Conveyor	4.30E-03	6.30E-03	2.03E-03	2.98E-03	3.08E-04	4.51E-04
10	Drop to Barge Loading Conveyor	4.30E-03	6.30E-03	2.03E-03	2.98E-03	3.08E-04	4.51E-04
11	Drop to Barge	4.23E-02	6.21E-02	2.00E-02	2.94E-02	3.03E-03	4.45E-03
Total		***9.89E-02***	***1.39E-01***	***4.90E-02***	***6.89E-02***	***8.31E-03***	***1.17E-02***

References:

(1) It is assumed that on a worst case hourly basis, 100% of the material would pass over each Transfer Conveyor to the furthest coal storage building.

Table 8

Facility Hazardous Air Pollutant Emissions Summary

Coyote Island Terminal LLC, Boardman, Oregon

Hazardous Air Pollutant	Fraction of PM [1]	Estimated Potential Emissions	
		Hourly [a] (lbs/hr)	Annual [b] (tons/yr)
Antimony	4.9E-07	4.85E-08	6.80E-08
Arsenic	2.6E-06	2.57E-07	3.61E-07
Beryllium	5.4E-07	5.34E-08	7.50E-08
Cadmium	2.1E-07	2.08E-08	2.92E-08
Chromium	6.1E-06	6.04E-07	8.47E-07
Cobalt	1.9E-06	1.88E-07	2.64E-07
Lead	3.0E-06	2.97E-07	4.16E-07
Manganese	2.6E-05	2.57E-06	3.61E-06
Mercury	1.3E-07	1.29E-08	1.80E-08
Nickel	4.6E-06	4.55E-07	6.39E-07
Selenium	1.1E-06	1.09E-07	1.53E-07
Uranium	1.3E-06	1.29E-07	1.80E-07
Total		***4.75E-06***	***6.66E-06***

Notes:

(a) Estimated potential hourly emissions (lbs/hr) = (facility hourly PM emissions [lbs/hr]) x (fraction of PM)

Facility hourly PM emissions (lbs/hr) = 9.9E-02 (2)

(b) Estimated potential annual emissions (tons/yr) = (facility annual PM emissions [tons/yr]) x (fraction of PM)

Facility annual PM emissions (tons/yr) = 1.4E-01 (2)

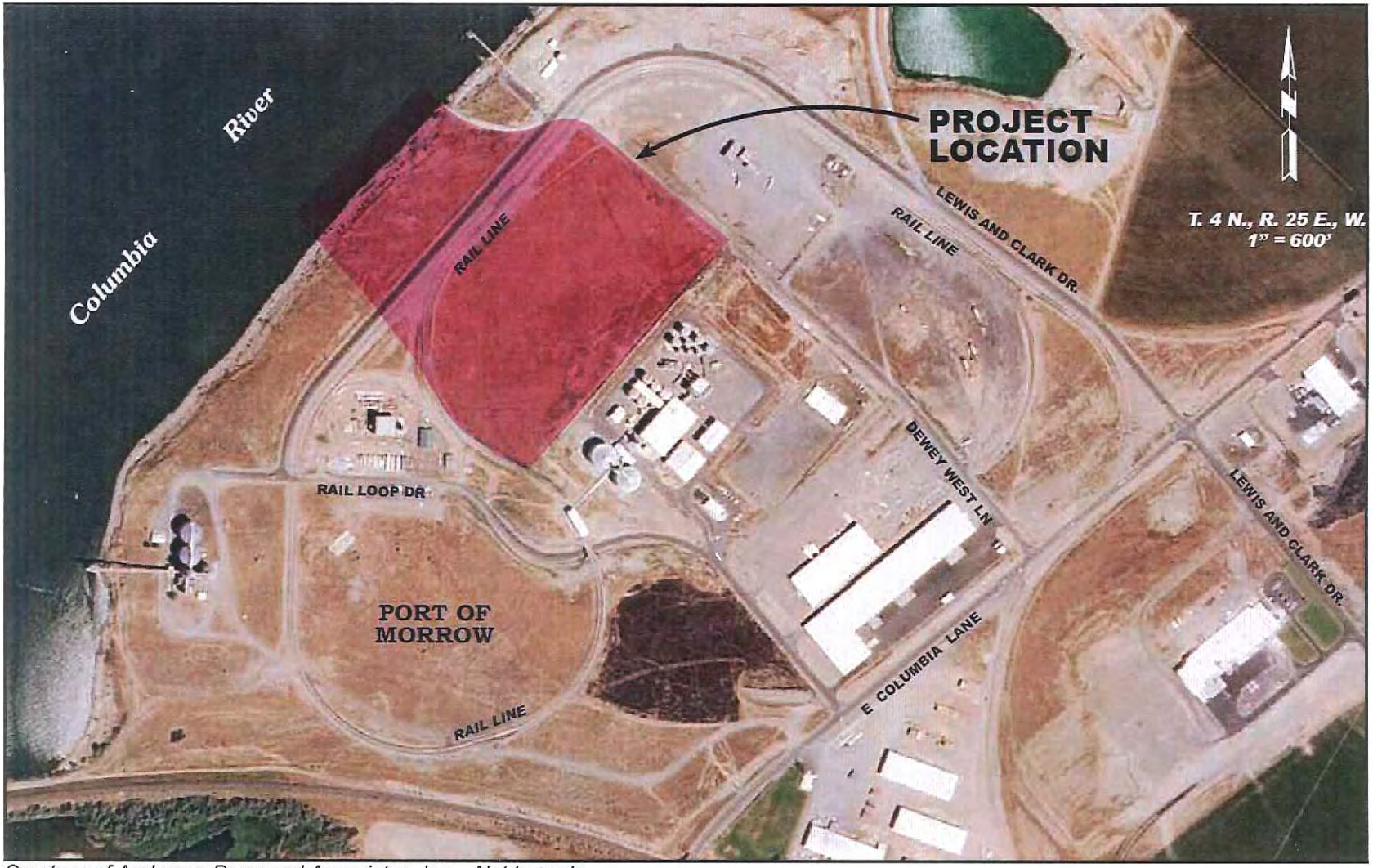
References:

(1) Stricker, G.D., and Ellis, M.S., "Coal Quality and Geochemistry, Powder River Basin, Wyoming and Montana" in U.S. Geological Survey Professional Paper 1625-A, Chapter PQ, 1999.

(2) See Table 7, Facility Particulate Emissions Summary.

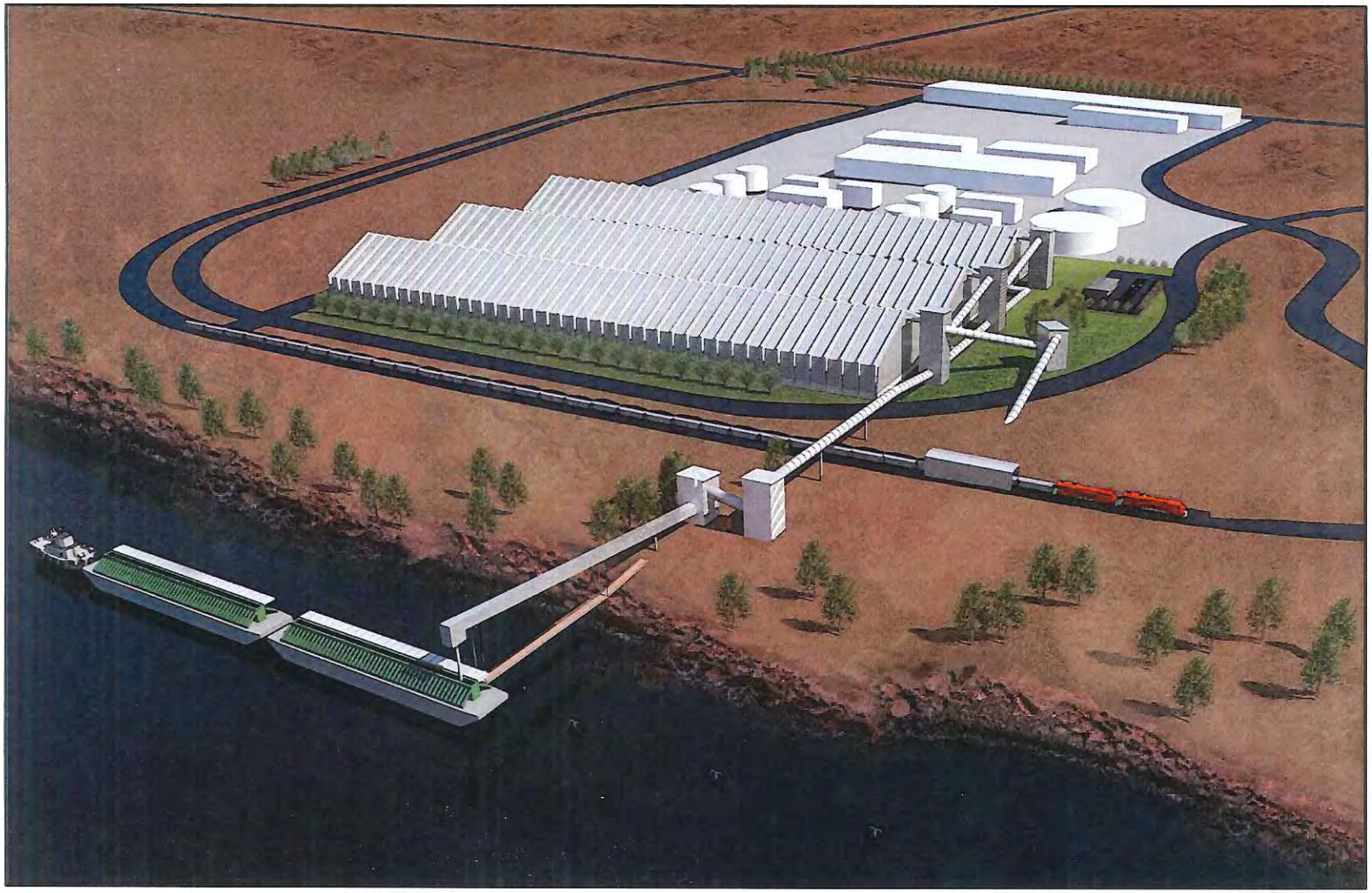
Figure 1. General Project Location

Figure 2. Specific Project Location



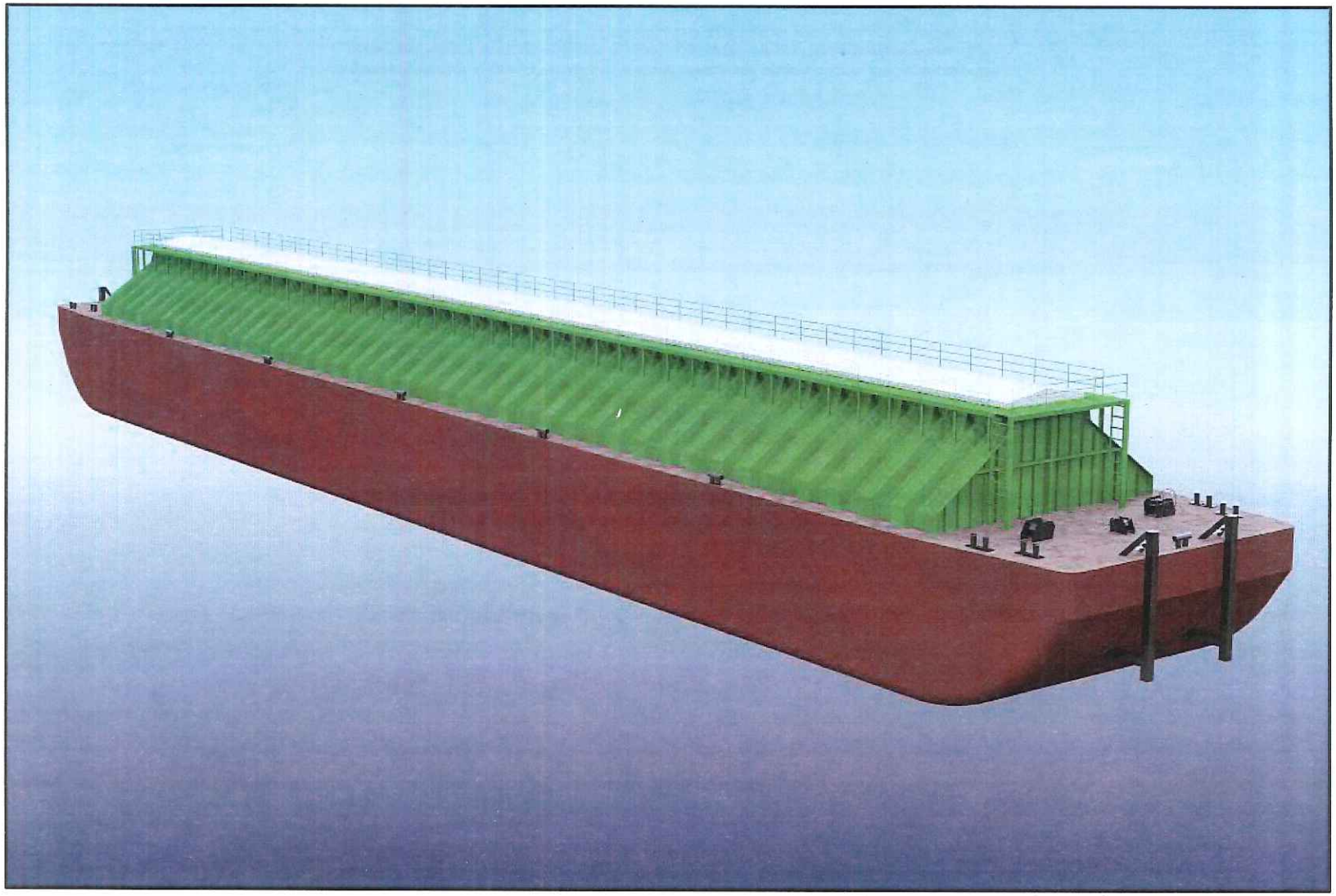
Courtesy of Anderson Perry and Associates, Inc. - Not to scale

Figure 3. Preliminary Rendering of the Facility



Note: Barge design for proposed project will differ from those depicted in this figure; see Figure 4.

Figure 4. Preliminary Rendering of the Barge Design



APPENDIX A

APPLICATION FORMS

Print Form

Received
JUL 27 2012
DEQ-Accounting

FORM AQ101
ANSWER SHEET

ADMINISTRATIVE INFORMATION

FOR DEQ USE ONLY	
Permit Number: 25-0015	Type of Application:
Application No:	RNW ___ MOD ___ NEW ___ EXT ___
Date Received : JUL 27 2012	
Regional Office:	Check No. 133 Amount $ $19,680

1. Company	2. Facility Location
Legal Name: Coyote Island Terminal, LLC	Name: Coyote Island Terminal
Mailing Address: 170 South Main Street, Suite 700	Street Address: Address not yet assigned
City, State, Zip Code: Salt Lake City, UT, 84101	City, County, Zip Code: Boardman, OR 97818
Number of employees: 28	
3. Site Contact Person	**4. Standard Industrial Classification Code(s)**
Name: Clark Moseley (Morrow Pacific Project)	Primary: 4491
Title: President and CEO	Secondary:
Telephone number: 503-796-2987	**5. Other DEQ Permits**
Fax. number:	
e-mail address: c.moseley@ambreenergy.com	

6. Permit Action:

- ☐ New Simple ACDP
- ☐ New Construction ACDP
- ☒ New Standard ACDP
- ☐ New Standard ACDP (PSD/NSR)
- ☐ Renewal of an existing permit without changes (include form AQ403 for Standard ACDPs)
- ☐ Renewal of an existing permit with changes (include form AQ403 for Standard ACDPs)
- ☐ Modification of existing permit

7. Signature

I hereby apply for permission to discharge air contaminants in the State of Oregon, as stated or described in this application, and certify that the information contained in this application and the schedules and exhibits appended hereto, are true and correct to the best of my knowledge and belief.

Clark Moseley	President and CEO - 503-796-2987
Name of official (Printed or Typed)	Title of official and phone number
Clark Moseley	July 26, 2012
Signature of official	Date

RECEIVED
AUG – 3 2012
DEQ
Eastern Region Bend

FEE INFORMATION

(Make the check payable to DEQ)

Note: The initial application fees and annual fees specified below (OAR 340-216-0020, Table 2, Parts 1 and 2) are only required for initial permit applications. These fees are not required for an application to renew or modify an existing permit. The appropriate specific activity fee(s) specified below (OAR 340-216-0020, Table 2, Part 3) applies to permit modifications or may be in addition to initial permit application fees.

OAR 340-216-0020, Table 2, Part 1 – INITIAL PERMITTING APPLICATION FEES:	
Short Term Activity ACDP	
Simple ACDP	
Construction ACDP	
Standard ACDP	$12,000
Standard ACDP (PSD/NSR)	
OAR 340-216-0020, TABLE 2, PART 2 - ANNUAL FEES:	
Simple ACDP – Low fee class	
Simple ACDP – High fee class	
Standard ACDP	$7,680
OAR 340-216-0020, TABLE 2, PART 3 - SPECIFIC ACTIVITY FEES:	
Non-technical permit modification	
Non-PSD/NSR basic technical permit modification	
Non-PSD/NSR simple technical permit modification	
Non-PSD/NSR moderate technical permit modification	
Non-PSD/NSR complex technical permit modification	
PSD/NSR modification	
Modeling review (outside PSD/NSR)	
Public hearing at applicant's request	
State MACT determination	
TOTAL FEES	$19,680

SUBMIT TWO COPIES OF THE COMPLETED APPLICATION TO:

New or Modified Permits (include fees):	**Permit Renewals (no fees):**
Oregon Department of Environmental Quality Business Office 811 SW Sixth Avenue Portland, OR 97204-1390	Oregon Department of Environmental Quality Air Quality Program, Eastern Region Office 475 NE Bellevue Suite 110 Bend, Oregon 97701

FACILITY DESCRIPTION

Facility Name: Coyote Island Terminal, LLC Permit Number: _____

1. Description of facility and processes:

Coyote Island Terminal, LLC plans to install a bulk transfer terminal at the Port of Morrow.

Coal will be delivered by railcar. Railcars will enter an unloading building which will be enclosed, except for entrance and exit doorways for the railcars. The entrance and exit of the unloading building are only marginally larger than the railcars to limit influence by ambient winds. Below-ground hoppers will receive the coal as it is unloaded via a rotary dump mechanism. The unloading building will incorporate an advanced dust extractor system, with air pickup vents on either side of the mouth of the receiving hopper, with the captured particulate matter directed to two wet scrubbers. A third identical wet scrubber may be installed based on actual conditions, if necessary.

Coal will be transferred via enclosed conveyors either directly to barge loadout on the Columbia River (via the bypass to Loadout Conveyor) or to one of three planned storage buildings. Water spray is employed at the conveyor drop points outside of the storage buildings as an additional emissions control. The storage pile drop and conveyor transfer emissions in the enclosed storage buildings will be controlled by wet scrubbers. Each storage building will be ventilated through five wet scrubbers. The scrubbers located nearest the location where bulk material is being loaded onto, or reclaimed from the storage pile will operate, up to three at a time. This system will achieve complete capture of the particulate emissions generated inside of the storage buildings.

Bulk material will be off-loaded onto below-deck cargo holds in newly-constructed barges via a telescoping retractable loading chute. The chute will minimize dust emissions by incorporating sensors that allow the shrouded tip of the chute to maintain close contact with the surface of the pile. Additionally, the internal design of the chute will minimize drop velocity, which will reduce dust formation.

The facility will utilize existing rail lines at the property. New structures will be constructed for housing the conveyors and coal storage piles. In-water upgrades will be performed in accordance with permitting through the Army Corps of Engineers. Stormwater will be collected in retention ponds with no offsite discharge.

3. Attach plot plan.

4. Attach process flow diagram.

5. Attach a city map or drawing showing the facility location.

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 2
2. Descriptive name: Material drop - Railcar Unloading Conveyor to Unloading Conveyor
3. Existing or future? Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

Material is dropped from the Railcar Unloading Conveyor (in an enclosed area beneath the Rotary Railcar Dumper Building) onto the first stage of the Unloading Conveyor.
All conveyors are enclosed.

Additional dust control at the drop point is provided by water spray.

(see enclosed Process Flow Diagram)

Operating Schedule

7. Seasonal or year-round? Year-round
8. Batch or continuous operation? Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760
11. Process/device capacity:

Raw materials	Short term capacity amount	Short term capacity units	Annual usage amount	Annual usage units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

MISCELLANEOUS PROCESS OR DEVICE

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 1
2. Descriptive name: Railcar Unloading to Railcar Unloading Conveyor
3. Existing or future?: Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

Material is unloaded from railcars in the Rotary Railcar Dumper Building through underground hoppers onto the Railcar Unloading Conveyor in an enclosed area beneath the Rotary Railcar Dumper Building (an open-ended enclosure).

(see enclosed Process Flow Diagram)

Material transfer emissions are controlled by enclosure around the process, and two identical wet scrubbers (WS-R01 and WS-R02). A third identical wet scrubber may be installed based on actual conditions, if necessary.

Operating Schedule

7. Seasonal or year-round?: Year-round
8. Batch or continuous operation?: Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760
11. Process/device capacity:

Raw materials	Short term capacity amount	Short term capacity units	Annual usage amount	Annual usage units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

Yes - WS-R01, WS-R02

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 4
2. Descriptive name: Material drop to Transfer Conveyor (x 2)
3. Existing or future?: Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

All conveyors are fully enclosed.
ID Number 4 represents two material drops, both within a fully enclosed Transfer Structure:
the material drop from the Unloading Conveyor directly to the first Transfer Conveyor (to Building 2), and the material from the first Transfer Conveyor to the Transfer Conveyor for Building 3. It is assumed that on a worst case hourly basis, 100% of the material would pass over each Transfer Conveyor to the furthest coal storage building. Annually, one-third of the material goes to each storage building.

Additional dust control at the drop points is provided by water spray.
(see enclosed Process Flow Diagram)

Operating Schedule

7. Seasonal or year-round?: Year-round
8. Batch or continuous operation?: Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760

11. Process/device capacity:

Raw materials	Short term capacity amount	Short term capacity units	Annual usage amount	Annual usage units
Coal (each drop point)	3,000	tons/hour		
Coal (total)			8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 5
2. Descriptive name: Material drop to Storage Building Tripper Conveyor, and/or Loadout Conveyor
3. Existing or future? Future
4. Date commenced: To be determined
5. Date installed/completed:
6. Description of process:

All conveyors are fully enclosed.
ID Number 5 represents two material drops, both within a fully enclosed Transfer Structure: the diverting of material from the Unloading Conveyor directly to the first stage of the Storage Building Tripper Conveyor, and/or the diverting of material from the Unloading Conveyor to the Loadout Conveyor (Bypass). The latter is not a component of the highest-emitting scenario.

Additional dust control at the drop points is provided by water spray.

(see enclosed Process Flow Diagram)

Operating Schedule

7. Seasonal or year-round? Year-round
8. Batch or continuous operation? Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760
11. Process/device capacity:

	Short term capacity		Annual usage	
Raw materials	amount	units	amount	units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

MISCELLANEOUS PROCESS OR DEVICE

FORM AQ230
ANSWER SHEET

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 6
2. Descriptive name: Material drop - Storage Building Tripper Conveyors to Material Storage Piles
3. Existing or future? Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

Processes are housed within the fully enclosed storage buildings.
Material is dropped from Storage Building Tripper Conveyors onto the material storage piles in each of the three Coal Storage Buildings.

(see enclosed Process Flow Diagram)

Each storage building is controlled using five wet scrubbers.

Operating Schedule

7. Seasonal or year-round? Year-round
8. Batch or continuous operation? Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760
11. Process/device capacity:

	Short term capacity		Annual usage	
Raw materials	amount	units	amount	units
Coal (each transfer point, max)	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

Yes - WS-01 through WS-15

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 3
2. Descriptive name: Material drop to Unloading Conveyor
3. Existing or future? Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

All conveyors are enclosed.
Material is dropped from the first stage of the Unloading Conveyor onto the second stage of the Unloading Conveyor within a fully enclosed Transfer Structure.

Additional dust control at the drop point is provided by water spray.

(see enclosed process flow diagram)

Operating Schedule

7. Seasonal or year-round? Year-round
8. Batch or continuous operation? Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760

11. Process/device capacity:

	Short term capacity		Annual usage	
Raw materials	amount	units	amount	units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 7
2. Descriptive name: Portal Reclaims and drop to Storage Reclaim Conveyors
3. Existing or future? Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

Portal Reclaims and Storage Reclaim Conveyors are housed within the fully enclosed storage buildings. Portal Reclaims move material that is dropped onto the storage piles towards, and drop material onto, the Storage Reclaim Conveyors.

(see enclosed Process Flow Diagram)

Each storage building is controlled using five wet scrubbers.

Operating Schedule

7. Seasonal or year-round? Year-round
8. Batch or continuous operation? Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760

11. Process/device capacity:

Raw materials	Short term capacity amount	Short term capacity units	Annual usage amount	Annual usage units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

Yes - WS-01 through WS-15

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 8
2. Descriptive name: Material drop: Storage Reclaim Conveyor to Loadout Conveyor
3. Existing or future?: Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

Conveyors are fully enclosed.
Material is dropped from the Storage Reclaim Conveyor to the fully enclosed Loadout Conveyor.

Additional dust control at the drop points is provided by water spray.

(see enclosed Process Flow Diagram)

Operating Schedule

7. Seasonal or year-round?: Year-round
8. Batch or continuous operation?: Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760

11. Process/device capacity:

	Short term capacity		Annual usage	
Raw materials	amount	units	amount	units
Coal (total)	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 9
2. Descriptive name: Material Drop: Loadout Conveyor to Transfer Conveyor
3. Existing or future?: Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

All conveyors are enclosed.
Material is dropped from the Loadout Conveyor onto the Transfer Conveyor within a fully enclosed Transfer Structure.

Additional dust control at the drop point is provided by water spray.

(see enclosed process flow diagram)

Operating Schedule

7. Seasonal or year-round?: Year-round
8. Batch or continuous operation?: Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760

11. Process/device capacity:

Raw materials	Short term capacity amount	Short term capacity units	Annual usage amount	Annual usage units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Number: 10
2. Descriptive name: Material drop: Transfer Conveyor to Barge Loading Conveyor
3. Existing or future?: Future
4. Date commenced: To be determined
5. Date installed/completed:

6. Description of process:

All conveyors are enclosed.
Material is dropped from the Transfer Conveyor onto the Barge Loading Conveyor within a fully enclosed Transfer Structure.

Additional dust control at the drop point is provided by water spray.

(see enclosed process flow diagram)

Operating Schedule

7. Seasonal or year-round?: Year-round
8. Batch or continuous operation?: Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760

11. Process/device capacity:

	Short term capacity		Annual usage	
Raw materials	amount	units	amount	units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

Facility Name: Coyote Island Terminal, LLC Permit Number:

Process Information

1. ID Nnmber: 11
2. Descriptive name: Material drop through Retractable Chute (RC-1) into Barge
3. Existing or future?: Future
4. Date commenced: To be determined
5. Date installed/completed:
6. Description of process:

Material is transferred from the enclosed Barge Loading Conveyor through the Retractable Chute RC-1 for loading into partially enclosed barges.

(see enclosed Process Flow Diagram)

The chute maintains contact with the material pile within the barge at all times to prevent excess dust during loadout. Dust is suppressed due to the chute maintaining close contact with the pile, and an internal design that reduces the material drop velocity.

Operating Schedule

7. Seasonal or year-round?: Year-round
8. Batch or continuous operation?: Continuous
9. Projected maximum hours/day: 24
10. Projected maximum hours/year: 8,760
11. Process/device capacity:

Raw materials	Short term capacity amount	Short term capacity units	Annual usage amount	Annual usage units
Coal	3,000	tons/hour	8,800,000	tons/year
Products				

12. Control device(s) (yes/no?) If yes, provide the ID number and complete and attached the applicable series AQ300 form(s).

No

OPERATION AND MAINTENACE PRACTICES

1. Facility Name: Coyote Island Terminal, LLC

2. Permit Number:

3. Emission Point or Fugitive Emission Source ID	4. Criteria Pollutants Emitted	5. Emission Level Depends on O&M (yes/no)	6. O&M Option Number(s) Selected	7. Describe specific O&M work practices or Emission Action Levels to ensure that the process, control device or fugitive emission source is operated and maintained at the highest reasonable efficiency and effectiveness to minimize emissions.
1	PM PM10 PM2.5	Yes	2 3 1	Monitor scrubber flowrate - Estimated design rate of 4 gpm at 23 PSI (each) - Daily Visually inspect exhaust point for emissions during active operations - Daily Inspect equipment for damage or excessive wear - Monthly
2,3,4,5,8,9,10	PM PM10 PM2.5	Yes	1	Inspect exteriors of conveyor enclosures and other enclosures for evidence of dust - Weekly
6,7	PM PM10 PM2.5	Yes	2 3 1	Monitor scrubber flowrate - Estimated design rate of 3 gpm at 23 PSI (each) - Daily Visually inspect exhaust point for emissions during active operations - Daily Inspect equipment for damage or excessive wear - Monthly
11	PM PM10 PM2.5	Yes	3 1	Visually inspect exhaust point for emissions during active operations - Daily Inspect equipment for damage or excessive wear - Monthly
		No		
		No		
		No		
		No		
		No		

Facility Name: Coyote Island Terminal, LLC

Permit Number:

1.	Control Device ID	WS-R01 **	WS-R02**	
2.	Process/Device(s) Controlled	1		
3.	Year installed			
4.	Manufacturer/Model No.	Engart/Type 46		
5.	Control Efficiency(%)	94.99, 98.4, 99.7***		
6.	Type of scrubber	Wet dust extractor		
7.	Is water re-circulated?	No		
8.	Design water flow rate (gpm)	4.0 (ea.)	(estimated)	
9.	Design water pressure (psig)	23	(estimated)	
10.	Design inlet gas flow rate (acfm)	25,000 (ea.)	(estimated)	
11.	Design pressure drop (inches of water)	to be determined		
12.	Inlet gas pretreatment? (yes/no) If yes, list control device ID and complete a separate control device form	Integrated wet prefilter		
13.	Describe any water treatment systems*	*		

* Attach additional pages, if necessary.

Devices will be installed upon commissioning of the facility.

* Water is not recirculated within the wet scrubber itself. All water will be collected and treated through a solids settling sump located onsite. Water will be recirculated to the scrubbers after passing through the settling sump.

** The railcar rotary unloading enclosure has two identical wet scrubbers. A third identical wet scrubber may be installed based on actual conditions, if necessary.

*** Control Efficiencies: PM2.5 = 94.99%, PM10 = 98.4%, PM = 99.7%

Facility Name: Coyote Island Terminal, LLC

Permit Number:

1.	Control Device ID	WS-01,02,03,04,05**	WS-06,07,08,09,10**	WS-11,12,13,14,15**
2.	Process/Device(s) Controlled	6, 7		
3.	Year installed			
4.	Manufacturer/Model No.	Engart/Type 33		
5.	Control Efficiency(%)	94.99, 98.4, 99.7***		
6.	Type of scrubber	Wet dust extractor		
7.	Is water re-circulated?	No		
8.	Design water flow rate (gpm)	3.0 (ea.)	(estimated)	
9.	Design water pressure (psig)	23	(estimated)	
10.	Design inlet gas flow rate (acfm)	25,000 (ea.)	(estimated)	
11.	Design pressure drop (inches of water)	to be determined		
12.	Inlet gas pretreatment? (yes/no) If yes, list control device ID and complete a separate control device form	Integrated wet prefilter		
13.	Describe any water treatment systems*	*		

* Attach additional pages, if necessary.

Devices will be installed upon commissioning of the facility.

* Water is not recirculated within the wet scrubber itself. All water will be collected and treated through a solids settling sump located onsite. Water will be recirculated to the scrubbers after passing through the settling sump.

** Each material storage building has five wet scrubbers that vent to atmosphere.
Building 1: WS-01, WS-02, WS-03, WS-04, WS-05
Building 2: WS-06, WS-07, WS-08, WS-09, WS-10
Building 3: WS-11, WS-12, WS-13, WS-14, WS-15
Emissions from each storage building have been aggregated into processes 6 and 7 .

*** Control Efficiencies: PM2.5 = 94.99%, PM10 = 98.4%, PM = 99.7%

Facility Name: Coyote Island Terminal, LLC *Permit Number:* _____

1. Emissions Point	Production Rates		4. Pollutant	Emissions Factors			Emissions	
	2. Short-term (Specify units)	3. Annual (Specify units)		5. Short-term	6. Long-term	7. Reference(s)	8. Short-term (Specify units)	9. Annual (tons/year)
See								
Attached								
Table 7								
Facility	Particulate	Emissions	Summary					
Example	200 tons of rock/hr	400,000 tons	PM	0.04 lb/ton	0.04 lb/ton	DEQ	8.0 lb/hr	8.0

Facility Name: Coyote Island Terminal, LLC Permit Number: _____

Emissions Data

1. Emissions Point	2. Annual Production Rate (specify units)	3. Pollutant	4. Emission Factor	5. EF reference	6. Annual Emissions (tons/yr)
See					
Attached					
Table 8					
Facility	Hazardous	Air Pollutant	Emissions Summary		

Applications for Standard ACDPs must also include the most recent Toxics Release Inventory report, if applicable (see instructions).

Oregon Department of Environmental Quality
LAND USE COMPATIBILITY STATEMENT (LUCS)

SECTION 1 - TO BE COMPLETED BY APPLICANT

A. Applicant Name: Coyote Island Terminal, LLC	**B. Project Name:** Morrow Pacific Bulk Terminal
Contact Name: Clark Moseley	**Physical Address:** See enclosed map
Mailing Address: 170 South Main Street, Suite 700	**City, State, Zip:** Boardman, OR 97818
City, State, Zip: Salt Lake City, UT, 84101	**Tax Lot #:** 100
Telephone: 801-539-3788 (this is the SLC office number)	**Township:** 4 N **Range:** 25 E **Section:** 2
Tax Account #: 32-0367202	**Latitude:** 45.8583 N
	Longitude: 119.6583 W

C. Describe the project, include the type of development, business, or facility and services or products provided (attach additional information if necessary):

Coyote Island Terminal, LLC plans to install a bulk transfer terminal at the Port of Morrow. Coal will be delivered by railcar and unloaded via rotary dump mechanism into an underground hopper. The railcar unloading building will incorporate an advanced dust extractor system, with the captured particulate matter directed to wet scrubbers for particulate removal. Coal will be transferred via enclosed conveyor to an enclosed storage area for subsequent off-loading to river barges on the Columbia River via covered conveyors. Dust generated within the enclosed storage buildings will be controlled by wet scrubbers. The off-loading of coal to below-deck cargo holds in newly-constructed barges will be via a telescoping loading chute designed for minimal dust generation. The facility will utilize existing rail lines at the property. New structures will be constructed for housing the conveyors and coal storage piles. In-water upgrades will be performed in accordance with permitting through the Army Corps of Engineers. Stormwater will be collected in retention ponds with no offsite discharge.

The property is zoned as Port Industrial.

D. Check the type of DEQ permit(s) or approval(s) being applied for at this time.

- ☐ Air Quality Notice of Construction
- ☑ Air Contaminant Discharge Permit *(excludes portable facility permits)*
- ☐ Air Quality Title V Permit
- ☐ Air Quality Indirect Source Permit
- ☐ Parking/Traffic Circulation Plan
- ☐ Solid Waste Land Disposal Site Permit
- ☐ Solid Waste Treatment Facility Permit
- ☐ Solid Waste Compost Facility Registration or Permit
- ☐ Solid Waste Letter Authorization Permit
- ☐ Solid Waste Material Recovery Facility Permit
- ☐ Solid Waste Energy Recovery Facility Permit
- ☐ Solid Waste Transfer Station Permit
- ☐ Waste Tire Storage Site Permit
- ☐ Pollution Control Bond Request
- ☐ Hazardous Waste Treatment, Storage, or Disposal Permit
- ☐ Clean Water State Revolving Fund Loan Request
- ☐ Wastewater/Sewer Construction Plan/Specifications *(includes review of plan changes that require use of new land)*
- ☐ Water Quality NPDES Individual Permit
- ☐ Water Quality WPCF Individual Permit *(for onsite construction-installation permits use the DEQ Onsite LUCS form)*
- ☐ Water Quality NPDES Stormwater General Permit *(1200-A, 1200-C, 1200-CA, 1200-COLS, and 1200-Z)*
- ☐ Water Quality General Permit *(all general permits, except 600, 700-PM, 1700-A, and 1700-B when they are mobile.)*
- ☐ Water Quality 401 Certification for federal permit or license

E. This application is for: ☐ Permit Renewal ☑ New Permit ☐ Permit Modification ☐ Other:

SECTION 2 - TO BE COMPLETED BY CITY OR COUNTY PLANNING OFFICIAL

Instructions: Written findings of fact for all local decisions are required; written findings from previous actions are acceptable. For uses allowed outright by the acknowledged comprehensive plan, DEQ will accept written findings in the form of a reference to the specific plan policies, criteria, or standards that were relied upon in rendering the decision with an indication of why the decision is justified based on the plan policies, criteria, or standards.

A. The project proposal is located: ☐ Inside city limits ☐ Inside UGB ☑ Outside UGB

B. Name of the city or county that has land use jurisdiction *(the legal entity responsible for land use decisions for the subject property or land use)*:

Morrow County

SECTION 2 - TO BE COMPLETED BY CITY OR COUNTY PLANNING OFFICIAL

Applicant Name: Coyote Island Terminal, LLC | **Project Name:** Morrow Pacific Bulk Terminal

C. Is the activity or use allowed under Measure 49? ☑ No, Measure 49 is not applicable ☐ Yes; if yes, then check one:

☐ Express; approved by DLCD order #:

☐ Conditional; approved by DLCD order #:

☐ Vested; approved by local government decision or court judgment docket or order #:

D. Is the activity or use compatible with your acknowledged comprehensive plan as required by OAR 660-031?
Please complete this form to address the activity or use for which the applicant is seeking approval (see 1.C on the previous page). If the activity or use is to occur in multiple phases, please ensure that your approval addresses the phases described in 1.C. For example, if the applicant's project is described in 1.C as a subdivision and the LUCS indicates that only clearing and grading are allowed outright but does not indicate whether the subdivision is approved, DEQ will delay permit issuance until approval for the subdivision is obtained from the local planning official.

☐ The activity or use is not regulated by the acknowledged comprehensive plan; explain:

☐ **YES,** the activity or use is pre-existing nonconforming use allowed outright by *(provide reference for local ordinance)*:

☑ **YES,** the activity or use is allowed outright by *(provide reference for local ordinance)*:
Morrow County Zoning Ordinance Article 3 Section 3.073 Port Industrial

☐ **YES,** the activity or use received preliminary approval that includes requirements to fully comply with local requirements; findings are attached.

☐ **YES,** the activity or use is allowed; findings are attached.

☐ **NO,** see 2.C above, activity or use allowed under Measure 49; findings are attached.

☐ **NO,** *(complete below or attach findings for noncompliance and identify requirements the applicant must comply with before compatibility can be determined)*:
Relevant specific plan policies, criteria, or standards:

Provide the reasons for the decision:

Additional comments (attach additional information as needed):

Planning Official Signature: Carla McLane **Title:** Planning Director

Print Name: Carla McLane **Telephone #:** 541-922-4624 **Date:** July 24, 2012

If necessary, depending upon city/county agreement on jurisdiction outside city limits but within UGB:

Planning Official Signature: **Title:**

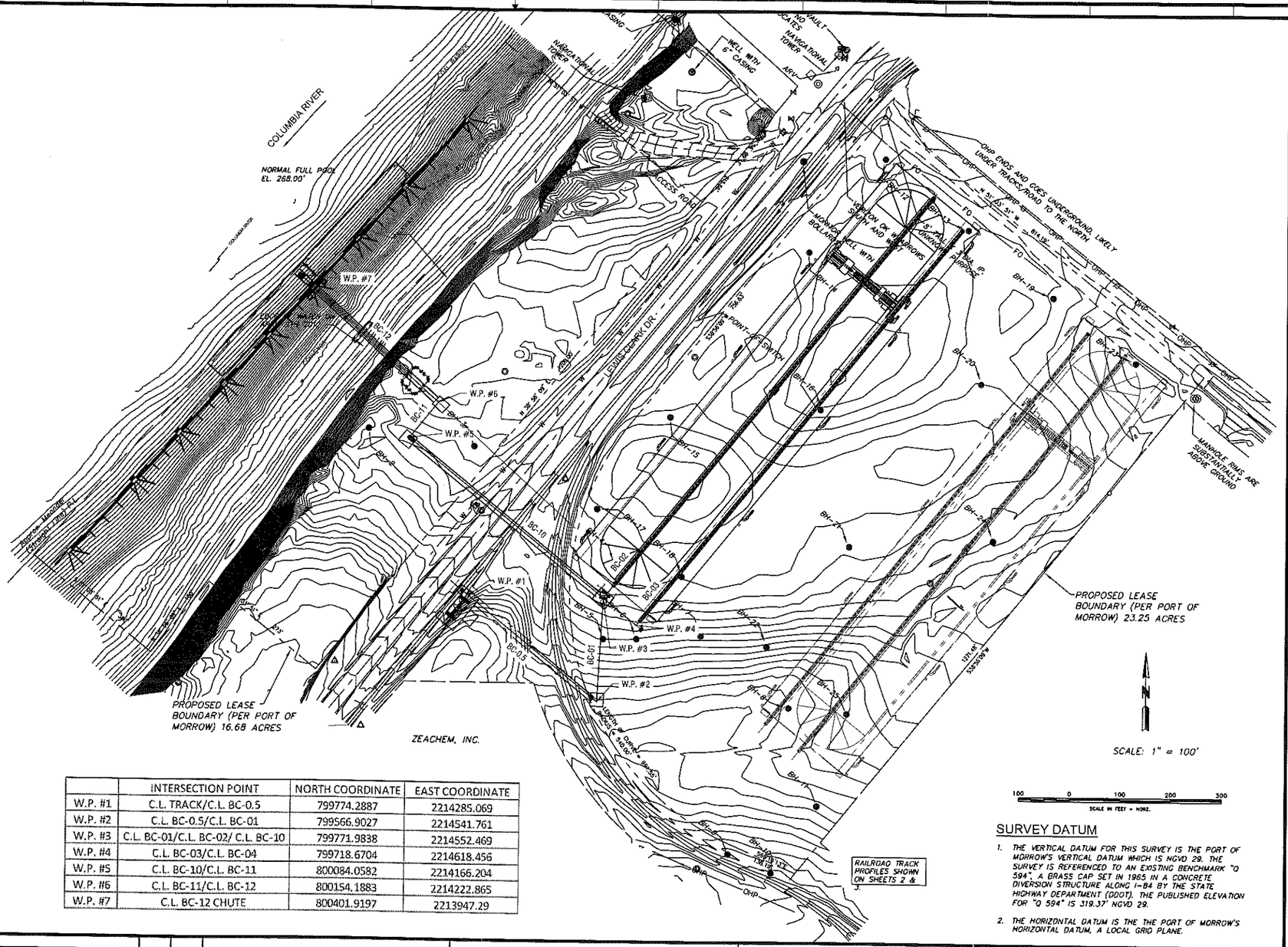
Print Name: **Telephone #:** **Date:**

APPENDIX B

PRELIMINARY PLOT PLAN

LEGEND

- BOLLARD
- CONTROL
- LIGHT
- WELL — BH-21
- BORE HOLE STAKE
- WATER VALVE
- FIRE HYDRANT
- WATER/AIR RELEASE VALVE
- SEWER MANHOLE
- POWER POLE
- GUY WIRE
- TELEPHONE PEDESTAL
- ELECTRICAL PEDESTAL
- SIGN
- MONUMENT
- WATER LINE — W — W —
- OVERHEAD POWER — OHP — OHP —
- UNDERGROUND FIBER OPTIC — FO —
- CREEK/DITCH CENTERLINE AND FLOW DIRECTION
- GRAVEL DRIVEWAY/STREET
- PAVED DRIVEWAY/STREET
- CENTERLINE
- CHAINLINK FENCE
- INDEX CONTOUR — 285 —
- INTERMEDIATE CONTOUR
- EDGE OF WATER
- RAIL ROAD
- LEASE LINE



	INTERSECTION POINT	NORTH COORDINATE	EAST COORDINATE
W.P. #1	C.L. TRACK/C.L. BC-0.5	799774.2887	2214285.069
W.P. #2	C.L. BC-0.5/C.L. BC-01	799566.9027	2214541.761
W.P. #3	C.L. BC-01/C.L. BC-02/ C.L. BC-10	799771.9838	2214552.469
W.P. #4	C.L. BC-03/C.L. BC-04	799718.6704	2214618.456
W.P. #5	C.L. BC-10/C.L. BC-11	800084.0582	2214166.204
W.P. #6	C.L. BC-11/C.L. BC-12	800154.1883	2214222.865
W.P. #7	C.L. BC-12 CHUTE	800401.9197	2213947.29

SURVEY DATUM

1. THE VERTICAL DATUM FOR THIS SURVEY IS THE PORT OF MORROW'S VERTICAL DATUM WHICH IS NGVD 29. THE SURVEY IS REFERENCED TO AN EXISTING BENCHMARK "Q 594", A BRASS CAP SET IN 1965 IN A CONCRETE DIVERSION STRUCTURE ALONG I-84 BY THE STATE HIGHWAY DEPARTMENT (ODOT). THE PUBLISHED ELEVATION FOR "Q 594" IS 319.37' NGVD 29.
2. THE HORIZONTAL DATUM IS THE THE PORT OF MORROW'S HORIZONTAL DATUM, A LOCAL GRID PLANE.

REVISION	BY	DATE
DESIGNED BY		
DRAWN BY	XREFS: ??	
REVIEWED BY		

HORZ. SCALE 1" = 100' | VERT. SCALE NONE
JOB NUMBER 1199-462 | DATE 2012
ACAD FILE: SURVEY_MORO_PAC_BASE-RAILPRO.DWG

THIS DRAWING HAS BEEN REDUCED 50%. ADJUST SCALE ACCORDINGLY. BARSCALE SHOWN IS ACCURATE.

PRELIMINARY

anderson perry & associates, inc.
engineering • surveying • natural resources
LA GRANDE, OR. WALLA WALLA, WA.

PORT OF MORROW
MORROW PACIFIC PROJECT

SITE PLAN

SHEET 1

NOT FOR CONSTRUCTION

REV	DATE	DESCRIPTION	DRID	BY	APPR

TAGGART
TAGGART GLOBAL, LLC
4000 TOWN CENTER BLVD
SUITE 200
CANONSBURG, PA 15317

SCALE FOR 24"x36" PLOT ONLY: NONE

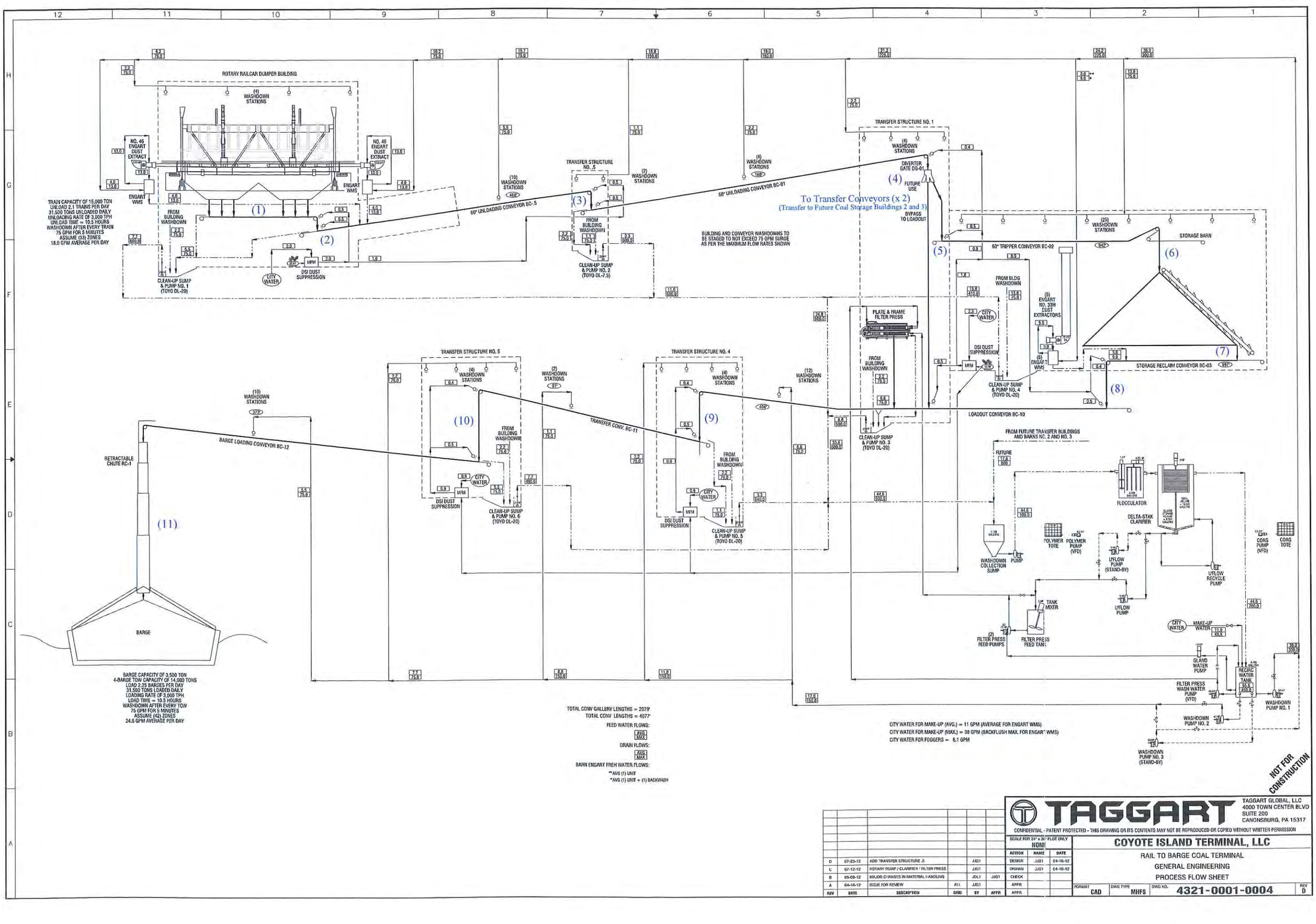
DESIGN	-	-
DRAWN	-	-
CHECK	-	-
APPR	-	-
APPR	-	-

COYOTE ISLAND TERMINAL, LLC
RAIL TO BARGE COAL TERMINAL
GENERAL ENGINEERING
UNIT LIST

FORMAT	DWG TYPE	DWG NO.	REV
CAD	UL	4321-0001-NW update	

APPENDIX C

PRELIMINARY PROCESS FLOW DIAGRAM



REV	DATE	DESCRIPTION	GRID	BY	APPR
D	07-23-12	ADD TRANSFER STRUCTURE 5		JJG1	
C	07-12-12	ROTARY DUMP / CLARIFIER / FILTER PRESS		JJG1	
B	05-08-12	MAJOR CHANGES IN MATERIAL HANDLING		JDL1	JJG1
A	04-16-12	ISSUE FOR REVIEW	ALL	JJG1	

TAGGART

TAGGART GLOBAL, LLC
4000 TOWN CENTER BLVD
SUITE 200
CANONSBURG, PA 15317

SCALE FOR 24"x 36" PLOT ONLY: NONE

ACTION	NAME	DATE
DESIGN	JJG1	04-16-12
DRAWN	JJG1	04-16-12
CHECK		
APPR		
APPR		

COYOTE ISLAND TERMINAL, LLC

RAIL TO BARGE COAL TERMINAL
GENERAL ENGINEERING
PROCESS FLOW SHEET

FORMAT	DWG TYPE	DWG NO.	REV
CAD	MHFS	4321-0001-0004	D

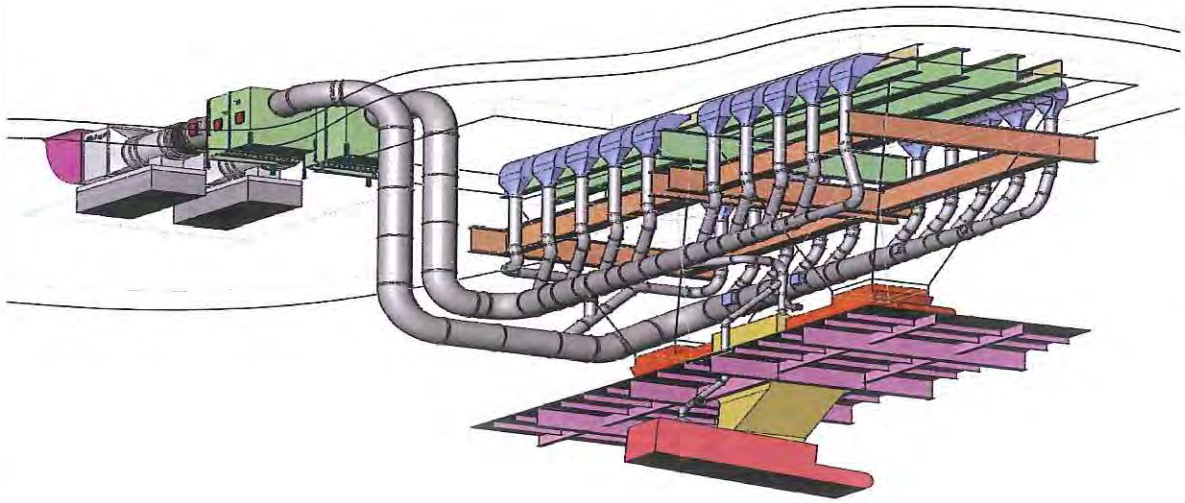
APPENDIX D

VENDOR INFORMATION - RAILCAR UNLOADING DUST EXTRACTOR EQUIPMENT

P.O. Box 1124 • Beckley, WV 25802 • Tel: 304-253-0777 • Fax: 304-253-0719 • E-mail: sales@engartinc.com

1. Railcar Unloading Dust Extractor Equipment:

Description of System: System to include two (2) Engart Type 46 Dust Extractor Units and two (2) Inlet Pre-Filter Assembly boxes connected to individual ductwork manifolds with collection hoods located along the length of each side of the rail car. Each Engart unit will pull exhaust ventilation and dust extraction independently from each side of the rail car. A conceptual design of the duct and equipment arrangement is shown below:



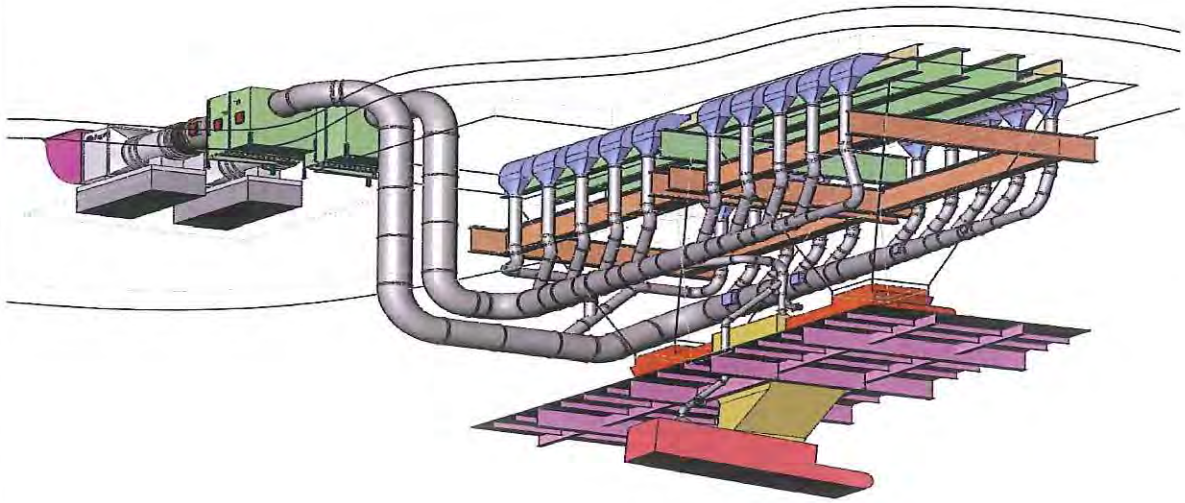
2. Equipment Listing for Railcar Unloading DE System

- Engart Type 46 Unit (Motor: 200 hp, 460volt TEFC) – Two Total – See attached equipment specification sheet for details.
- WetFlow pre-filter box – Quantity Two (2) – 110v required for water solenoids, water use approximately 3-4gpm at 23psi
- Alan Bradley MicroLogix 1500 PLC, NEMA 4X enclosure, water supply electrical solenoids valves, pressure regulator, pressure switch and airflow switch. 110 volt

P.O. Box 1124 • Beckley, WV 25802 • Tel: 304-253-0777 • Fax: 304-253-0719 • E-mail: sales@engartinc.com

1. Railcar Unloading Dust Extractor Equipment:

Description of System: System to include two (2) Engart Type 46 Dust Extractor Units and two (2) Inlet Pre-Filter Assembly boxes connected to individual ductwork manifolds with collection hoods located along the length of each side of the rail car. Each Engart unit will pull exhaust ventilation and dust extraction independently from each side of the rail car. A conceptual design of the duct and equipment arrangement is shown below:



2. Equipment Listing for Railcar Unloading DE System

- Engart Type 46 Unit (Motor: 200 hp, 460volt TEFC) – Two Total – See attached equipment specification sheet for details.
- WetFlow pre-filter box – Quantity Two (2) – 110v required for water solenoids, water use approximately 3-4gpm at 23psi
- Alan Bradley MicroLogix 1500 PLC, NEMA 4X enclosure, water supply electrical solenoids valves, pressure regulator, pressure switch and airflow switch. 110 volt

APPENDIX E

VENDOR INFORMATION - SCRUBBERS

Engart

Dust Extraction Technology

P.O. Box 1124 • Beckley, WV 25802 • Tel: 304-253-0777 • Fax: 304-253-0719 • E-mail: sales@engartamerica.com

Technical Specification Sheet

Engart Dust Extractor
Particle extraction efficiency
(No Pre-Filter, Engart unit only)

An isokinetic sampling test based the Appendix to the Code of Federal Regulations, Title 40, Chapter 1, Part 60, Methods 1, 2, 3A, 4, and 5 was performed to determine the particle extraction efficiency of the Engart Dust Extractor. Water flow rate to the Engart unit was monitored throughout the test to ensure the minimum water flow rate (as specified in the Engart Dust Extractor Technical Specification sheet) was maintained.

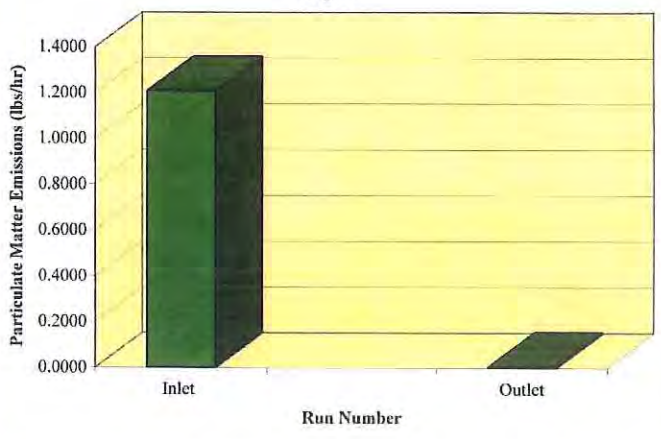
The emission results are presented in grains per dry standard cubic feet (gr/dscf) and pounds per hour (lbs/hr). Powder River Basin (PRB) coal fines were used as the test particulate matter. Below is a summary of the test results.

SUMMARY OF RESULTS
Engart Dust Collector

Table 1

	Particulate Matter Emissions (gr/dscf)
Inlet	1.2083
Outlet	0.0037
Collection Efficiency	99.6938%

Graph 1



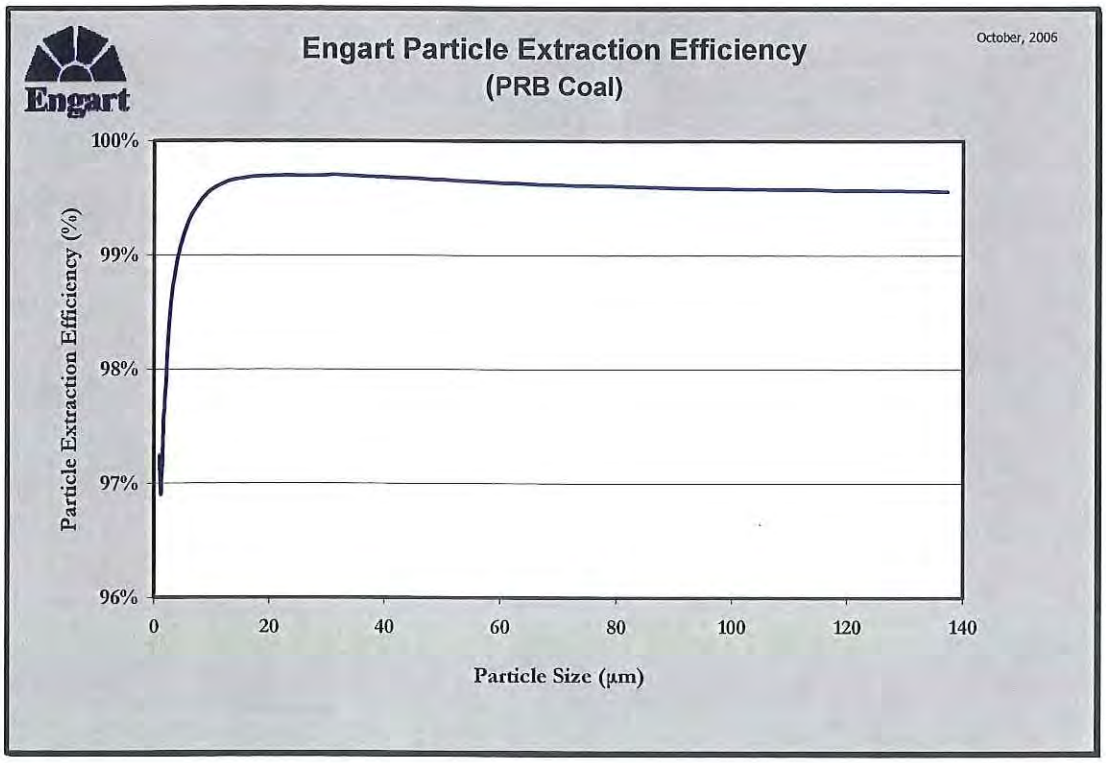
P.O. Box 1124 • Beckley, WV 25802 • Tel: 304-253-0777 • Fax: 304-253-0719 • E-mail: sales@engartamerica.com

Table 1
Particulate Sampling Data

	Inlet	Outlet
Date	10/24/06	10/24/06
Time	1110 -1220	1110 -1230
Carbon Dioxide Cone. -% Vol.	0.03	0.03
Oxygen Concentration -%Vol.	20.95	20.95
Stack Pressure -"Hg	31.00	31.00
Area of Stack -Sq. in.	254.50	452.40
Volume Dry Gas Sampled -dscf	22.628	37.033
Volume Dry Gas Sampled -dscm	0.641	1.049
Stack Temperature -Deg. F	59.90	60.70
Percent Moisture -%	2.44	1.99
Velocity in the Stack -FPS	32.18	20.70
Volumetric Flow Rate -ACFM	3,413	3,909
Volumetric Flow Rate -DSCFM	3,504	4,025
Isokinetic Sampling Rate -%	99.8	91.9
Particulate Matter Concentrations -gr/acf	1.2406	0.0038
Particulate Matter Concentrations -gr/dscf	1.2083	0.0037
Particulate Matter Emissions -lbs/hr	36.28	0.13

P.O. Box 1124 • Beckley, WV 25802 • Tel: 304-253-0777 • Fax: 304-253-0719 • E-mail: sales@engartamerica.com

Graph 1: Particle extraction efficiency versus particle size.



Overall, PM10 and PM2.5 particle extraction efficiency:

Analysis of graph 1 above shows the following Total, PM10 and PM2.5 particle extraction efficiency results:

Overall particle extraction efficiency: 99.7 %

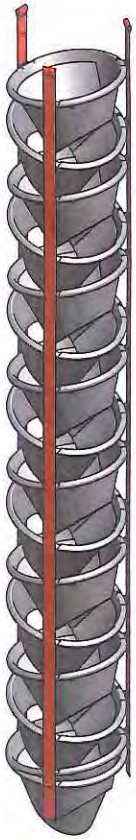
PM10 particle extraction efficiency: 98.4%

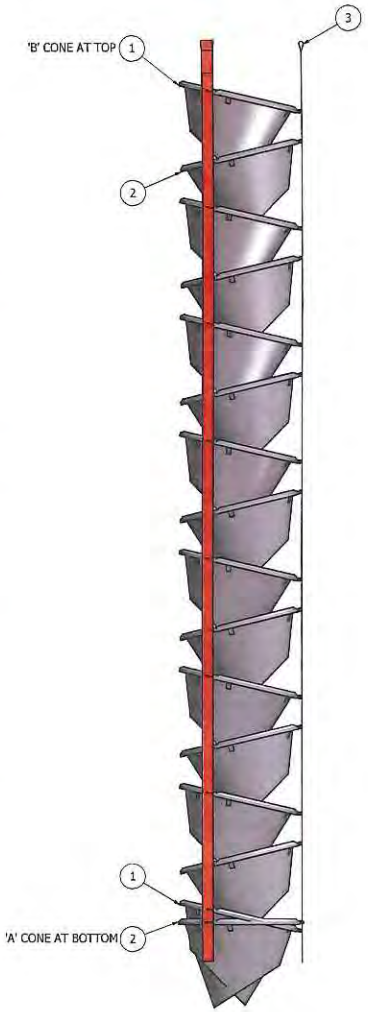
PM2.5 particle extraction efficiency: 94.99%

APPENDIX F

VENDOR INFORMATION – LOADING CHUTE

CCL PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS
1	8	45100229	CONE 1350S GRP 'B' PROFILED RIM WITH 6mm CERAMIC LINER	46.4 kg
2	8	45100228	CONE 1350S GRP 'A' PROFILED RIM WITH 6mm CERAMIC LINER	46.4 kg
3	1	45120336	STROPS 666 (57.5° x 720mm) TO SS-666-001	22.2 kg





DO NOT SCALE - IF IN DOUBT ASK

TOTAL MASS: N/A

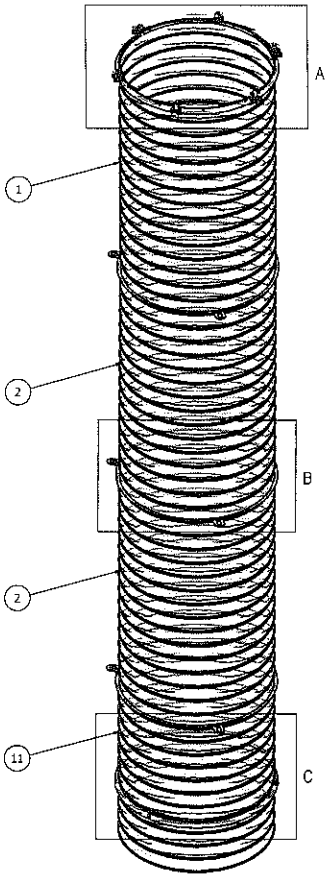
NOTE: THE FOLLOWING TOLERANCES APPLY U.N.O.

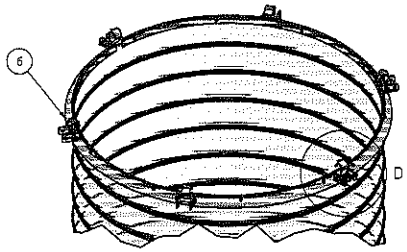
DRAWING STATUS	Released for Manufacture		
Designed by	Checked by	Approved by	Date
M.O'NEILL	Richard Buckley		

CLEVELAND CASCADES LTD
Unit 22 Dukeway Teesside Industrial Estate
Thornaby Stockton-on-Tees TS17 9LT
United Kingdom
T: +44(0)1642 753 260 F: +44(0)1642 753270
www.clevelandcascades.co.uk

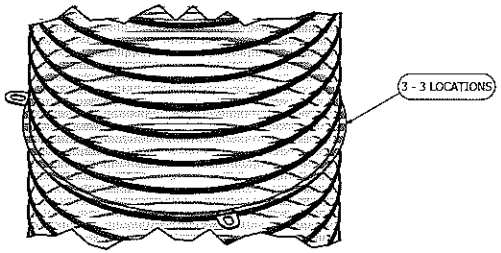
PROJECT	B & W (0666)
TITLE	CASCADE CHUTE ASSEMBLY
A1	
DWG No.	45100224
Sheet	1 /1
REV	A

CCL PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS
1	1	45200032	SHROUD Top Section 1300/1350S Extraction type to FR-INT-013 (With Galv Rings)	49.5 kg
2	2	45210046	SHROUD 3m Int Section 1300/1350S Extraction type to FR-INT-014 (With Galv Rings)	49.5 kg
3	3	45230057	1300S SHROUD CONNECTING RING ASSEMBLY	29.8 kg
4	1	45240006	SHROUD Bottom "L" Ring 1300S M/Steel Galv to FR-SC-171	44.4 kg
5	1	45240002	RATCHET ST/STEEL WITH VIOLET SLING WEBBING 7.5M LG X 25MM W	0.0 kg
6	1	45200050	1300S SHROUD TOP RING ASSEMBLY - GALV	45.9 kg
7	2	45290066	SHROUD LIFTING ROPE ATTACHMENT	0.0 kg
8	2	10300062	HEX HEAD BOLT M16 x 120	0.2 kg
9	4	10300047	WASHER - FLAT M16	0.0 kg
10	2	10300048	NYLOC NUT M16	0.0 kg
11	1	45210048	SHROUD 2m Int Section 1300/1350S Extraction type to FR-INT-015 (With Galv Rings)	34.9 kg

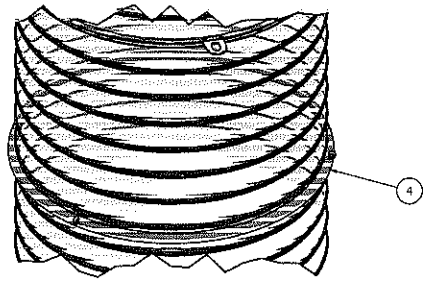




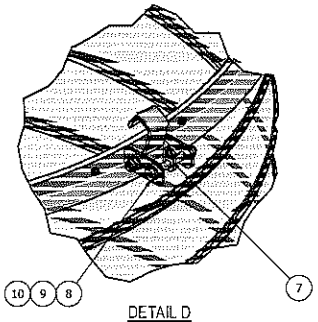
DETAIL A
(1:15)



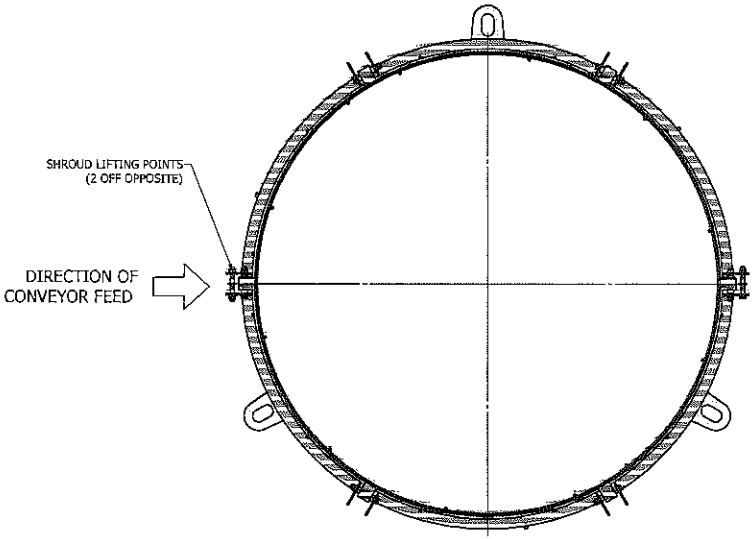
DETAIL B
(1:15)



DETAIL C
(1:15)



DETAIL D
(1:5)



PLAN ON SHROUD SHOWING ORIENTATION
OF SHROUD TOP RING & CONNECTING RING
(1:10)

DO NOT SCALE - IF IN DOUBT ASK

TOTAL MASS: N/A

NOTE: THE FOLLOWING TOLERANCES APPLY U.N.O.

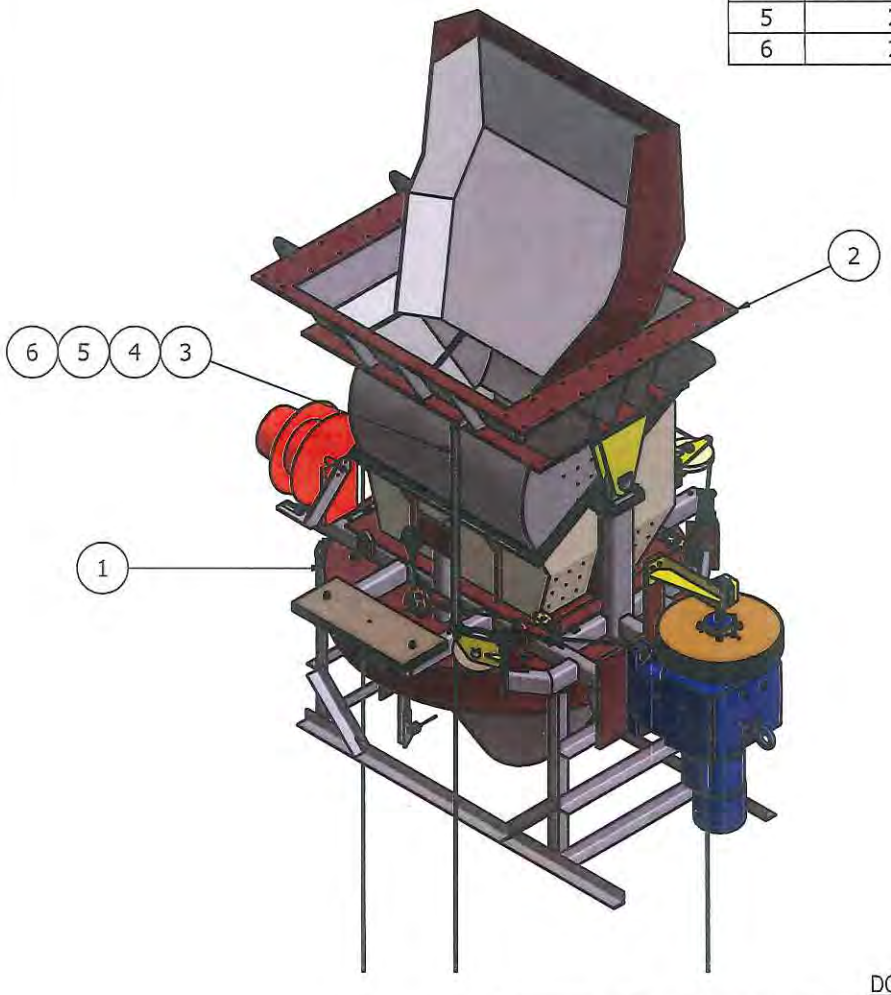
CLEVELAND CASCADES LTD
Unit 22 Dukeway Teesside Industrial Estate
Thornaby Stockton on Tees TS17 9LT
United Kingdom
T: +44(0)1642 753 265 F: +44(0)1642 753 221
www.clevelandcascades.co.uk

	Designed by	Checked by	Approved by	Date
	M.O'NEILL	Jonathan Harbron		

DRAWING STATUS	Released for Manufacture
PROJECT	B & W (0666)
TITLE	1350S SHROUD ASSEMBLY 11m LONG - MAIN FOR CC666
A1	
DWG No:	45280021 Sheet 1 /1 REV A

CCL PARTS LIST

ITEM	QTY	PART NUMBER	DESCRIPTION	MATERIAL	MASS
1	1	45300382	PIVOTING HEAD CHUTE ASSEMBLY		2230.5 kg
2	1	45300379	FIXED HEAD CHUTE ASSEMBLY		946.0 kg
3	1247.000 mm	45340172	PIVOT LOCK BAR x 1207 LG	Steel, Mild	4.7 kg
4	4	10300027	WASHER - FLAT M12	Galvanized Steel	0.0 kg
5	2	10300101	HEX HEAD SETSCREW M12 x 35	Galvanized Steel 8.8	0.0 kg
6	2	10300028	NYLOC NUT M12	Galvanized Steel 8.8	0.0 kg



DO NOT SCALE - IF IN DOUBT ASK

TOTAL MASS: N/A

NOTE: THE FOLLOWING TOLERANCES APPLY U.N.O.

FAB ITEMS:	MACHINED ITEMS:	HOLE CENTRES:
< 1000mm +/-2mm 1001 TO 3000mm +/-3mm 3001 TO 5000mm +/-5mm	< 100mm +/-0.25mm 100 TO 300mm +/-0.5mm 300 TO 1000mm +/-1mm	POSITIONAL TOLERANCE OF +/- 1mm SIZE +/- 0.25

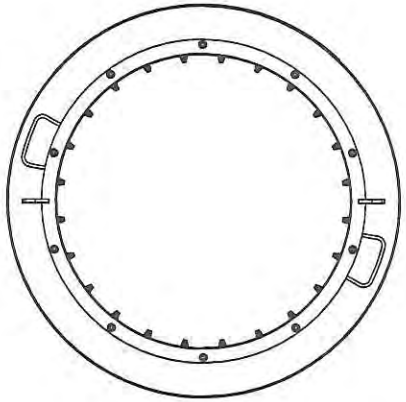
CLEVELAND CASCADES LTD
Unit 22 Dukesway Teesside Industrial Estate
Thornaby Stockton on Tees TS17 9LT
United Kingdom
T:+44(0)1642 753 260 F:+44(0)1642 753270
www.clevelandcascades.co.uk

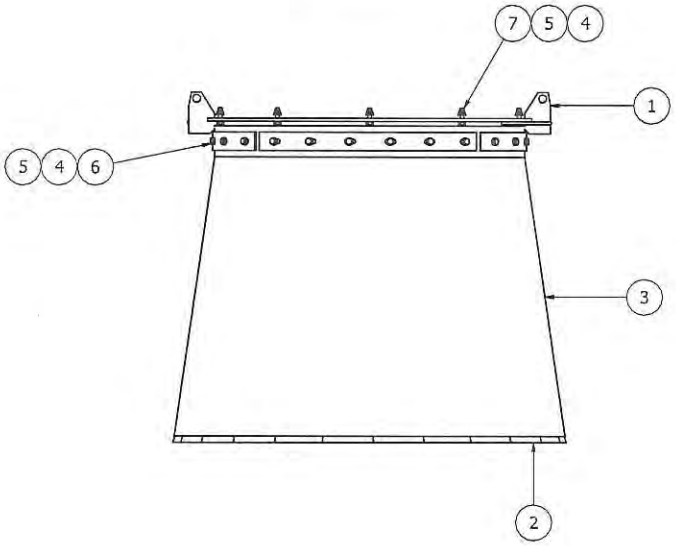
DRAWING STATUS	Released for Manufacture

Designed by	Checked by	Approved by	Date
M.O'NEILL	Jonathan Harbron		

PROJECT	B & W (0666)
TITLE	HEAD CHUTE COMPLETE ASSEMBLY
A3	
DWG No:	45300377
Sheet	1 /1
REV	A

CCL PARTS LIST				
ITEM	QTY	PART NUMBER	DESCRIPTION	MASS
1	1	45640009	Skirt Ring 1300S & 1500S TO FR-SC-167A	28.057 kg
2	24	45640070	SKIRT RUBBER 1000mm LONG TO SC-083 FROM 4646-0007 TO SUIT 1300S SKIRT	2.609 kg
3	1	45650001	SKIRT CANVAS 1300S/1500S (1000mm LONG) TO FR-SC-093 D	6.000 kg
4	68	10300027	WASHER - FLAT M12	0.006 kg
5	34	10300028	NYLOC NUT M12	0.016 kg
6	24	10300242	HEX HEAD BOLT M12 x 55	0.067 kg
7	10	10300036	HEX HEAD BOLT M12 x 45	0.058 kg





DO NOT SCALE - IF IN DOUBT ASK

TOTAL MASS: N/A

NOTE: THE FOLLOWING TOLERANCES APPLY U.N.O.

FAB ITEMS:	MACHINED ITEMS:	HOLE CENTRES' POSITIONAL TOLERANCE OF +/- 1mm
< 1000mm +/-2mm 1001 TO 3000mm +/-3mm 3001 TO 5000mm +/-5mm	< 100mm +/-0.25mm 100 TO 300mm +/-0.5mm 300 TO 1000mm +/-1mm	SIZE +/-0.25

DRAWING STATUS	Released for Manufacture

Designed by	Checked by	Approved by	Date
Peter Luke	Richard Buckley		

CLEVELAND CASCADES LTD
Unit 22 Dukesway Teesside Industrial Estate
Thornaby Stockton on Tees TS17 9LT
United Kingdom
T:+44(0)1642 753 260 F:+44(0)1642 753270
www.clevelandcascades.co.uk

PROJECT	In House ()
TITLE	1300S AND 1500S 1.0m SKIRT ASSEMBLY
A2	
DWG No:	45640069 Sheet 1/1 REV A

At Golder Associates we strive to be the most respected global group of companies specializing in ground engineering and environmental services. Employee owned since our formation in 1960, we have created a unique culture with pride in ownership, resulting in long-term organizational stability. Golder professionals take the time to build an understanding of client needs and of the specific environments in which they operate. We continue to expand our technical capabilities and have experienced steady growth with employees now operating from offices located throughout Africa, Asia, Australasia, Europe, North America and South America.

Africa	+ 27 11 254 4800
Asia	+ 852 2562 3658
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 55 21 3095 9500

solutions@golder.com
www.golder.com

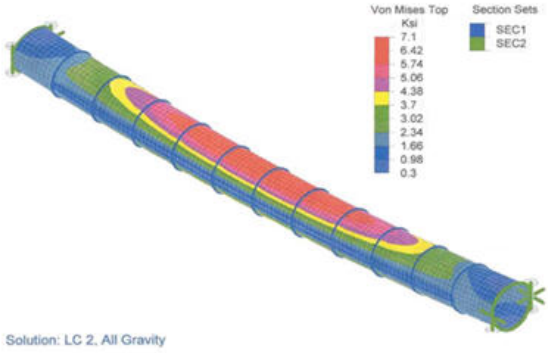
Golder Associates Inc.
9 Monroe Parkway, Suite 270
Lake Oswego, OR 97035 USA
Tel: (503) 607-1820
Fax: (503) 607-1825

Golder Associates

Exhibit E

Tubular Galleries

DMW has designed and installed tubular galleries up to 13'-0" in diameter.



Stress Analysis of Tubular Gallery

Petroleum Coke Handling System

Dearborn Mid-West Company | Michigan Operations: 734-288-4400 | Kansas Operations: 913-384-9950

Exhibit F

Redispan Modular Conveyor Solutions ®

Patents Apply

Mangoola

COAL PROJECT

Exhibit G

13.4 Wet Cooling Towers

13.4.1 General[1]

Cooling towers are heat exchangers that are used to dissipate large heat loads to the atmosphere. They are used as an important component in many industrial and commercial processes needing to dissipate heat. Cooling towers may range in size from less than $5.3(10)^6$ kilojoules (kJ) ($5[10]^6$ British thermal units per hour [Btu/hr]) for small air conditioning cooling towers to over $5275(10)^6$ kJ/hr ($5000[10^6]$ Btu/hr) for large power plant cooling towers.

When water is used as the heat transfer medium, wet, or evaporative, cooling towers may be used. Wet cooling towers rely on the latent heat of water evaporation to exchange heat between the process and the air passing through the cooling tower. The cooling water may be an integral part of the process or may provide cooling via heat exchangers.

Although cooling towers can be classified several ways, the primary classification is into dry towers or wet towers, and some hybrid wet-dry combinations exist. Subclassifications can include the draft type and/or the location of the draft relative to the heat transfer medium, the type of heat transfer medium, the relative direction of air movement, and the type of water distribution system.

In wet cooling towers, heat transfer is measured by the decrease in the process temperature and a corresponding increase in both the moisture content and the wet bulb temperature of the air passing through the cooling tower. (There also may be a change in the sensible, or dry bulb, temperature, but its contribution to the heat transfer process is very small and is typically ignored when designing wet cooling towers.) Wet cooling towers typically contain a wetted medium called "fill" to promote evaporation by providing a large surface area and/or by creating many water drops with a large cumulative surface area.

Cooling towers can be categorized by the type of heat transfer; the type of draft and location of the draft, relative to the heat transfer medium; the type of heat transfer medium; the relative direction of air and water contact; and the type of water distribution system. Since wet, or evaporative, cooling towers are the dominant type, and they also generate air pollutants, this section will address only that type of tower. Diagrams of the various tower configurations are shown in Figure 13.4-1 and Figure 13.4-2.

13.4.2 Emissions And Controls[1]

Because wet cooling towers provide direct contact between the cooling water and the air passing through the tower, some of the liquid water may be entrained in the air stream and be carried out of the tower as "drift" droplets. Therefore, the particulate matter constituent of the drift droplets may be classified as an emission.

The magnitude of drift loss is influenced by the number and size of droplets produced within the cooling tower, which in turn are determined by the fill design, the air and water patterns, and other interrelated factors. Tower maintenance and operation levels also can influence the formation of drift droplets. For example, excessive water flow, excessive airflow, and water bypassing the tower drift eliminators can promote and/or increase drift emissions.

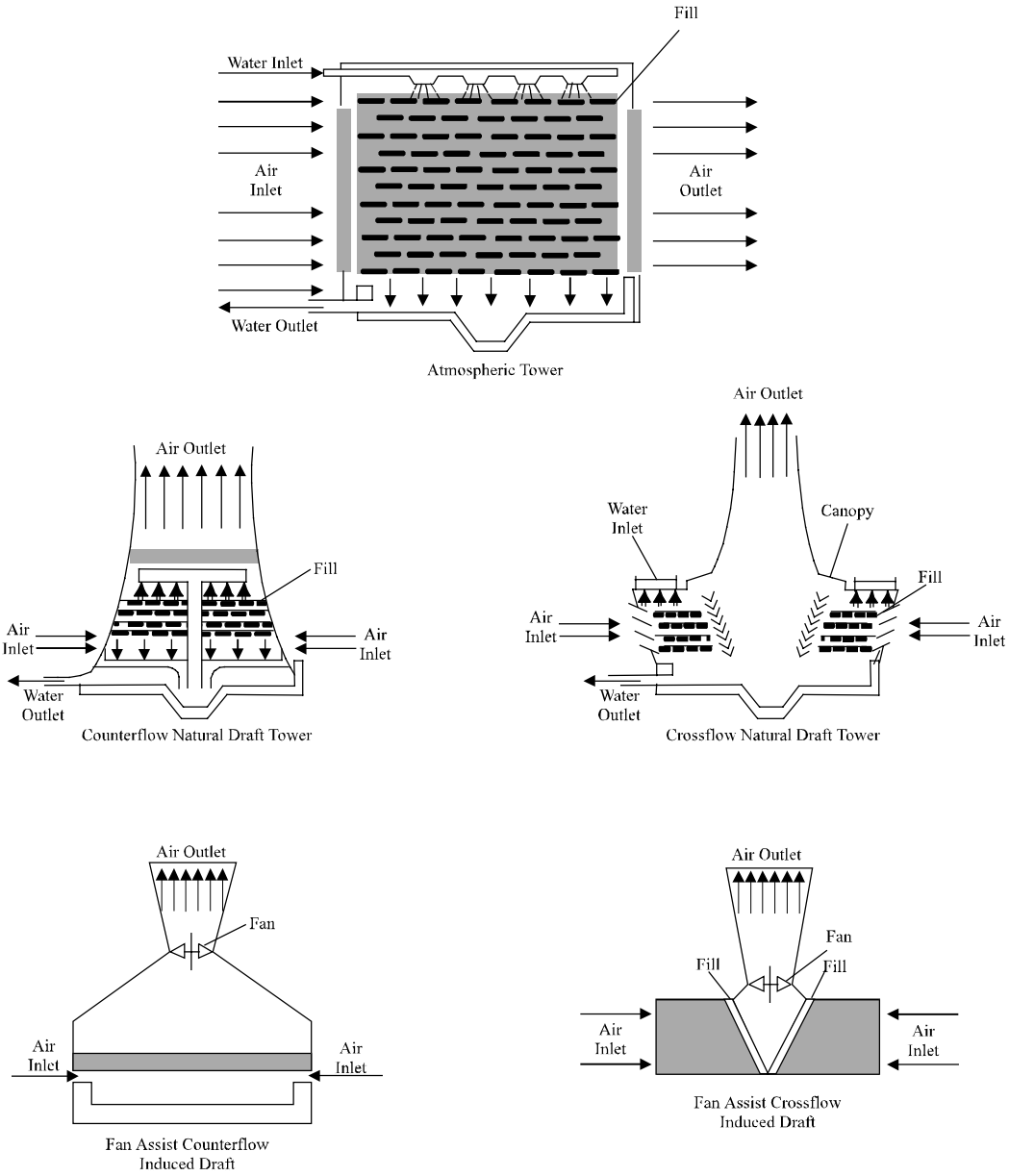


Figure 13.4-1 Atmospheric and natural draft cooling towers.

Because the drift droplets generally contain the same chemical impurities as the water circulating through the tower, these impurities can be converted to airborne emissions. Large drift droplets settle out of the tower exhaust air stream and deposit near the tower. This process can lead to wetting, icing, salt deposition, and related problems such as damage to equipment or to vegetation. Other drift droplets may evaporate before being deposited in the area surrounding the tower, and they also can produce PM-10 emissions. PM-10 is generated when the drift droplets evaporate and leave fine particulate matter formed by crystallization of dissolved solids. Dissolved solids found in cooling tower drift can consist of mineral matter, chemicals for corrosion inhibition, etc.

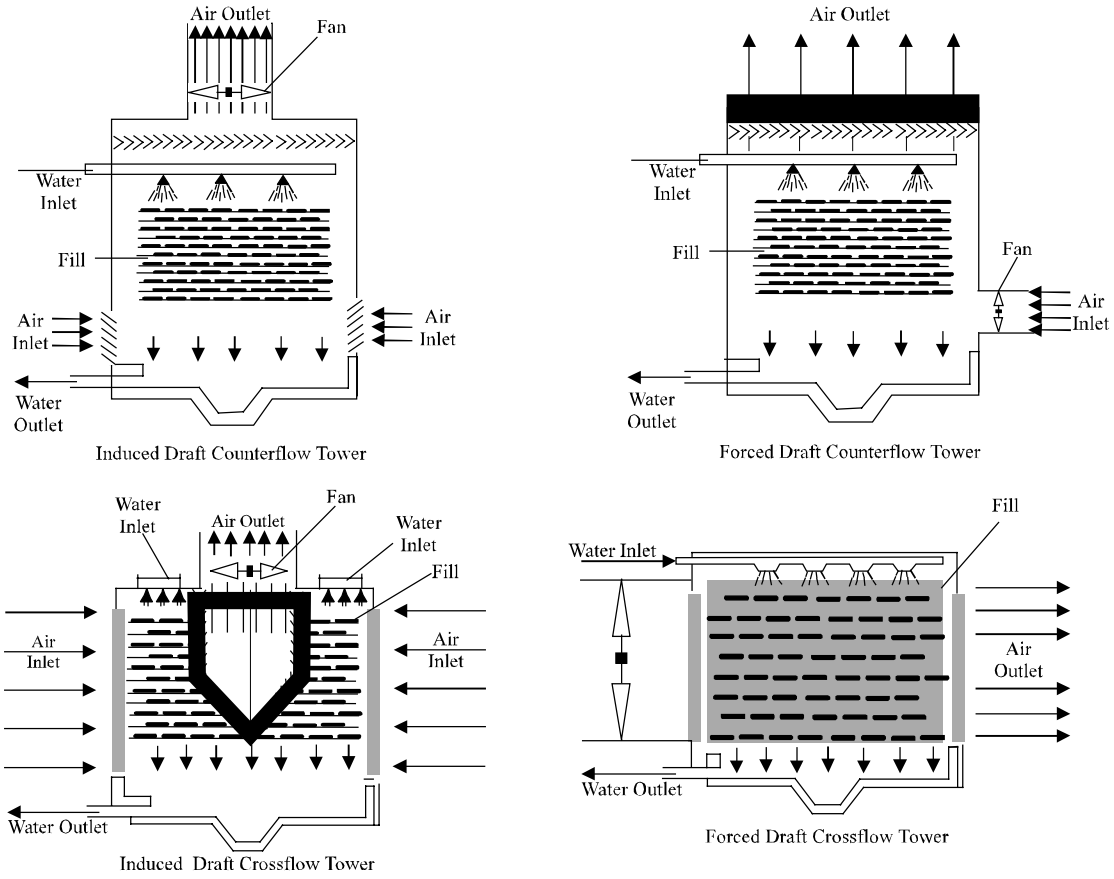


Figure 13.4-2. Mechanical draft cooling towers.

To reduce the drift from cooling towers, drift eliminators are usually incorporated into the tower design to remove as many droplets as practical from the air stream before exiting the tower. The drift eliminators used in cooling towers rely on inertial separation caused by direction changes while passing through the eliminators. Types of drift eliminator configurations include herringbone (blade-type), wave form, and cellular (or honeycomb) designs. The cellular units generally are the most efficient. Drift eliminators may include various materials, such as ceramics, fiber reinforced cement, fiberglass, metal, plastic, and wood installed or formed into closely spaced slats, sheets, honeycomb assemblies, or tiles. The materials may include other features, such as corrugations and water removal channels, to enhance the drift removal further.

Table 13.4-1 provides available particulate emission factors for wet cooling towers. Separate emission factors are given for induced draft and natural draft cooling towers. Several features in Table 13.4-1 should be noted. First, a *conservatively high* PM-10 emission factor can be obtained by (a) multiplying the total liquid drift factor by the total dissolved solids (TDS) fraction in the circulating water and (b) assuming that, once the water evaporates, all remaining solid particles are within the PM-10 size range.

Second, if TDS data for the cooling tower are not available, a source-specific TDS content can be estimated by obtaining the TDS data for the make-up water and multiplying them by the cooling tower cycles of concentration. The cycles of concentration ratio is the ratio of a measured

Table 13.4-1 (Metric And English Units). PARTICULATE EMISSIONS FACTORS FOR WET COOLING TOWERS[a]

Tower Type[d]	Total Liquid Drift[b]				PM-10[c]		
	Circulating Water Flow[b]	g/daL	lb/10^3 gal	EMISSION FACTOR RATING	g/daL[e]	lb/10^3 gal	EMISSION FACTOR RATING
Induced Draft (SCC 3-85-001-01, 3-85-001-20, 3-85-002-01)	0.020	2.0	1.7	D	0.023	0.019	E
Natural Draft (SCC 3-85-001-02, 3-85-002-02)	0.00088	0.088	0.073	E	ND	ND	—

[a] References 1-17. Numbers are given to 2 significant digits. ND = no data. SCC = Source Classification Code.

[b] References 2,5-7,9-10,12-13,15-16. Total liquid drift is water droplets entrained in the cooling tower exit air stream. Factors are for % of circulating water flow (10^{-2} L drift/L [10^{-2} gal drift/gal] water flow) and g drift/daL (lb drift/10^3 gal) circulating water flow. 0.12 g/daL = 0.1 lb/10^3 gal; 1 daL = 10^1 L.

[c] See discussion in text on how to use the table to obtain PM-10 emission estimates. Values shown above are the arithmetic average of test results from References 2,4,8, and 11-14, and they imply an effective TDS content of approximately 12,000 parts per million (ppm) in the circulating water.

[d] See Figure 13.4-1 and Figure 13.4-2. Additional SCCs for wet cooling towers of unspecified draft type are 3-85-001-10 and 3-85-002-10.

[e] Expressed as g PM-10/daL (lb PM-10/10^3 gal) circulating water flow.

parameter for the cooling tower water (such as conductivity, calcium, chlorides, or phosphate) to that parameter for the make-up water. This estimated cooling tower TDS can be used to calculate the PM-10 emission factor as above. If neither of these methods can be used, the arithmetic average PM-10 factor given in Table 13.4-1 can be used. Table 13.4-1 presents the arithmetic average PM-10 factor calculated from the test data in References 2, 4, 8, and 11 - 14. Note that this average corresponds to an effective cooling tower recirculating water TDS content of approximately 11,500 ppm for induced draft towers. (This can be found by dividing the total liquid drift factor into the PM-10 factor.)

As an alternative approach, if TDS data are unavailable for an induced draft tower, a value may be selected from Table 13.4-2 and then be combined with the total liquid drift factor in Table 13.4-1 to determine an apparent PM-10 factor.

As shown in Table 13.4-2, available data do not suggest that there is any significant difference between TDS levels in counter and cross flow towers. Data for natural draft towers are not available.

Table 13.4-2. SUMMARY STATISTICS FOR TOTAL DISSOLVED SOLIDS (TDS) CONTENT IN CIRCULATING WATER[a]

Type Of Draft	No. Of Cases	Range Of TDS Values (ppm)	Geometric Mean TDS Value (ppm)
Counter Flow	10	3700 - 55,000	18,500
Cross Flow	7	380 - 91,000	24,000
Overall[b]	17	380 - 91,000	20,600

[a] References 2,4,8,11-14.
[b] Data unavailable for natural draft towers.

References For Section 13.4

1. *Development Of Particulate Emission Factors For Wet Cooling Towers*, EPA Contract No. 68-D0-0137, Midwest Research Institute, Kansas City, MO, September 1991.

2. *Cooling Tower Test Report, Drift And PM-10 Tests T89-50, T89-51, And T89-52*, Midwest Research Institute, Kansas City, MO, February 1990.

3. *Cooling Tower Test Report, Typical Drift Test*, Midwest Research Institute, Kansas City, MO, January 1990.

4. *Mass Emission Measurements Performed On Kerr-McGee Chemical Corporation's Westend Facility*, Kerr-McGee Chemical Corporation, Trona, CA, And Environmental Systems Corporation, Knoxville, TN, December 1989.

5. Confidential Cooling Tower Drift Test Report For Member Of The Cooling Tower Institute, Houston, TX, Midwest Research Institute, Kansas City, MO, January 1989.

6. Confidential Cooling Tower Drift Test Report For Member Of The Cooling Tower Institute, Houston, TX, Midwest Research Institute, Kansas City, MO, October 1988.

7. Confidential Cooling Tower Drift Test Report For Member Of The Cooling Tower Institute, Houston, TX, Midwest Research Institute, Kansas City, MO, August 1988.

8. *Report Of Cooling Tower Drift Emission Sampling At Argus And Sulfate #2 Cooling Towers*, Kerr-McGee Chemical Corporation, Trona, CA, and Environmental Systems Corporation, Knoxville, TN, February 1987.

9. Confidential Cooling Tower Drift Test Report For Member Of The Cooling Tower Institute, Houston, TX, Midwest Research Institute, Kansas City, MO, February 1987.

10. Confidential Cooling Tower Drift Test Report For Member Of The Cooling Tower Institute, Houston, TX, Midwest Research Institute, Kansas City, MO, January 1987.

11. *Isokinetic Droplet Emission Measurements Of Selected Induced Draft Cooling Towers*, Kerr-McGee Chemical Corporation, Trona, CA, and Environmental Systems Corporation, Knoxville, TN, November 1986.

12. Confidential Cooling Tower Drift Test Report For Member Of The Cooling Tower Institute, Houston, TX, Midwest Research Institute, Kansas City, MO, December 1984.

13. Confidential Cooling Tower Drift Test Report For Member Of The Cooling Tower Institute, Houston, TX, Midwest Research Institute, Kansas City, MO, August 1984.

14. Confidential Cooling Tower Drift Test Report, Midwest Research Institute, Kansas City, MO, November 1983.

15. *Chalk Point Cooling Tower Project*, Volumes 1 and 2, JHU PPSP-CPCTP-16, John Hopkins University, Laurel, MD, August 1977.

16. *Comparative Evaluation Of Cooling Tower Drift Eliminator Performance*, MIT-EL 77-004, Energy Laboratory And Department of Nuclear Engineering, Massachusetts Institute Of Technology, Cambridge, MA, June 1977.

17. G. O. Schrecker, *et al., Drift Data Acquired On Mechanical Salt Water Cooling Devices*, EPA-650/2-75-060, U. S. Environmental Protection Agency, Cincinnati, OH, July 1975.

Exhibit H

November 21, 2001

(AR-18J)

Robert F. Hodanbosi, Chief
Division of Air Pollution Control
Ohio Environmental Protection Agency
122 South Front Street
P. O. Box 1049
Columbus, Ohio 43266-1049

Dear Mr. Hodanbosi:

This letter is to inform you of the action required by the Ohio Environmental Protection Agency (OEPA) to avoid an April 1, 2002, United States Environmental Protection Agency (USEPA) publication of a notice of program deficiency for the Ohio Title V operating permit program. As you know, we published a Notice of Comment Period on operating permit program deficiencies in the Federal Register on December 11, 2000. Pursuant to the settlement agreement discussed in that notice, USEPA will publish notices of program deficiencies for individual operating permit programs, based on the issues raised that we agree are deficiencies. In that notice, USEPA committed to publishing these notice of program deficiencies for fully approved programs, such as Ohio's program, by April 1, 2002.

USEPA received comments concerning the Ohio's Title V program on or before the March 12, 2001, deadline. We have reviewed these comments and, based on our preliminary review, have identified the issues on which Ohio must have taken significant action to avoid Title V notice of program deficiency on April 1, 2002. These issues include;

1. The language of Ohio Administrative Code (OAC) 3745-77-07(A)(3)(c)(ii) and (iii) limits the reporting of deviations to those which can be detected by the compliance method required by the permit, in violation of the Credible Evidence rule.
2. The Title V permits exempt the reporting of the malfunctions under OAC 3745-15-06(B) from the six-month monitoring reports required by 40 C.F.R. § 70.6(a)(3)(iii).
3. The six-month monitoring reports do not require permitees to submit reports of all required monitoring as required by 40 C.F.R. § 70.6(a)(3)(iii).
4. All of initial Title V permits have not been issued.
5. Title V permits must contain monitoring, recordkeeping, and reporting requirements sufficient to assure compliance.
6. Applicability of 112(r) and Title IV in the Title V permit.

7. Identification of origin and authority of each permit term and condition in the Title V permit.
8. The statements of basis must conform to the guidelines we will provide to you under separate cover.

We enclosed a more detailed discussion of these issues with this letter.

We have been working with your staff concerning these comments and are pleased with Ohio's intent to correct many of these potential deficiencies within a reasonable timeframe. We would like for you to provide us with confirmation of the issues that you are planning to resolve, along with timeframes for these resolutions, so that we will be better prepared to work with you to achieve your goal. Please be aware USEPA reserves the right established in the Act and 40 C.F.R. § 70.10 to publish a notice of program deficiency for any or all of these deficiencies at a later date if Ohio fails to address these deficiencies adequately and expeditiously. USEPA also reserves the right to publish subsequent notice of program deficiencies concerning other deficiencies in the Ohio Title V program that were not identified during the comment period ending March 12, 2001.

We look forward to continued cooperation between our offices on Title V program issues. If you have any questions, please contact Genevieve Damico or Kaushal Gupta, of my staff, at (312) 353-4761 and (312) 886-6803 respectively.

Sincerely yours,

/s/

Bharat Mathur, Director
Air and Radiation Division

Enclosure

Enclosure

Issues Concerning Deficiencies in the Ohio Title V Operating Permits Program

The language of Ohio Administrative Code (OAC) 3745-77-07(A)(3)(c)(ii) and (iii) limits the reporting of deviations to those which can be detected by the compliance method required by the permit.

OAC 3745-77-07(A)(3)(c)(ii) and (iii) states:

> (ii) That each report submitted under paragraph (A)(3)(c)(i) of this rule shall clearly identify any deviations from permit requirements since the previous report that have been detected by the compliance method required under the permit and any deviations from the monitoring, recordkeeping, and reporting requirements under the permit;
>
> (iii) That each permit shall require prompt reporting of deviations from federally enforceable permit requirements that have been detected by the compliance method required under the permit, including deviations attributable to upset conditions as defined in the permit, the probable cause of such deviations, and any corrective actions or preventive measures taken. Verbal reports under this paragraph shall be submitted to the director as soon as practicable, consistent with diligent verification and certification, but in no case later than three business days after discovery of the deviation, with a follow up written report within thirty days after such discovery.

The underlined portions of the language demonstrates that Ohio's rules do not require permittees to consider all credible evidence when the permittee reports deviations from the permit requirements. Ohio must remove this language from OAC 3745-77-07(A)(3)(c)(ii) and (iii).

The Title V permits exempt the reporting of the malfunctions under OAC 3745-15-06(B) from the six-month monitoring reports required by 40 C.F.R. § 70.6(a)(3)(iii).

Ohio's permits provide that quarterly reports satisfy the requirements pertaining to prompt reporting of all deviations (Part I A.1.c.ii). For this reason, the quarterly reports must meet the criteria for deviation reports. Both 40 C.F.R. § 70.6(a)(3)(iii)(B) and OAC 3745-77-07(A)(3)(c)(iii) require permittees to report promptly deviations from permit requirements. Yet, Part I.A.1.c.ii of the Ohio Title V permits specifically exclude from the quarterly reporting requirement deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06, a part of the Ohio State Implementation Plan. The reporting aspects of the Ohio SIP, OAC 3745-15-06, do not alter the Title V requirement to report all deviations, including malfunctions, in the Title V quarterly report. Ohio must revise Part I A.1.c.ii of the Title V permits to no longer exclude the reporting of deviations resulting from malfunctions in the quarterly deviation reports. OEPA may choose to require that the permittee simply reference the malfunction report required by OAC 3745-15-06 by requiring a similar report to Section D of USEPA's Part 71 six-month report form.

The six-month monitoring reports do not require permitees to submit reports of any required monitoring as required by 40 C.F.R. § 70.6(a)(3)(iii).
Ohio's permits provide that quarterly reports satisfy the six month reporting requirements(Part I A.1.c.ii). For this reason, the quarterly reports must meet the same criteria as the six-month reports. Both 40 C.F.R. § 70.6(a)(3)(iii) and OAC 3745-77-07(A)(3)(c)(i) require that the permittee submit a report of the results of all required monitoring. Ohio's quarterly reports only include a compilation of the deviations being reported by the permittee. This does not satisfy the requirement to submit a report of any required monitoring. Ohio may choose to resolve this issue by requiring permittees to submit reports similar to those required by Section C of USEPA's Part 71 six-month report form.

Furthermore, these same rules require that all applicable reporting requirements must include a semiannual (or more frequent) reporting requirement. The rule allows no exceptions. Therefore, all federally enforceable reporting requirements in a Title V permit must require at least semiannual submission of the reports. Some of Ohio's Title V permits currently require only annual submission of certain reports; Ohio must revise these permits to submit reports at least semiannually.

All of the Title V permits have not been issued.
Section 503(c) of the Clean Air Act clearly requires states to issue all of the original Title V permits within 3 years of program approval. We do understand that there are many reasons why Ohio was unable to complete the issuance of these permits within the required 3-year timeframe. However, because the success of this program is dependant on the issuance of the Title V permits, Ohio must develop by March 2002 a schedule for permit issuance, including milestones, to ensure issuance of all outstanding initial permits no later than December 1, 2003. Pamela Blakley provided an example of a permit issuance schedule in an e-mail on November 7, 2001.

Title V permits must contain monitoring, recordkeeping, and reporting requirements sufficient to assure compliance.

A. Title V permits contain monitoring and recordkeeping conditions on the state-only enforceable side when those conditions should be made federally enforceable.

Some Title V permits incorrectly make monitoring and recordkeeping provisions enforceable only by the state when those provisions are federally enforceable. Because a federal rule, 40 C.F.R. § 70.6(a)(3)(i)(B), requires the permit to contain all monitoring and recordkeeping necessary to assure compliance, such monitoring and recordkeeping must be on the federally enforceable side of the permit.

One example of this problem comes from the draft Title V permit for Cleveland Electric Illuminating Avon Lake Power Plant (facility ID 0247030013, issued January 30, 2000). The permit

requires the source to operate and maintain a temperature monitor in order to measure the temperature of gases entering an electrostatic precipitator. Because the temperature of these inlet gases will indicate whether the source is complying with federally enforceable emission limits in the permit, the requirement to operate and maintain the temperature monitor also is federally enforceable. However, the requirement as written in the draft permit is currently enforceable only by the state.

In another example, the same permit contains a state-only requirement for the source to maintain a logbook for a federally required continuous monitoring system. Such a requirement should be federally enforceable, even though there may already be federally enforceable requirements sufficient to ensure proper operation of the monitoring system. Requirements that will ensure the proper operation of federally required monitoring systems are part of the underlying requirements, and therefore are federally enforceable.

B. Title V permits must contain monitoring, recordkeeping, and reporting requirements sufficient to assure compliance with all applicable limits. The permitting authority must write these requirements in sufficient detail to allow no room for interpretation or ambiguity in meaning.

According to 40 C.F.R. § 70.6(c)(1), Title V permits must contain monitoring, recordkeeping, and reporting requirements sufficient to assure compliance with the terms and conditions of the permit. These requirements must involve the best compliance methods practicable, taking into consideration the source's compliance history, likelihood of violating the permit, and feasibility of the methods.

Ohio's Title V permits currently rely too heavily on AP-42 emission factors. These emission factors were not meant to be a basis of compliance with part 70. They are a last resort in compliance assurance (and are not a viable option at all when their reliability ratings are low). In most instances in which AP-42 emission factors are used, more reliable compliance methods are available. The permitting authority need not impose onerous compliance assurance requirements, but it cannot allow sources to use emission factors as an escape from monitoring, recordkeeping, and reporting activities.

In addition to implementing appropriate compliance methods, the monitoring, recordkeeping, and reporting requirements must be written in sufficient detail to allow no room for interpretation or ambiguity in meaning. Requirements that are imprecise or unclear make compliance assurance impossible.

For example, some Title V permits require monitoring devices to be

"installed, calibrated, operated, and maintained in accordance with the manufacturer's specifications," without explaining in detail the steps in these processes or the manufacturer's specifications. These steps must be explained in detail in order for such a requirement to have any meaning. The description of plant activities need not be exhaustive, but they must be specified in the permit if they would significantly affect the source's ability to comply. Leaving the source to follow "manufacturer's specifications" does not help direct the source toward compliance. In some instances, manufacturer's specifications may not even exist.

Many Title V permits contain ambiguous phrases, such as "if necessary." For example: "If necessary, the permittee shall maintain monthly records ...." The phrase "if necessary" should be removed altogether; the permit should specify exactly what *is* necessary. In this example, the permit should either precisely explain the situation that would necessitate monthly records, or simply require monthly records at all times. Ambiguous language hampers the source in its duty to independently assure compliance, and leaves legal requirements open to interpretation.

C. Title V permits do not require the submission of an emission control action plan until 60 days after final issuance of the permit, in violation of OAC 3745-25. Although emission control action plans may no longer be critical due to improvements in air quality, Ohio should resolve the deficiency by changing the permits to comply with the rule or by changing the rule itself.

Applicability of 112(r) and Title IV in the Title V permit.
We understand from a October 16, 2001, e-mail from Tom Rigo to staff, that OEPA is immediately making changes to the Title V permit to state applicability to 112(r) and Title IV. We are appreciative of this effort and look forward to the timely incorporation of this language in the Title V permits.

Identification of origin and authority of each permit term and condition in the Title V permit.
40 C.F.R. § 70.6 (a)(1)(i) requires that the Title V permit state the origin of and authority for each term and condition in the permit. Ohio's permits do list the origin and authority on an emission unit basis. It is clear that part 70 and the OAC envision that the origin and authority would be listed on a term and condition basis. For this reason we would like confirmation that OEPA is planning on revising the Title V permit format to include the origin of and authority for each term and condition.

The statements of basis must conform to the guidelines we will provide to you under separate cover.
40 C.F.R. § 70.7(a)(5) requires that each draft permit must be accompanied by a statement that sets forth the legal and factual basis for the draft permit

conditions. Although we recognize that there is little information available to judge the adequacy of a statement of basis besides this requirement, we concur with the comments made by the commentors alleging that Ohio's statements of basis do not meet the intent of part 70. We are, therefore, committing to provide OEPA with some guidelines that will be useful in meeting the intent of part 70. OEPA must follow these guidelines in preparing all future statements of basis to resolve this issue.