

RESOLUTION R2011-14

A RESOLUTION IN SUPPORT FOR KENNECOTT UTAH COPPER CORNERSTONE PROJECT

WHEREAS, Kennecott has spent more than \$400 million over the past two decades on the cleanup of historic mining sites and \$100 million on groundwater remediation; and

WHEREAS, KUC and Rio Tinto business units directly employed 2,400 people with an annual payroll of approximately \$250 million, which includes wages, salaries, pensions and benefits. The average payroll per job (including benefits) of nearly \$93,000 in 2009 makes these among the highest-paid jobs in the state; and

WHEREAS, The project will also help sustain Rio Tinto's employment of 2,400 people and an additional 14,800 indirect jobs, for a total of 17,200 Utah jobs; and

WHEREAS, The Rio Tinto Regional Center in Daybreak is the first building in Utah to earn the LEED Platinum certification. In addition, five other facilities have achieved some level of LEED certification. Kennecott Land's Daybreak community, a very successful example of redeveloping a former industrial site for housing and commercial uses, is a member of the LEED for Neighborhood Development pilot program; and

WHEREAS, The Kennecott Companies have received numerous awards for health, safety and environmental commitments. All Kennecott meetings begin with a "safety share" designed to remind people to be safety conscience in their work and off work activities.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF SOUTH JORDAN CITY, STATE OF UTAH, THAT THE CITY COUNCIL SUPPORTS THE KENNECOTT UTAH COPPER CORNERSTONE PROJECT.

Effective Date. This resolution will be effective immediately upon passage and posting as required by law.

APPROVED BY THE CITY COUNCIL OF THE CITY OF SOUTH JORDAN, STATE OF UTAH, ON THE 15th DAY OF MARCH, 2011 BY THE FOLLOWING VOTE:

Voting Record:

	YES	NO	ABSTAIN	ABSENT
Leona Winger	X			
Kathie Johnson		X		
Brian Butters	X			
Aleta Taylor	X			
Larry Short	X			



W. Kent Money, Mayor

ATTEST:

Anna West, City Recorder

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

RECEIVED
MAR - 3 2011
BY:

February 28, 2011

Mr. Kelly D. Sanders
President and CEO
Rio Tinto/Kennecott Utah Copper Corporation
4700 Daybreak Parkway
South Jordan, Utah 84095-5120

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Dear Kelly,

I'm writing to thank you on behalf of the University of Utah for the extraordinary generosity Kennecott Utah Copper and Rio Tinto have shown so many University academic departments, student initiatives, and arts and culture organizations over many, many years. You have helped enrich not just the University community, but our entire community, and for that I am deeply grateful. I'm also writing to thank you and express my strong support for the public input process you have created for the Cornerstone Mine Expansion project.

While I do not know enough about the technical issues related to the mine expansion to be able to comment directly on Rio Tinto's requests for revised environmental permits, I am very impressed with the framework you've created for distributing information and soliciting input on the Cornerstone project. You and your team should be commended for the inclusive and transparent way in which you are moving through this complicated and critically important process.

As public officials and community members consider the vital regulatory issues related to Cornerstone, I encourage them — where appropriate — to also consider your company's remarkable and exemplary commitment to the community. It's a tradition of corporate social responsibility that other firms should aspire to, and would benefit all of us should Kennecott's active presence in the Valley continue for an additional two to three decades.

Some key examples of Kennecott's support for the University:

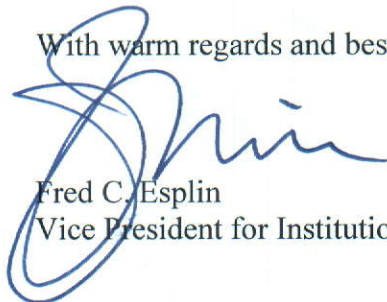
- For more than two decades, Kennecott has helped University of Utah students achieve their dreams of a college education through the Kennecott Scholars program. Established in 1991, the Kennecott Scholarships have supported over 700 University of Utah students with more than \$2M in scholarship awards.

Mr. Kelly D. Sanders
February 28, 2011
Page Two

- During Kennecott's more than 100 year history in the Salt Lake Valley, the company has demonstrated a commitment to fostering knowledge and expertise that improves the quality of life for those of us who live here. A 2007 gift to establish the Rio Tinto Earthquake Information Center at the University of Utah is a prime example. This contribution, totaling \$600,000, is a great help as scientists work to better understand seismic events in Utah, a process that ultimately will lead to better building design and a chance to mitigate the impact of future earthquakes.
- Later this year, the Natural History Museum of Utah will open in its landmark new home, — the beautiful, LEED-certified Rio Tinto Center. Kennecott Utah Copper/Rio Tinto's unprecedented \$15 million donation to that project — the largest single corporate gift in University of Utah history — was instrumental in creating this stunning new facility. The new Museum will help preserve and protect our state's irreplaceable heritage and inspire future generations of scientists through state-of-the art exhibits and educational programs.

As Rio Tinto/Kennecott, public regulators and the local community explore the feasibility of extending the life of the Bingham Canyon mine, I thank you for all the company has done to date to enrich our cultural and academic environment. I also encourage you to continue the tremendous effort to solicit community input, foster dialogue, and share information related to the Cornerstone project.

With warm regards and best wishes,



Fred C. Esplin
Vice President for Institutional Advancement

cc: Sarah George, Utah Museum of Natural History
Greg Lee, Red Butte Garden and Arboretum
Frank Brown, College of Mines and Earth Sciences

FCE/cd



March 17, 2011

Rio Tinto
4700 Daybreak Parkway
South Jordan, UT 84095

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

RE: Letter of Support for Kennecott's Cornerstone Project

DIVISION OF AIR QUALITY

To Whom It May Concern:

We are pleased to express our support for the Rio Tinto's Kennecott Utah Copper Cornerstone Project. Extending the life of the Bingham Canyon Mine will continue to impact the state of Utah in a positive manner for many years both economically and by providing the metals that are essential to the modern comforts of our daily life. I personally have been involved with Kennecott for 13 years and could not be more proud to be involved with this organization and their commitment to Safety, Environmental, Economic and Social Stewardship.

As stewards to our community Kennecott Utah Copper is a leader in safety. They have demonstrated that safety is a core value and is found at every level and is a direct representation of solid leadership. All of their meetings begin with a "safety share" designed to remind people to practice safe acts both at work and in off work activities. Kennecott drives a safe environment for their employees and contractors and Motion Industries is proud to be associated with such a high standard.

Over the years, when issues have been pointed out to the company, they have made sincere efforts to become more sensitive to environmental needs, and to improve the environmental quality of air, water, and land affected by the various levels of their production. Kennecott Land's Daybreak community is an example of redeveloping a former industrial site for housing and commercial uses, a true testament to the community.

Copper is vital to modern life. It is necessary for building construction, transportation, industry, and electronics. It is also found in advanced green technology, such as solar panels, wind turbines, and hybrid cars. Copper supports many other industries that enable our state to thrive and continue to grow. In 2009, Kennecott produced 25% of the nation's copper and molybdenum. Kennecott also produced approximately 10% of the domestic silver and gold supply. The combination of copper as well as molybdenum, gold, and silver by product production makes Kennecott one of the most important mining assets within the United States.

We recognize the value and benefit that Kennecott Utah Copper provides to our entire state. We are also confident they will continue to be an excellent neighbor and operate the Bingham Canyon Mine in a professional and ethical manner. My sincere hope is that the state regulators will consider the vital role Kennecott plays in the local economy and the many families whose lives are better because Kennecott is here.

We are all Part of something Bigger.....

Sincerely,

A handwritten signature in black ink, appearing to read 'Jeremy Barton', is written over a light blue horizontal line.

Jeremy Barton
Branch Manager
Motion Industries



MAR 21 2011

DIVISION OF AIR QUALITY

March 7, 2011

My name is Alan Anderson and I am the President and Chief Executive Officer of ChamberWest, the Regional Chamber of Commerce for West Valley City, Taylorsville and Kearns. I am speaking on behalf of the chamber board of directors and the ChamberWest membership representing more than 400 businesses including large international corporations and home-based businesses. Our geographic area includes more than 50 square miles and more than 200,000 residents and more than 6,000 licensed businesses.

ChamberWest supports a healthy environment for the community as we actively support *Clear the Air* and the *Care to Clear the Air* initiatives in Salt Lake County and promote them to area businesses. ChamberWest also allows its small staff to telecommute as needed thereby reducing emissions. It is something we believe strongly in.

ChamberWest reiterates its support of Kennecott and the Cornerstone Project.

Kennecott directly employs 2,400 Utahns with high-paying jobs and benefits. It also creates an additional 14,800 indirect jobs and contributes \$900 million to in-state spending. That's nearly a billion dollars of payroll, in-state purchases and contributions to Utah state and local taxes providing each of us in this room with roads, police, fire and social programs all us receive intrinsic benefit from.

We feel good about Kennecott's environmental approach. Kennecott has gone above and beyond to mitigate for emissions and provided a responsible proposal to DAQ. I ask that the Utah Air Quality Board approve this Bingham Canyon Mine proposal and that UDAQ issue the approval order to allow Kennecott to continue to operate, innovate and provide economic benefits to our community.

Personally, I'd like to add own my own comments to the proposal. We live in a world of consumption and balance. We consume paper, vehicles, television, handheld devices all of which are made from the manufacturing process. We have copper in our homes to power lights when it is dark and to keep our perishable foods cold or frozen.

We consume plastic, made from oil, to keep food fresh and also provide control systems and cosmetics for our vehicles. Plastics are used to make storage containers, or to fly model airplanes or play with model trains.

Rare earth elements, called "rare earths" by those who use and study them, often prove irreplaceable in green technologies and high-tech consumer products such as flat screen televisions, hybrid cars, wind turbines and headphones/earbuds for MP3 players. These rare earth elements are mined around the world and used to manufacture the items I listed above.

It is important that Kennecott continue to mine those elements they extract from the mine for the public's use in the spirit of balance and cooperation. Kennecott has proven they can mine in an environmentally sensitive way. I am certain that Kennecott has gone above and beyond to mitigate for emissions and provides a responsible proposal to DAQ.

Warmest regards,

Alan Anderson
President / CEO
ChamberWest Regional Chamber of Commerce



ZIONS BANCORPORATION

HARRIS H. SIMMONS
Chairman, President and
Chief Executive Officer

February 7, 2011

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

RECEIVED
FEB 10 2011
BY:

Mr. Kelly Sanders
President & CEO
Kennecott Utah Copper
4700 Daybreak Parkway
South Jordan, UT 84095

Re: Letter of Support for Kennecott's Cornerstone Project

Dear Kelly:

As Chairman of the Board and CEO of Zions Bancorporation, I am pleased to add my name to the many business and community leaders who support Rio Tinto's Kennecott Utah Copper Cornerstone Project.

For more than 100 years Kennecott has been Utah's leading manufacturer, with historic production of 18.7 million tons of copper from the Bingham Canyon Mine. Kennecott is Utah's largest exporter and the second largest copper producer in the United States.

The Cornerstone Project will not just extend the life of the Bingham Canyon Mine, but will provide critically needed jobs and economic stability for our community.

Total in-state spending by Rio Tinto business units in 2009 was \$900 million, composed of approximately \$250 million in wages, salaries, pensions and benefits and approximately \$650 million in purchases from almost 1,000 Utah vendors and contractors. With Rio Tinto's average payroll—including benefits—of nearly \$93,000 in 2009, jobs at Kennecott are among the highest-paying in Utah. By extending the life of the Bingham Canyon Mine, Utah can effectively maintain these high-paying jobs beyond 2028.

Kennecott Utah Copper has been a conscientious and responsible industry leader—a powerful economic force that has championed workplace safety, environmental stewardship, and community outreach and support.

I look forward to working closely with you in the future and appreciate the valuable contributions you have made to Utah's community and economy.

Sincerely,



Harris H. Simmons
Chairman, President and CEO
Zions Bancorporation



UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

February 23, 2011

MAR 21 2011

Cheryl Heying, Director
Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820

DIVISION OF AIR QUALITY

Re: *Intent to Approve: Modify Approval Order DAQE-AN0105710023-08 to Allow for Material Movement Increase and Add a Crusher*

Dear Ms. Heying,

I am General Counsel and Director of Risk Management of Brahma Group, Inc. (Brahma), a company headquartered in Salt Lake City. I appreciate the Utah Division of Air Quality (DAQ) giving me an opportunity to comment on such a critically important matter.

Brahma has been involved in Kennecott's maintenance construction activities for over a decade. As the Director of Risk Management, I wish to offer my personal experiences as it relates Kennecott's health, safety and environmental values.

At Brahma, we work for some of the largest names in the mining, refining and power industries. It has been my opportunity to meet with the Health, Safety & Environmental Directors of many of these large companies and experience first-hand their programs and control systems. I can state, without equivocation, that Kennecott is the gold standard in terms of Health, Safety and Environmental standards and systems.

Kennecott's programs, in every instance, meet (and in most cases exceed) all federal and state health and environmental agency standards. Kennecott is an innovator in safety and environmental risk assessment, analysis, and control. The following is what I have observed:

- Kennecott requires each contractor to complete an action plan prior to the commencement of any project. A key component of the plan addresses air quality including fugitive dust control and opacity control for all work activities. Depending on the project, Kennecott may even require a separate environmental mitigation plan.
- Brahma is actively involved in maintaining air pollution control systems at Kennecott's properties. We can say, without reservation, these systems are given top priority at Kennecott.
- Contractors receive Level I and Level II environmental management training, and Kennecott requires full compliance, with its ISO 14,001 Environmental Management Standard.
- Kennecott has a "No idling vehicle" policy.



The results are indisputable; Kennecott has an incident frequency rate well below, even dramatically below, industry standards. In many respects I take cues from Kennecott in my individual efforts to improve our Company's safety and environmental programs.

Finally, what does all this mean for the hundreds of Utahans we employ to go to work at Kennecott? It means our employees go home safe to their families each night. It means our employees can provide a living for themselves and for their families. It means our employees enjoy increased quality of life. It means our community, that requires industry to survive, is fortunate to have an industry leader like Kennecott in our midst. For these reasons alone, we urge the DAQ to approve this permit, without delay.

Very truly yours,

A handwritten signature in blue ink, appearing to read "R. S. Fox", is written over the typed name.

Robert S. Fox
General Counsel
Director of Risk Management



Questar Corporation

180 East 100 South
P.O. Box 45433
Salt Lake City, UT 84145-0433
Tel 801 324 5424 • Fax 801 324 5483
Ron.Jibson@Questar.com

Ronald W. Jibson

President & Chief Executive Officer

February 22, 2011

Mr. Kelly Sanders
Rio Tinto
4700 Daybreak Parkway
South Jordan, UT 84095

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Re: Support for Kennecott's Cornerstone Project

Dear Kelly:

For more than 100 years your company has helped sustain a viable economy in the state, our country and around the globe. It isn't difficult to see how your products help connect technology with people, making modern-day life better for us all.

Questar and its subsidiaries support Kennecott's Cornerstone Project. Your company has demonstrated how a mining company can operate safely and responsibly. Your efforts -- particularly since the early 1990s -- to cleanup historic mining sites and groundwater, transform Salt Lake Valley's southwestern foothills into a world-class community that showcases cutting edge energy efficiencies have been impressive.

Your contribution to Utah's economic development spans a century -- something only a few companies have done. Kennecott's continued growth will sustain 2,400 mining employees and nearly 15,000 other indirect workers who rely on your business, not to mention the communities and individuals who benefit from your good will and corporate citizenship.

We appreciate your contribution to Utah's economic vitality. We wish you the best for your success.

Sincerely, .



Ron Jibson



UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 18, 2011

Mr. Kelly Sanders
President and CEO
Kennecott Utah Copper
4700 Daybreak Parkway
South Jordan, UT 84095

Re: Letter of Support for Kennecott's Cornerstone Project

Dear Kelly:

As the President of the West Jordan Chamber of Commerce, I am pleased to support Rio Tinto's Kennecott Utah Copper Cornerstone Project.

For more than 100 years, Kennecott has been a leading manufacturer in Utah with historic production of 18.7 million tons of copper from the Bingham Canyon Mine. Kennecott is Utah's largest exporter and the second largest copper producer in the United States.

Total in-state spending by Rio Tinto business units in 2009 was \$900 million, composed of approximately \$250 million in wages, salaries, pensions and benefits and approximately \$650 million in purchases from almost 1000 Utah vendors and contractors. The \$900 million includes payments to Utah state and local governments.

By extending the life of the Bingham Canyon Mine, Utah could effectively maintain high-paying jobs beyond 2028. With Rio Tinto's average payroll - including benefits - of nearly \$93,000 in 2009, jobs at Kennecott are among the highest-paying in Utah.

Kennecott Utah Copper has been a conscientious and responsible industry leader - a powerful economic force that has championed workplace safety, environmental stewardship, and community outreach and support. Kennecott, for many years, has been a Good Neighbor and corporate citizen to the West Jordan Community and the Chamber.

I look forward to working closely with you in the future and appreciate the valuable contributions you have made to Utah's economy.

Sincerely,

A handwritten signature in blue ink, appearing to read "N. Craig Dearing", is written over the typed name.

N. Craig Dearing
President / CEO

West Jordan Chamber Of Commerce



Fluor Enterprises, Inc.
One Fluor Daniel Drive
Sugar Land, TX 77478-3899
USA

281.263.3363 office
281.635.9793 mobile
Chris.Jorgensen@Fluor.com

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 22, 2011

Gina Crezee
Director, Government, Corporate & Community Relations
Kennecott Utah Companies / Copper Product Group
4700 South Daybreak Parkway
South Jordan, UT 84095

Re: Support for Kennecott Utah Copper Cornerstone Project

Dear Ms. Crezee:

We appreciate the opportunity to provide this letter of support for the Kennecott Utah Copper – Cornerstone Project. Fluor is North America’s largest publicly-traded engineering, procurement, construction, maintenance and project management company. We have 50,000 employees with offices in 28 countries on 6 continents with nearly 100 years of experience.

Fluor has been providing Kennecott Utah Copper maintenance and small capital services since late 2001. We currently employ approximately 150 staff and craft technicians at the Smelter, all local hires from the Wasatch Valley area.

We enjoy the opportunity to create customized solutions that support Kennecott’s core values of safety and environmental stewardship, all while helping to achieve the project operational objectives of supplying nearly 25% of North America’s refined copper.

With Kennecott, Fluor’s commitment to project safety leadership is our top priority, and while working on the Kennecott site, Fluor has achieved over 2 million safe employee work hours without a lost-time injury. We have also noted that Kennecott has a track record of investing in environmental improvements, all of which create job opportunities and improve the lifestyle for local residents.

Fluor appreciates the opportunities provided by Kennecott and looks forward to a long and successful relationship. As I previously noted, we especially value the ability to employ local workers, which in turn, benefits this community. These jobs depend on the continued success of Kennecott Utah Copper in this very competitive local and global environment.

We fully support Kennecott's efforts regarding the immediate approval of the required air permit for the Cornerstone Project. Unnecessary delays or requirements put all service providers, manufactures, and owners at a disadvantage in this very competitive global marketplace.

Please contact me if you have any need for additional information.

Regards,

A handwritten signature in blue ink, appearing to read 'Chris Jorgensen', with a long horizontal line extending to the right.

Chris Jorgensen
Vice President, Industrial Service - Process
Fluor, Operations & Maintenance

cc:

February 17, 2011

Ms. Gina Crezee
Rio Tinto
4700 Daybreak Parkway
South Jordan, UT 84095

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Re: Letter of Support for Kennecott's Cornerstone Project

Dear Ms. Crezee:

The Utah Petroleum Association is pleased to offer our support for Rio Tinto's Kennecott Utah Copper Cornerstone Project. We believe it is important to the economy of the State that Rio Tinto be able to extend the life of the mine through this expansion. Mining always has been and continues to be one of the foundations of Utah's economy. The jobs and economic development stimulus expected from this project will be an important part of the State's economic future.

Kennecott is recognized as one of the leading mining and manufacturing companies in the world. For more than 100 years, Kennecott has been a major contributor to the economy and way of life for Utah citizens, providing jobs, tax revenue, and products that are critical to the State. The company's production is astounding. From the mainstay of copper production as well as products such as gold, silver, molybdenum and others, Utah should be proud of what this company has accomplished.

Copper is vital to modern life. It is necessary for building construction, transportation, industry, computers and electronics, as well as advanced green technology, such as solar panels, wind turbines and hybrid cars. Copper supports many other industries that enable our state to thrive and continue to grow.

By extending the life of the Bingham Canyon Mine, Utah could maintain high-paying jobs beyond 2019. With Rio Tinto's average payroll - including benefits - of nearly \$93,000 in 2009, jobs at Kennecott are among the highest-paying jobs in Utah. Kennecott is Utah's largest exporter and a tremendous asset to the State of Utah.

Kennecott Utah Copper is a leader in safety. With an all-injury frequency rate (AIFR) a mere fraction of other industry's - including finance - AIFR in the United States, Kennecott has demonstrated that safety is a core value. I believe this safety culture has permeated the organization at every level and is a direct representation of solid leadership.

The Utah Petroleum Association has worked closely with Rio Tinto on a number of issues and I have appreciated the transparency, outreach and leadership demonstrated by Rio Tinto.

Sincerely,



Lee J. Peacock



175 E. University Blvd. (400 S.), Suite 600
Salt Lake City, UT 84111
801.364.3631
www.slchamber.com

February 15, 2011

Utah Division of Air Quality
P.O. Box 144820
Salt Lake City, UT 84114-482

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

To Whom It May Concern:

On behalf of the Salt Lake Chamber and the more than 6,000 businesses we represent, I wish to express our support for the proposed Cornerstone project of the Bingham Canyon Mine.

Rio Tinto, and its predecessors, have long played an important role in our state and national economy. Each year Kennecott Utah Copper produces nearly 25 percent of America's refined copper supply, which is used for building construction, transportation, industry, computers and electronics, as well as advanced green technologies. The combined economic activity at the Bingham Canyon mine and related facilities has sustained more Utah households than any other private Utah firm.

According to the University of Utah's Bureau of Economic and Business Research department (BEBR), Rio Tinto spent approximately \$900 million in 2009 on employee salaries and benefits, taxes and fees, as well as purchases from nearly 1,000 Utah companies. Clearly it has a significant impact on our state economy. The BEBR also concluded that if the Cornerstone investment is not made, the economic impact of Rio Tinto in Utah will decrease by an average of \$630 million annually beginning in 2021. Extending the life of the mine with the Cornerstone expansion will generate an average of \$1 billion a year into the local economy through the mid 2030s. That is a critical foundation for our state economy.

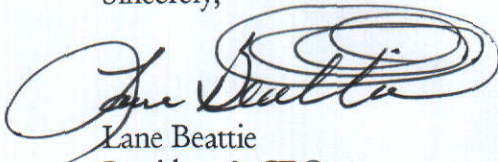
Beyond its economic impact, Rio Tinto has shown tremendous leadership in environmental stewardship. While the mine itself presents some environmental challenges, we have every reason to be confident Rio Tinto will continue to be a responsible member of our community. Rio Tinto has recently announced an upgrade to its power plant that will help our air quality, committed to continue building high efficiency buildings, implemented a voluntary no idling policy, been a participant in such programs as Salt Lake City's Clear the Air Challenge, and received many environmental recognition awards. This is only a sample of their commitment to our environment and quality of life.

Rio Tinto is working directly with the Salt Lake Chamber to help implement a business-led Clean Air initiative. The goal of this clean air program is to educate the public about the causes of pollution, share best practices for clean air initiatives and generate significant business support to implement clean air friendly behaviors and measures. Rio Tinto has

generously provided leadership, financial assistance, countless hours of staff volunteer time, and provided the Chamber with a loaned executive to help further this initiative.

The proposed Cornerstone project at the Brigham Canyon Mine will be a significant benefit for our state. We are confident that Rio Tinto will responsibly manage the potential environmental impacts and continue to proactively decrease its overall environmental impact. I strongly support this proposed expansion.

Sincerely,

A handwritten signature in cursive script, appearing to read "Lane Beattie". The signature is written in dark ink and is positioned above the printed name and title.

Lane Beattie
President & CEO

CC: Gina Crezee, Rio Tinto

February 15, 2011

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 2 1 2011

DIVISION OF AIR QUALITY

Ms. Gina Crezee
Rio Tinto, Communications and External Relations
Director, Government & Community Relations
Rio Tinto Regional Center
4700 Daybreak Parkway,
South Jordan, UT 84095

RE: Kennecott Utah Copper Cornerstone Project

Dear Ms. Crezee,

I am writing on behalf of the Utah Transit Authority (UTA) in support of Kennecott Utah Copper's Cornerstone Project. As a representative of Utah's business community and as a partner in the Daybreak community, I recognize the value and benefit that Kennecott Utah Copper provides to our entire state.

Kennecott, as a corporate citizen and an effective change leader, is integral in its contribution to the livability and economic viability of our community. No other single private sector operation has generated more production, exports, income, and employment for as many years in Utah. Total in-state spending by Rio Tinto business units in 2009 was significant when you consider that their spending is in the hundreds of millions for their wages, salaries, pensions, and benefits and purchases from almost 1000 Utah vendors and contractors. If the Cornerstone investment is not made, the economic contribution will decrease beginning in 2021 by hundreds of millions per year. In contrast, by extending Cornerstone investment, the life of the Mine will continue to contribute above its current rate to the local economy through the mid-2030's.

In addition, Kennecott Utah Copper has been a conscientious and responsible industry leader – a powerful economic force that has championed workplace safety, environmental stewardship, and community outreach and support.

UTA has worked closely with Rio Tinto on a number of issues and we appreciate the transparency, outreach and leadership demonstrated by Rio Tinto. We are pleased to lend our support to this important project that will continue to grow and develop Utah's economy for many years to come.

Thank you,



Michael A. Allegra
General Manager

MAGNA COMMUNITY COUNCIL

P.O. Box 410
Magna, Utah 84044

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Presidents:
Mike E. Retford
Laura Jo McDermaid
LaRee H. Pehrson
Ralph Brimley
Nick Sefakis
D. Leon Reese
Roy Smith
E. Fred Blanchard
D. S. Walker
V. B. Coon
W. G. (Bill) Larson
George Cromar
John E. Papanikolas
Clair Huffaker
Bert Mix

February 17, 2011

Kelly Sanders
President and CEO
Kennecott Copper

Mr. Sanders:

The Magna Community Council is registering its support of the new Kennecott Utah Copper's Cornerstone Project.

Kennecott Utah Copper has been a taxpaying entity in the Salt Lake Valley for over a hundred years, providing decently paying jobs for workers who, in turn, have contributed to the enhancement of the valley's larger workforce by utilizing its retail and service industries.

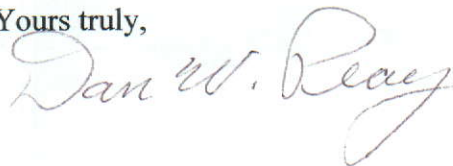
We are well aware of KUC's largesse in support of various charities and community projects and organizations, such as the local schools and our own Magna Ethnic and Mining Museum.

Over the years, when issues have been pointed out to the company, it has made sincere efforts to become more sensitive to broader environmental needs, and to improve the environmental quality of air, water and land affected by their various levels of production, and we trust that the company will continue to honor their unwritten civic contract to maintain a healthy quality of life among the citizens of the county and state.

Finally, a popular awareness of investment could provide a lift out of the economic despondency caused by the national and international events of the past few years.

For these reasons the Magna Community Council supports the Cornerstone Project.

Yours truly,





ATK Aerospace Systems
P.O. Box 707
Brigham City, UT 84302-0707

www.atk.com

February 17, 2011

Rio Tinto
Attn: Holly Robb, Sr. Adviser,
Government & Community Relations
4700 Daybreak Parkway
South Jordan, UT 84095

Dear Ms. Robb:

On behalf of ATK, I am pleased to have the opportunity to comment on Rio Tinto/Kennecott Utah Copper's community involvement and community giving.

Through my employment with ATK of more than 10 years, I have had the opportunity to become acquainted with Kennecott through our mutual service to the Magna Chamber of Commerce and through other associations. One of my early observations of Kennecott was the breadth of the company's community giving. From support for local business through area chambers of commerce to support for education through university and other educational partnerships, and support to the community through the United Way and the Utah Museum of Natural history, Rio Tinto/Kennecott has been a fixture in this community and is a notable partner in diverse community efforts.

Kennecott has been a partner that not only invests with financial contributions, but through a greater contribution of human resources to help strengthen and support surrounding communities. Kennecott employees are recognizable individuals in the community who are visible in sharing their expertise and lending their personal support through service on community boards, as guest presenters at business seminars and in educational forums as well.

As many industries have faced challenges with changing economic conditions, and as companies like Kennecott have not be immune, it is notable the company has not withdrawn or diminished key community efforts. Through business fluctuations, Kennecott has remained a strong community partner.

ATK has appreciated the opportunity to collaborate through some of our common community endeavors. I appreciate the opportunity to provide this recommendation for Kennecott's community efforts.

Sincerely,

Holly Lamb
Community Relations Manager

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Wheeler



4901 West 2100 South
Salt Lake City, Utah 84120-1200
(801) 974-0511 tel

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 18, 2011

Gina Crezee
Director - Government, Corporate and Community Relations
Kennecott Utah Companies / Copper Product Group
4700 S. Daybreak Parkway
S. Jordan, UT 84095

Dear Gina,

My name is Rob Campbell, President and CEO of Wheeler Machinery Co. We are the Caterpillar earthmoving equipment dealer for Utah and parts of surrounding states. Wheeler employs 582 people, 570 of whom reside in Utah, and 500 of whom live along the Wasatch Front. We have a vested interest in the economic viability and environmental sustainability of our community. In 2011 Wheeler will celebrate its 60th anniversary. We have been an integral part of Utah's business community and plan to be here for many years to come.

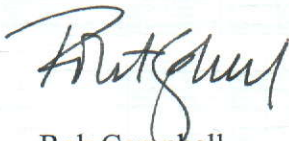
I would like to comment in support of Kennecott Utah Copper's Cornerstone Project. Kennecott has been our company's largest customer for many years. We provide Kennecott with many of the large mining trucks that carry copper ore. We also provide much of the equipment that builds and maintains mine operational areas. On any given day, Wheeler will have between fifteen and twenty people working at the mine site. In addition, close to fifty people, or one out of ten employees, at our main office in Salt Lake are working to support Kennecott mine operations by rebuilding machines and processing parts orders. Kennecott's success and growth is vital to Wheeler's success and growth.

I would also like to comment on Kennecott's role in the community and its environmental record. I have been involved with the mining industry for 33 years. In my experience, miners generally, and Kennecott in particular, are great stewards of the land and do more to protect and improve the land than any other group of which I am aware. Over the past twenty years Kennecott has spent more than half a billion dollars on environmental cleanup and remediation. Kennecott certainly ranks at the top of the mining companies we deal with in terms of concern for the environment and action taken to mitigate environmental disturbance as a result of mining activities.

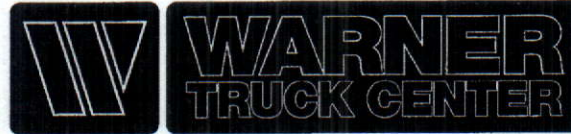
It would be difficult to overstate the importance of Kennecott to Utah's economy. When the mine shut down operations temporarily in 1982, the economic impact to the Wasatch Front was devastating. Conversely, when the mine reopened in 1984, the Wasatch Front economy came to life and began to grow as well. When Kennecott prospers, the local economy prospers as well. I would suggest that the single most significant thing our state could do to promote good paying jobs and economic growth along the Wasatch Front is to approve the Cornerstone Project.

My sincere hope is that state regulators will consider the vital role Kennecott plays in the local economy, Kennecott's leading role in improving previously mined lands and improving air and water quality, and the many families whose lives are better because Kennecott is here.

Thank you for your consideration.

A handwritten signature in black ink, appearing to read "Rob Campbell". The signature is fluid and cursive, with a large initial "R" and "C".

Rob Campbell
CEO
Wheeler Machinery Co.



UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 21, 2011

Gina Crezee
Director, Government, Corporate & Community Relations
Kennecott Utah Companies / Copper Product Group
4700 South Daybreak Parkway
South Jordan, UT 84095

Dear Gina,

I am writing this letter to express my concern over the possibility of KUC not receiving permission to expand the South wall of their mine. I am the CEO of the Warner Truck Center, representing Freightliner, Western Star, Trail King and several other manufactures of heavy trucks and equipment. We employ over 300 people in Utah, several of which work as sublet contractors to help our company run the KOS (Kennecott Operating Services) shop in West Jordan. This shop services the "white iron" (trucks that go out of the mine on the public roads). The newer trucks require training and equipment to operate the 32 on and off board diagnostic computers necessary to maintain the trucks making it more efficient for KUC to subcontract the maintenance of the trucks to dealers who represent the manufacturers of the trucks they buy. As a company who does business with KUC in and out of the mine, I feel that we have a unique perspective on how this company operates and how it affects our community.

I believe that if KCC is not allowed to expand their mine that the negative consequences to our local economy and the people in this community would be far greater than the general public might perceive to them to be. A few of the reasons that I feel this way are as follows:

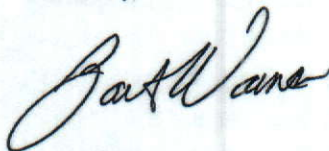
1. I have recently experienced how desperate our neighboring states are to create new jobs. A major vendor to our heavy trucks and the equipment that KUC uses in the mine was ready to purchase land in our 100 acre truck center to build a \$10 million dollar facility to remanufacture their products. However, when the state of Colorado heard that they were close to making that commitment in Utah, they offered them an incentive package with tax credits and incentives in excess of mid six figures (to be paid by the taxpayers of Colorado) if they would move the operation to Denver with a minimum requirement that created at least 20 new jobs. They also threw in some additional incentives for future years. From a sheer economical perspective, they could not resist the offer so the new building is now under construction in Denver.
2. I believe that the ratio of one KUC job creating or influencing five others in the community is not only accurate, but certainly not something to take lightly – especially with the economic challenges we all face. It's easy for some to say they don't want more industry – but what is their solution to fund the needs of the state and provide good jobs without it?

3. As a dealer of heavy trucks, using diesel engines, I am very aware of what the EPA has required our industry to do to reduce emissions. I recently asked a Californian who owned a Prius which vehicle emitted more emissions – his Prius, or a new Class 8 diesel tractor? He immediately responded, “The diesel truck! “ I then asked how much carbon and nitrous oxide was emitted from the Prius – he did not know. I told him that a 500 HP diesel engine in a new heavy truck now only puts out 2 parts per million of carbon, which would mean that the air coming out of that diesel engine was cleaner than the air in the largest 50 cities in America! He was not only amazed, but he had no idea how clean and quiet the new engines were. The technology to accomplish this feat has come at a high price – which KUC is paying to operate trucks that literally become “air recyclers” on smoggy days in the Salt Lake valley.

4. KUC’s focus on SAFETY is amazing. Their top three incentives are: Safety, Safety, & Safety! One time I took my hard hat off while in the mine – in a shop building to adjust the headband. However, before I could get it back on – sirens went off and two individuals who had seen me on their video camera’s came over to explain the fact that it was not acceptable to remove a hard hat at any time while in the mine – or I could be replaced by another vendor who would comply. Their influence on our company to become a safer place to work has been substantial.

I believe that KUC really does care – not just about preventing accidents – but what their operations do to our community. We deal with several thousand different customers. I don’t know of many if any companies like KUC who have the ability to create more local jobs that have a future with an opportunity for pay that is far above the average in the state. I believe that the biggest liability to a company like this causing them to not being able to continue providing jobs would be that they are hit with unreasonable demands promoted by those who have selfish interests that scare people in our community with incorrect information. My hope is that the request to expand the mine will be approved so that we can continue to have one of the most economically viable companies that Utah has ever known continue investing in our state and in our people with high paying jobs that are safe and have a ripple effect to create many other jobs in our community.

Sincerely,

A handwritten signature in cursive script that reads "Bart Warner".

Bart Warner, CEO, Warner Truck Center

February 15, 2011



UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

To whom it may concern:

I am writing on behalf of Hale Centre Theatre in support of the Cornerstone Project at Rio Tinto/Kennecott. I offer this recommendation without hesitancy. While I am not in a position to comment on social/environmental concerns that may be associated with this expansion, I can say with assurance that the people behind the scenes care for our community. Rio Tinto is an organization which prides itself on improving the quality of life within its reach.

Although our example is a small one – please allow me to share how Rio Tinto has impacted Hale Centre Theatre.

- Rio Tinto has been a top five corporate contributor to Hale Centre Theatre every year since 2002. This partnership is vital as ticket revenue covers only 80% of the operating budget. This gift is appreciated by 250,000 patrons annually.
- In addition to cash donations, three years ago, Rio Tinto donated a Commercial Natural Gas Compressor to the Theatre. This has made a dramatic difference in the price of transportation. In addition, we now have 9 employees who drive NGV vehicles. Employees may fuel for free if they drive a NGV vehicle. This has helped in employee retention as an added benefit to the Theatre's employees. This has also clearly paid dividends in terms of keeping the air cleaner. We are proud to tout our efforts in keeping the environment clean and Rio Tinto has been a major part of that story.
- Our Theatre is represented on the Salt Lake Chamber's, Clean Air Committee. It has been inspiring to watch Rio Tinto take the lead in their efforts to improve our air quality.
- Finally, just a year ago, Rio Tinto accepted an invitation to have Anna Wiley (Refinery General Manager) serve on the Theatre's Board of Trustees. Anna's active participation and input continue to benefit our efforts. This is an example of Rio Tinto's desire to not just give money, but to be an active participant in growing our great state – in many different facets.

My accolades for the company are not based in the hope for future donations. This acknowledgment speaks to our long history of partnership. Our founder Nathan Hale supported his family for several years as an employee at Kennecott before he jumped into the theatre business. As evidenced, Rio Tinto has supported our efforts for several years before this project was put into motion. I am hopeful the Conerstone Project will move forward and be profitable. Not only will it provide work for Utahans for many years – but I am confident their positive impact within our community will continue to be realized as Rio Tinto enjoys future success.

Sincerely,

Mark Dietlein

President and CEO, Hale Centre Theatre



3333 SOUTH DECKER LAKE DRIVE (2200 WEST)
WEST VALLEY CITY, UTAH 84119
PHONE: 801.984.9000 FAX: 801.984.9009

- ON THE INTERNET -
www.halecentretheatre.org
UTAH'S PREMIERE FAMILY THEATRE



WESTMINSTER

MICHAEL BASSIS
PRESIDENT

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 11, 2011

A letter of support for Kennecott Utah Copper

Westminster College has a long-standing relationship with Kennecott Utah Copper. Over many years, Kennecott has provided the college with funding for programs, capital projects, and scholarships. Most recently, Kennecott supported green initiatives within our new Meldrum Science Center; their help was instrumental in allowing us to earn LEED platinum certification. Our students also benefit from several Kennecott scholarship grant opportunities in the area of environmental studies.

Our alumni have found meaningful work experience at Kennecott, and we are pleased that many of them have established their careers there. The leadership at Kennecott has lent their expertise and resources to many of Westminster's boards and advisory groups, and helped us connect with many others within the Utah community.

The college appreciates their partnership, and we are pleased to highlight the important role that Kennecott Utah Copper plays within the regional economy:

- In 2009, the direct employment of 2,400 people at KUC and Rio Tinto business units added 14,800 indirect jobs totaling approximately 17,200 jobs in Utah.
- In 2009, over 27,500 Utahns—or about 8,800 households—were sustained because of the \$900 million dollars of in-state spending by KUC in the Utah economy.
- If KUC were to expand the life of the mine to 2034, the predicted direct and indirect job creation would be over 23,000 jobs and the personal income generated in Utah because of the economic activity of KUC is estimated to average \$1.5 billion annually.

Equally important to our region is the consistent commitment to charitable giving that Kennecott has provided. In 2008, the company gave \$1.2 million and in 2009, 150 organizations benefited from \$1.1 million in donations. In addition to corporate contributions, the Kennecott Utah Copper Visitors Center Charitable Foundation, funded by proceeds collected at the mine's Visitors Center, has given more than \$2.4 million over 19 years to help organizations that aid the disabled, children, veterans, homeless and the elderly.

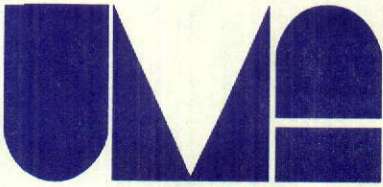
Westminster College supports Kennecott's capacity to grow, prosper, and maintain their leadership in our community as corporate citizens and stewards of Utah's precious resources.

Best regards,

Michael S. Bassis
President

A UNIQUE ENVIRONMENT FOR LEARNING

1840 South 1300 East • Salt Lake City, Utah 84105 • 801.832.2550
mbassis@westminstercollege.edu • www.westminstercollege.edu



Utah Mining Association

136 SOUTH MAIN STREET, SUITE 709

SALT LAKE CITY, UTAH 84101-1672

TEL: (801)364-1874 FAX: (801) 364-2640

E-mail: mining@xmission.com Website: www.utahmining.org

February 16, 2011

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Mr. Kelly Sanders
Rio Tinto/ Kennecott Utah Copper
4700 Daybreak Parkway
South Jordan, Utah 84095

Dear Mr. Sanders,

I am pleased and excited to express my public support for the Rio Tinto Kennecott Utah Copper Cornerstone Project. Extending the life of the Bingham Canyon mine will continue to impact the state of Utah in a positive manner for many years to come both economically and by providing the metals that are essential to the modern comforts of daily life.

Mining has been a vital aspect of Utah's economic, industrial, political, and development in the state of Utah since the 1800's. Kennecott's Bingham Canyon Mine has been in existence for 108 years, it has long been a major economic contributor to the state of Utah through direct and indirect employment, taxes, fees, and purchases from some 1,000 Utah companies. No other single private sector operation has generated more production, exports, income and employment for as many years in Utah.

As the President of the Utah Mining Association, it has been my pleasure to work closely with Rio Tinto. I have appreciated the transparency and support given to the Utah Mining Association.

I have been able to observe Kennecott and see their proven track record for working closely with the regulators in the mining industry and communities to reach mutually beneficial goals. Kennecott's commitment to the environment and community is apparent through your involvement in air quality activities, such as your recent plans to improve air quality in the Salt Lake Valley by upgrading your power plant to a high-efficiency natural gas system. Should the Cornerstone Project be approved it would be the equivalent of removing 1 in 10 cars from the road in Salt Lake and Utah counties. Also, through the impressive sustainable development story of Kennecott's Daybreak Community and various LEED certifications; and lastly, the reclamation work performed on the environment from legacy issues at the cost of more than \$350 million.

A corporation such as Rio Tinto Kennecott creates a positive example for the mining industry. I look forward to working closely with you in the future and appreciate your valuable contributions to the mining industry.

Respectfully yours,

Todd R. Bingham, President
Utah Mining Association

UTAH MANUFACTURERS ASSOCIATION



136 E. South Temple, Suite 1740
Salt Lake City, UT 84111-1134
Telephone: (801) 363-3885
Fax: (801) 363-0505
Email: uma@umaweb.org

February 11, 2011

Ms. Gina Crezee
Rio Tinto
4700 Daybreak Parkway
South Jordan, UT 84095

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Re: Letter of Support for Kennecott's Cornerstone Project

Dear Ms. Crezee:

As the President of the Utah Manufacturers Association, I am pleased to publically support Rio Tinto's Kennecott Utah Copper Cornerstone Project. UMA believes extending the life of the mine will continue to impact the state of Utah in a positive manner both economically and by providing high-paying safe jobs in both mining and manufacturing.

The manufacturing sector is the backbone of the state's economy. The manufacturing industry in Utah is successful in part because of the more than 100 year contributions of Kennecott Utah Copper. We know and acknowledge that Kennecott is Utah's largest exporter and the second largest copper producer in the United States.

We recognize that for more than 100 years, Kennecott has been a leading manufacturer in Utah with historic production of 18.7 million tons of copper from the Bingham Canyon Mine. They continue to support the Utah economy every year by manufacturing approximately 300,000 tons of copper, 500,000 of gold, 4 million ounces of silver, 25 million pounds of molybdenum, and 1.1 million tons of sulfuric acid, a by-product of the smelting process.

Copper is vital to modern life. It is necessary for building construction, transportation, industry, computers and electronics, as well as advanced green technology, such as solar panels, wind turbines and hybrid cars. Copper supports many other industries that enable our state to thrive and continue to grow.

By extending the life of the Bingham Canyon Mine, Utah could effectively maintain high-paying jobs beyond 2019. With Rio Tinto's average payroll - including benefits - of nearly \$93,000 in 2009, jobs at Kennecott are among the highest-paying jobs in Utah.

UMA recognizes that Kennecott Utah Copper is a leader in safety. With an all-injury frequency rate (AIFR) a mere fraction of other industry's - including finance - AIFR in the United States, Kennecott has demonstrated that safety is a core value. We believe this safety culture has permeated the organization at every level and is a direct representation of solid leadership.

The Utah Manufacturers Association has worked closely with Rio Tinto on a number of issues and we appreciate the transparency, outreach and leadership demonstrated by Rio Tinto. KUCC was a charter member of UMA in 1905 and has continued as an industry leader in both mining and manufacturing for more than 100 years. We should do all we can to continue this proud tradition and contribution to Utah's economy.

Sincerely,

A handwritten signature in black ink, appearing to read 'Thomas E. Bingham', written over a horizontal line.

Thomas E. Bingham, President



GUADALUPE SCHOOLS

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Victoria M. Mori

Board of Directors
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Melinda Pelo
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Robert Rendon
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Debbie Thacker

Early Learning Center
Voluntary Improvement
Program

340 South Goshen Street
Salt Lake City, UT 84104
Phone: (801) 531-6100
Fax: (801) 531-6106
www.guadalupe-schools.org



United Way of Salt Lake

February 17, 2011

Gina Crezee
Rio Tinto
4700 S. Daybreak Pkwy
South Jordan, UT 84095

Dear Ms. Crezee,

As the Executive Director of Guadalupe School, I extend my strong support and gratitude to Rio Tinto for their many years of support to our school and the families we serve on Salt Lake's west side.

We are grateful for the financial contributions the school has received over the past 20 years in support of our various programs that serve low-income children and immigrant adults wishing to improve their lives through education. Rio Tinto has been a consistent sponsor of our yearly gala event, Dream Auction, which plays a critical role in sustaining our annual operations. In addition, Rio Tinto employees have provided invaluable service as Board members and volunteers. We greatly appreciate the experience, talent, and leadership these individuals have shared and continue to share with the school.

Guadalupe School experiences first-hand the commitment Rio Tinto has to the community. We look forward to a long partnership with our friends at Rio Tinto and thank you again for the many lives you've helped change here at Guadalupe School.

Sincerely,

Vicki Mori
Executive Director

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY



Melissa K. Johnson
Mayor

8000 South Redwood Road
West Jordan, Utah 84088
(801) 569-5110
Fax (801) 565-8978

February 10, 2011

Mr. Kelly Sanders
President & CEO
Kennecott Utah Copper
4700 Daybreak Parkway
South Jordan, UT 84095
Re: Letter of Support for Kennecott's Cornerstone Project

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Dear Kelly:

As Mayor of West Jordan, and with the unanimous approval of the West Jordan City Council, I am pleased to support Rio Tinto's Kennecott Utah Copper Cornerstone Project.

For more than 100 years, Kennecott has been a leading manufacturer in Utah with historic production of 18.7 million tons of copper from the Bingham Canyon Mine. Kennecott is Utah's largest exporter and the second largest copper producer in the United States.

The Cornerstone Project will not just extend the life of the Bingham Canyon Mine, but will provide jobs and economic stability for our community. Total in-state spending by Rio Tinto business units in 2009 was \$900 million, composed of approximately \$250 million in wages, salaries, pensions and benefits and approximately \$650 million in purchases from almost 1000 Utah vendors and contractors. By extending the life of the Bingham Canyon Mine, Utah could effectively maintain high-paying jobs beyond 2028. With Rio Tinto's average payroll - including benefits - of nearly \$93,000 in 2009, jobs at Kennecott are among the highest-paying in Utah.

Kennecott Utah Copper has been a conscientious and responsible industry leader - a powerful economic force that has championed workplace safety, environmental stewardship, and community outreach and support.

I look forward to working closely with you in the future and appreciate the valuable contributions you have made to Utah's community and economy.

Sincerely,

Melissa K. Johnson
Mayor
West Jordan City



SLC FILM CENTER

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

To Whom It May Concern:

MAR 21 2011

The SLC Film Center is proud to salute Rio Tinto's corporate citizenship and ethic of giving back to our community. We are fortunate to be among Rio Tinto's many beneficiaries throughout the state, and look forward to its expanded reach via Kennecott Utah Copper's Cornerstone Project. As a non-profit, we have watched Rio Tinto and Kennecott Utah Copper take initiatives to explore issues of sustainability, worker's safety, air quality and environmental management. They did so proactively and because it was the right thing to do. Their leadership team has modeled for us the values of transparency and community-building, and we thank them for not only the financial resources they have invested in us, but also for the time and counsel they have given us as members of our board and as corporate underwriters of our programming.

Kennecott Utah Copper has been donating funds to worthy causes in the Salt Lake area since 1906 and reports community giving in annual Sustainable Development Reports. In 2009, Rio Tinto gave \$1.1 million to about 150 organizations. In addition to the support given to us, I am personally and professionally grateful for the support given to the Utah Museum of Natural History. Utah is the Petra of North America and deserves a Museum of Natural History that matches its landscape, mineral diversity, biodiversity and paleontology. It is destined to become a community treasure because of Rio Tinto's leadership.

Kennecott Utah Copper's impact on our economy and as an economic generator is impressive. Copper is essential to modern life. It is necessary for building construction, transportation, industry, computers and electronics, as well as advanced green technology such as solar panels, wind turbines and hybrid cars. No other single private sector operation has generated more production, exports, income, and employment for as many years in Utah. Equally

122 SOUTH MAIN STREET
SALT LAKE CITY, UTAH 84101
801.746.7000
SLCFILMCENTER.ORG

BUILDING COMMUNITY THROUGH THE POWER OF FILM



SLC FILM CENTER

impressive, Kennecott has also spent more than \$400 million over the past two decades on the cleanup of historic mining sites and \$100 million on groundwater remediation. As a non-profit whose mission is education, we are excited to have a corporate citizen investing in new technologies and energy-based businesses that will help grow our workforce, while also taking responsibility for the stewardship and clean up that comes with mining.

Mining, like media, is changing, and must diversify in order to stay viable and innovative. The Cornerstone Project will help sustain Rio Tinto's employment of 2,400 people and provide an additional 14,800 indirect jobs, for a total of 17,200 Utah jobs.

We realize that mining, by its very nature, disturbs the land, uses natural resources and energy, and generates waste. We are grateful to live in a community that collaborates and believes in private public partnerships, and we applaud Rio Tinto's partnerships with The Nature Conservancy, Birdlife International, Tracy Aviary, and their stewardship of the Inland Sea Shorebird Reserve, which provides feeding, staging and breeding habitat for thousands of migratory birds on the south shore of the Great Salt Lake. The 3,670-acre reserve is one of the largest wetland mitigation banks in the United States and is important to protect. The fact that Kennecott shares these beliefs and is committed to off-setting its impact and helping to grow a vibrant and diverse community gives us one more reason to be grateful to live and work in this great State.

Sincerely,

Geralyn White Dreyfous
Founder
SLC FILM CENTER



UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

December 6, 2010

To Whom It May Concern:

We are pleased to support the continual growth and mine life expansion of Bingham Canyon Mine, Kennecott Utah Copper and Rio Tinto business units within our community.

The Bingham Canyon Mine operations support more households than any other private Utah firm, including over 8000 households in 2009 alone. Many of the 27,500 Utahns impacted by this operation reside in West Valley City.

The economic impact that all of KUC and Rio Tinto business units have had on our community cannot be overestimated. With over \$250 million in payroll, 2400 employees and over 14,000 indirect jobs created, these operations are vital to our community, our state and indeed our county.

It is anticipated that if the mine life expansion were approved the direct and indirect job creation would peak at over 23,000 jobs while generating over \$1.5 billion annually in economic activity.

We consider Bingham Canyon Mine, Kennecott Utah Copper and Rio Tinto a strategic partner in assisting us in building safe and livable communities for our citizens for many years to come!

Sincerely,

Wayne T. Pyle
City Manager

BILL BARTON
PRESIDENT

CRAIG FARNSWORTH
VICE PRESIDENT

KAREN BARTON
SECRETARY

West Valley Lions Club
West Valley City, Utah



"We Serve"

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 11, 2011

Mr. Ted Himebaugh
General Manager, Mining
Bingham Copper Mine
4700 Daybreak parkway
South Jordan, UT 84095

Dear Ted:

Thank you so much for the fine presentation you gave to the West Valley Lions club and guests on February 10. Your 'Cornerstone' project sounds exciting and full of promise for several more years of successful mining in our area.

We were glad to see the projections and drawings of the ore deposits that still remain below the open pit mine.

It was gratifying to know that Kennecott and Rio Tinto will continue to be one the chief employers in our area and mainstay in the economy of the state of Utah for years to come.

Sincerely,

Bill Barton, Pres.
West Valley Lions Club

CC: Ms. Holly Robb

February 3, 2011

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Gina Crezee
Rio Tinto, Communications and External Relations
Principal Advisor, Government & Community Relations
Rio Tinto Regional Center
4700 Daybreak Parkway,
South Jordan, UT 84095

Dear Ms. Crezee,

To Whom It May Concern

I am writing on behalf of Ballet West in support of Kennecott Utah Copper's Cornerstone Project. As a representative of Utah's Cultural Performing Arts Community, I recognize the value and benefit that Kennecott Utah Copper provides to our entire state.

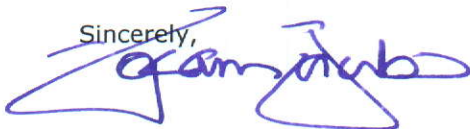
Kennecott as a Corporate Citizen and an effective Change Leader is integral in its contribution to the livability and economic viability of our community. No other single private sector operation has generated more production, exports, income, and employment for as many years in Utah. The economic impact that Rio Tinto and Kennecott business units have had on our community cannot be underestimated. The Cornerstone Project will help sustain Rio Tinto's employment of 2,400 people and an additional 14,800 indirect jobs, for a total of 17,200 Utah jobs and provided approximately \$250 million in wages, salaries, pensions and benefits and approximately \$650 million in purchases from Utah firms. The \$900 million includes payments to Utah state and local governments.

If the Cornerstone investment is not made, the economic contribution will decrease beginning in 2021 by an average of \$630 million a year. In contrast, by extending Cornerstone investment the life of the Mine will pump an average of \$1 billion a year into the local economy through the mid-2030's.

This is important to Ballet West and Utah's cultural community as it provides for greater opportunity and access to increase our own, invaluable patron and donor bases in support of the arts. Additionally, Rio Tinto has been donating funds to worthy causes in the Salt Lake area since 1906. The company reports community giving in annual Sustainable Development Reports and in 2009 gave \$1.1 million to about 150 organizations. In 2008, the company's support amounted to \$1.2 million. Organizations supported range from The Road Home to The Nature Conservancy and from the Magna Ethnic and Mining Museum to the Tracy Aviary and included Ballet West.

I strongly encourage you to support Kennecott Utah Copper's Cornerstone Project and thank you for your consideration for this important project which will continue to develop and support Utah's economy for years to come.

Sincerely,



Johann Jacobs
Executive Director





February 7, 2011

Ms. Gina Crezee
Rio Tinto
Director, Government, Corporate & Community Relations
4700 Daybreak Parkway
S. Jordan, UT 84045

UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Dear Ms. Crezee:

Partnerships are vital in the development of communities. By combining the efforts of business, communities and education we enhance the achievement of our children, their education and our collective future. The Jordan Education Foundation (JEF) includes in our mission statement the need "to cultivate lasting partnership with businesses to raise resources to enhance the quality of education for students in Jordan School District."

The Cornerstone Project of Rio Tinto is being proposed to extend the life of the mine. JEF exists to extend and enhance the life of our communities through education. What a great partnership. Over the years Rio Tinto has been a major financial contributor to the district from three funding sources: Employee Care and Share Giving, Corporate Contributions and the Charitable Foundation. Rio Tinto recognizes the importance of having an educated workforce and that a safe and desirable neighborhood for employees to live also depends on an educated population.

Jordan Education Foundation considers our business/education partnership with Rio Tinto exemplary. Rio Tinto is the major employer for families and future families in our district providing high paying jobs and taxes that support the public education system. JEF relies on private donations from Rio Tinto to ensure an added measure of excellence to public education for our students and classrooms. In addition to the donations to the Foundation, Rio Tinto provides opportunities for educational programs and on-site field trip experiences. Jordan School District provides a world-class education for children of Rio Tinto employees. This translates into some of the finest communities to live and work.

JEF lends our support for Kennecott Utah Copper's Cornerstone Project to extend the life of the mine. We are very appreciative for our partner and neighbor, Rio Tinto.

Sincerely,

A handwritten signature in blue ink that reads "Steven Hall". The signature is fluid and cursive, with the first name being the most prominent.

Steven Hall, Director

February 07, 2011

Holly Robb
Sr. Advisor of Government and Community Relations
Rio Tinto
4700 Daybreak Parkway
Salt Lake City, Utah 84095

Dear Holly,

It is a privilege to write this letter to extol the wonderful relationship of Rio Tinto with our greater Salt Lake community. For the past twenty years the Granite School District and the other Wasatch Front School Districts have enjoyed great support from Kennecott and Rio Tinto. Each year they have generously provided grants to the Education Foundations of Granite, Murray, Jordan and Salt Lake. Their financial contribution helps our school programs succeed. During the ups and downs of our economy they continue to consistently give help and assistance.

In December of each year they also provide monies for the students needs such as eye exams, eyeglasses, shoes, coats, etc. The money helps us serve many families with great need. They also provide assistance to many of the schools in the districts mentioned. They help them with many additional requests such as athletic equipment, uniforms and many other means for student support.

It has been my privilege to serve on the Visitors Center Board for Rio Tinto that provides another source of revenue to many deserving community programs and centers. These would include but not be limited to the following: The Road Home, The Utah Food Bank, numerous senior centers across the valley, student aid in neighboring school districts, Rape Crisis Center, YMCA and YWCA. They have given away \$100,000 over the past years to meet and assist many of the social needs and programs in our valley. No one has given more help to our communities than Kennecott/Rio Tinto. We applaud them and thank them for their commitment to improving our several communities. When it comes to partnerships...Rio Tinto is number one.

Sincerely yours,

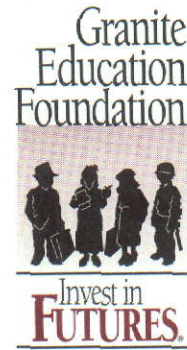


W. Scott Whipple
Executive Director/Granite Education Foundation
Granite School District

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY



450 East 3700 South
Salt Lake City, Utah
84115-4634
385-646-4590
Fax 385-646-4242

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President and Chair
Midge Treglown
Secretary/Treasurer
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Jon Tingey
Cannon Tingey Investment
Katharine Newton
Awareness & Partnerships
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Student Support
W. Scott Whipple
Executive Director

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UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

February 16, 2011

MAR 21 2011

Holly Robb

DIVISION OF AIR QUALITY

Senior Advisor

Local Government, Community Relations, Communications, External Relations

I have lived in the community of Copperton for 62 years. I have had the privilege of working at the Bingham Canyon mine for 47 years as an employee and as a contractor.

I have served on the Copperton Community Council for 12 years, 6 of which I have chaired the council.

I attended an open house on Tuesday February 8, 2011 that Rio Tinto/Kennecott Companies sponsored. Approximately 70 residents from our community attended the open house. Residents had the opportunity to view overlays of the proposed Corner Stone Project and discuss their concerns with Rio Tinto/Kennecott personnel. The majority of the residents that attended the open house viewed the Corner Stone Project favorably.

Rio Tinto/Kennecott is concerned about the environment and has in place a very effective environmental plan.

During the open house as I spoke with various Rio Tinto/Kennecott personnel, I asked them questions about the conveyor system that is located west of our community. As a community we have concerns about the amount of ore that will be transported along the conveyor. With more tonnage comes more dust. They explained that if necessary upgrades would be made to the sound walls that surround the C-6/7 and C-7/8 transfer stations, bag houses would be upgraded and modified to collect the dust particles.

I have seen firsthand the professional manner in which Rio Tinto/Kennecott mined the Giant Leap Project on the east side of the mine operation. The majority of the overburden from the Giant Leap Project was transported by haulage trucks down Bingham Canyon and dumped approximately 2 ½ miles west of our community. The Copperton Community Council has met with Rio Tinto/Kennecott on a regular basis and discussed the concerns of the community. Rio Tinto/Kennecott always returned to our council in a timely manner and explained what measures they would implement to correct any deficiencies.

If the Rio Tinto/Kennecott Companies secures the necessary permits and continues with the proposed Corner Stone Project I am confident they will continue to be an excellent neighbor and operate the Bingham Canyon mine in a professional and ethical manner.

Gary C. Curtis

Copperton Community Council Chair



UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 2, 2011

Gina Crezee
Director, Government, Corporate & Community Relations
Kennecott Utah Companies / Copper Product Group
Rio Tinto
4700 South Daybreak Parkway
South Jordan UT, 84095

Dear Ms. Crezee,

Discovery Gateway children's museum prepares children for the future and enables them to meet their highest potential. As CEO of Discovery Gateway, I applaud and support the other organizations in our community who share this vision. Kennecott has continuously been involved with the children of our community, and has supported education and discovery for generations of Utah children and families. The Cornerstone Project will not just extend the life of the Bingham Canyon Mine, but will provide jobs and economic stability for our community, as well as ensure Kennecott's continued support of our community's children.

I would also like to add that as the environment and our natural resources become an ever more important issue for children to understand and embrace, I value Kennecott's transparency and focus on sustainability. With more than 300,000 children and families who visit Discovery Gateway every year and look to this organization as an educational resource, I do not offer my endorsement of the Cornerstone Project lightly—it is because I believe that Kennecott is also looking toward the future of our children.

Thank you for the opportunity to express my support for this project and please do not hesitate to call upon me for further information.

Sincerely,

Maria S. Farrington
Chief Executive Officer
Discovery Gateway



PO BOX 136

Magna, UT 84044

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

To Whom it May Concern,

The Magna Town Council gives its full support to Kennecott's new corner stone project.

- Each year, Kennecott Utah Copper produces nearly 25 percent of America's supply of refined copper. Kennecott has mined and refined 18.7 million tons of Utah copper throughout its history.
- Copper is essential to modern life. It is necessary for building construction, transportation, industry, computers and electronics, as well as advanced green technology, such as solar panels, wind turbines and hybrid cars.
- Throughout much of the 20th century, the combined economic activity at the Bingham Canyon mine and related facilities sustained more Utah households than any other private Utah firm.
- No other single private sector operation has generated more production, exports, income, and employment for as many years in Utah.
- In 2009, KUC produced 25% of the nation's copper and molybdenum. KUC also supplied approximately 10% of the domestic silver and gold production. The combination of copper as well as molybdenum, gold and silver by product production makes KUC one of the most important mining assets within Rio Tinto and the United States.
- A study conducted by the University of Utah's Bureau of Economic and Business Research department (BEBR) found that Rio Tinto spent approximately \$900 million in 2009 on employee salaries and benefits, taxes and fees, as well as purchases from nearly 1,000 Utah companies. The study estimated if the Cornerstone investment is not made, the economic contribution will decrease beginning in 2021 by an average of \$630 million a year. In contrast, the study estimated that extending the life of the Mine will pump an average of \$1 billion a year into the local economy through the mid-2030's.
- Total in-state spending by combined KUC and Rio Tinto business units in 2009 was \$900 million, composed of approximately \$250 million in wages, salaries, pensions and benefits and approximately \$650 million in purchases from Utah firms. The \$900 million includes payments to Utah state and local governments.
- Kennecott has also spent more than \$400 million over the past two decades on the cleanup of historic mining sites and \$100 million on groundwater remediation.
- KUC and Rio Tinto business units directly employed 2,400 people with an annual payroll of approximately \$250 million, which includes wages, salaries, pensions and benefits. The average payroll per job (including benefits) of nearly \$93,000 in 2009 makes these among the highest-paid jobs in the state.
- The project will also help sustain Rio Tinto's employment of 2,400 people and an additional 14,800 indirect jobs, for a total of 17,200 Utah jobs.

- In 2009, over 27,500 Utahns—or about 8,800 households—were sustained because of the \$900 million dollars of in-state spending by KUC and the Rio Tinto business units in the Utah economy.
- Rio Tinto has been donating funds to worthy causes in the Salt Lake area since 1906. The company reports community giving in annual Sustainable Development Reports and in 2009, gave \$1.1 million to about 150 organizations. In 2008, the company gave \$1.2 million. Organizations supported range from The Road Home to The Nature Conservancy and from the Magna Ethnic and Mining Museum to the Tracy Aviary.
- In addition to corporate contributions, the Kennecott Utah Copper Visitors Center Charitable Foundation, funded by proceeds collected at the mine's Visitors Center, has given more than \$2.4 million over 19 years to help the poor and needy, with an emphasis on the disabled, children, veterans, homeless and the elderly. In 2010, the Foundation donated \$186,000 to support 106 local charities.
- We realize that mining, by its very nature, disturbs the land, uses natural resources and energy, and generates waste. Because of those facts, we are committed to a set of stringent, self-imposed environmental goals. Here are some examples of our commitment:
 - High-efficiency buildings. We're committed to ensuring that our new buildings are built to meet high-efficiency standards. The Rio Tinto Regional Center in Daybreak is the first building in Utah to earn the LEED Platinum certification. In addition, five other facilities have achieved some level of LEED certification. Kennecott Land's Daybreak community, a very successful example of redeveloping a former industrial site for housing and commercial uses, is a member of the LEED for Neighborhood Development pilot program.
 - Environmental management. We have met rigorous international standards in environmental management and have been ISO 14001 certified since 2003.
 - Biodiversity. Kennecott is committed to preserving biodiversity and partners with a variety of conservation organizations, including The Nature Conservancy, Birdlife International, Tracy Aviary, and others. We're stewards of the Inland Sea Shorebird Reserve, which provides feeding, staging and breeding habitat for thousands of migratory birds on the south shore of the Great Salt Lake. The 3,670-acre reserve is one of the largest wetland mitigation banks in the United States.
 - Air quality. Kennecott is working with organizations such as the Salt Lake Chamber to identify ways to improve Utah's air quality. In the 2009 Clear the Air Challenge, Rio Tinto employees reduced their driving by 56,000 miles, eliminating more than 96,000 pounds of tailpipe emissions and saving more than 2,500 gallons of gasoline and won the competition.
 - Environmental recognition. We have received numerous awards for our health, safety and environmental commitments. We received Earth Day Awards from the Utah Division of Oil, Gas and Mining in 2004 for reclamation of Barneys Canyon, in 2009 for the Daybreak development, and in 2010 for reclamation of the Magna Concentrator. We received Awards of Merit from the Utah Safety Council in 2007, 2008 and 2009 for demonstrating outstanding quality in occupational safety and health programs. And we received the 2009 Outstanding Achievement in Pollution Prevention Award from the Utah Department of Environmental Quality for our Idle Management Program.

Kennecott and Rio Tinto have been valuable community partners and we look forward to this partnership continuing for many more years.

Sincerely,

Starr Hailey Campbell
Magna Town Council President

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 2 1 2011

DIVISION OF AIR QUALITY

February 15, 2011

Mr. Kelly Sanders
Rio Tinto
4700 Daybreak Parkway
South Jordan, UT 84095

Re: Letter of Support for Kennecott's Cornerstone Project

Dear Kelly:

On behalf of the Economic Development Corporation of Utah, I am pleased to offer our support for Rio Tinto's Kennecott Utah Copper Cornerstone Project.

For more than 100 years, Kennecott's contribution to Utah's economy has been very significant as a leading manufacturer in the state with historic production of 18.7 million tons of copper from the Bingham Canyon Mine. Kennecott is Utah's largest exporter and the second largest copper producer in the United States.

Total in-state spending by Rio Tinto business units in 2009 was \$900 million, composed of approximately \$250 million in wages, salaries, pensions and benefits and approximately \$650 million in purchases from almost 1000 Utah vendors and contractors. The \$900 million includes payments to Utah state and local governments.

We recognize that by extending the life of the Bingham Canyon Mine, Utah could effectively maintain these high-paying jobs beyond 2028. With Rio Tinto's average payroll - including benefits - of nearly \$93,000 per job in 2009, jobs at Kennecott are among the highest-paying in Utah.

EDC Utah appreciates Kennecott Utah Copper efforts to be a conscientious and responsible industry leader - a powerful economic force that has championed workplace safety, environmental stewardship, and community outreach.

Based on Kennecott's longstanding efforts, it is our expectation that you will continue to make mitigating environmental impacts a high priority and we strongly encourage you to commit sufficient resources to minimize the environmental impact of this expansion, especially in regard to air and water quality. In that regard, we specifically recognize your active participation in the Salt Lake Chamber's Air Quality Committee whose work we support at EDC Utah.

A. Richard Walje
Rocky Mountain Power
Chairman

Jeffery B. Edwards
President & CEO

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Questar Gas Company
Vice Chair - Private Sector

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Sandy City
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Qwest Communications
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Ogden City

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Peggy Larsen
Workers Compensation Fund

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University of Utah

Patricia Richards
SelectHealth

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Utah State Board of Regents

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Price Realty Group

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Industrial Supply Company

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Jones Waldo Holbrook & McDonough

Mayor Mike Winder
West Valley City

Greg A. Winegardner
Wells Fargo Bank

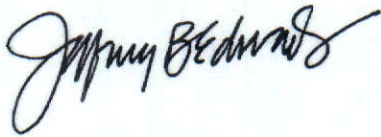
President Michael Young
University of Utah

M. Craig Zollinger
JPMorgan Chase

We all want Utah to remain a great place to live and to be attractive to new companies who will help to expand the economy of the state and bring opportunity to our citizens.

We appreciate your longstanding support of economic development statewide through our organization and we look forward to working closely with you in the future.

Sincerely,



Jeff Edwards
President & CEO

W. Kent Money, *Mayor*
Brian Butters, *Council Member*
Kathie L. Johnson, *Council Member*
Larry Short, *Council Member*
Aleta Taylor, *Council Member*
Leona Winger, *Council Member*
John H. Geilmann, *City Manager*



PH: 801.254.3742 EMAIL: info@sjc.utah.gov FAX: 801.254.3393

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

February 7, 2011

Ms. Holly Robb
Rio Tinto
4700 Daybreak Parkway
South Jordan, UT 84095

Re: Letter of Support for Kennecott Utah Copper's Cornerstone Project

Dear Ms. Robb:

As the South Jordan City Manager, I often write letters in support or in opposition to various projects being undertaken by businesses in close proximity to South Jordan. Kennecott Utah Copper definitely operates a business proximal to South Jordan City.

I have taken the time to familiarize myself with an upcoming project known as the Kennecott Utah Copper Cornerstone Project. The following are my personal observations regarding Kennecott and this project:

- Kennecott has spent more than \$400 million over the past two decades on the cleanup of historic mining sites and \$100 million on groundwater remediation.
- KUC and Rio Tinto business units directly employed 2,400 people with an annual payroll of approximately \$250 million, which includes wages, salaries, pensions and benefits. The average payroll per job (including benefits) of nearly \$93,000 in 2009 makes these among the highest-paid jobs in the state.
- The project will also help sustain Rio Tinto's employment of 2,400 people and an additional 14,800 indirect jobs, for a total of 17,200 Utah jobs.
- The Rio Tinto Regional Center in Daybreak is the first building in Utah to earn the LEED Platinum certification. In addition, five other facilities have achieved some level of LEED certification. Kennecott Land's Daybreak community, a very successful example of redeveloping a former industrial site for housing and commercial uses, is a member of the LEED for Neighborhood Development pilot program.

- The Kennecott Companies have received numerous awards for health, safety and environmental commitments. All Kennecott meetings begin with a “safety share” designed to remind people to be safety conscience in their work and off work activities.

The foregoing are only a few of the reasons that it is a pleasure for me to offer my full support to the Kennecott Utah Companies and especially their Cornerstone Project.

Sincerely,

A handwritten signature in cursive script that reads "John H. Geilmann". The signature is written in black ink and is positioned above the printed name.

John H. Geilmann, J.D.
City Manager



PETER M. CORROON
Salt Lake County Mayor

2001 South State Street
Suite N-2100
Salt Lake City, UT 84190-1020

801 / 468-2500
801 / 468-3535 fax

March 17, 2011

Ms. Cheryl Heying, Director
Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820

Subject: Salt Lake County's Comments on Kennecott Utah Copper's Bingham Canyon Mine Expansion Project, Approval Order IN0105710028-11, and the Proposed Changes to the Utah State Implementation Plan, Section IX-H.

Dear Ms. Heying,

Salt Lake County appreciates the opportunity to comment on Kennecott Utah Copper's Bingham Canyon Mine expansion project Approval Order IN0105710028-11, and the proposed changes to the Utah State Implementation Plan, Section IX-H.

We recognize the positive contributions Kennecott Utah Copper (KUC) has on our County, both economically and philanthropically. We also appreciate some of the measures KUC has pursued to make their operations more efficient using cleaner energy sources.

The County has an obligation to help protect our residents and ensure their communities are safe and healthy places to live, work, and play. The quality of our air continues to be one of the highest concerns expressed by our residents. We understand that addressing Salt Lake Valley's poor air quality requires focusing on a multitude of pollution sources, including KUC operations. The County is pleased to participate in internal and community awareness campaigns with our partners to bring attention to this issue and help educate individuals on how they can contribute to improving our air quality.

However, our current air quality is poor and current levels of PM_{2.5} in Salt Lake City during the winter month are significantly above established health advisory levels. As such, we would strongly encourage additional analysis be done specific to the potential negative impacts the mine expansion could have on air quality and the health of our residents. After reviewing all the related project documentation it is unclear the exact affects this project, and specifically levels of PM_{2.5}, will have to our already poor air quality. At the very least our residents have a right to fully understand just how this project might affect their health before a decision is made on modifying the Approval Order.

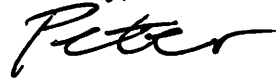
The County is requesting additional analysis be conducted to further clarify the impact this project will have specifically on PM_{2.5}, PM₁₀, and NO_x levels. We understand that any project delay, including the issuance of an Approval Order, is costly. However, potential health costs of additional pollution resulting in poorer air quality must also be considered during this process.

In addition, we have concerns over the proposed changes to the Utah State Implementation Plan (SIP) requested by KUC to increase the material-moved limitation amount in the 2005 approved SIP plan. As stated above, with air quality standards exceeding health advisory warnings during the winter months coupled with the unknown affects of the proposed increase, the requested change in the SIP are of concern without additional testing and analysis.

We understand the complex nature of this project and the many issues which must be considered in your analysis and final decision. With your mission to “safeguard human health and quality of life by protecting and enhancing the environment” we request further research and careful consideration of the potential health affects your decision may have on the residents of Salt Lake County.

Thank you again for the opportunity to submit our comments on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter", written in a cursive style.

Peter M. Corroon
Mayor, Salt Lake County

Kennecott Utah Copper
4700 Daybreak Parkway
South Jordan, Utah 84095
USA

Chris Kaiser, HSEQ Principal Advisor
Environmental Permitting and Regulation

March 21, 2011

Mr. Nando Meli
PO Box 144820
Salt Lake City, UT 84114-0482

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Dear Mr. Meli:

Subject: Approval Order DAQE-AN0105710023-08 (General Comments)

The Utah Department of Environmental Quality (DEQ) is receiving public comment on an Intent to Approve Modified Approval Order DAQE-AN0105710023-08 and on a proposed rule amendment to the Utah State Implementation Plan (SIP) Section IX, Control Measures for Area and Point Sources, Part H, Emissions Limits. Kennecott Utah Copper LLC (KUC) submits this public comment on the Intent to Approve and the proposed SIP rule amendment. KUC's previously-submitted technical showings for the Intent to Approve and the SIP rule amendment both satisfy the relevant legal requirements. However, in order to attempt to address certain concerns raised in other public comments, KUC is submitting the following additional comments.

KUC appreciates the robust process that the Utah Department of Air Quality (UDAQ) has undertaken to review the Notice of Intent (NOI) and Technical Support Document (TSD) for the KUC proposal to increase the material moved limitation from 197 million tons per year to 260 million tons per year. While mining operations do generate dust, KUC has implemented industry leading control measures and with this proposal will implement enhanced measures to further minimize emissions. Dust control measures are administered through a Fugitive Dust Control Plan (FDCP), which is a permit condition, requiring regular updates, and active inspections by UDAQ. KUC is also voluntarily proposing an emissions cap for PM₁₀ and precursors as well as PM_{2.5} and precursors. As UDAQ develops the State Implementation Plan (SIP) for PM_{2.5} and ozone, KUC understands that the SIP may dictate additional source control strategies for our facilities as necessary to bring the air shed into attainment.

Since monitoring data reflects real impacts to the air shed, KUC encourages members of the public to review the monitoring data available on the UDAQ website. Of all the monitors in the Salt Lake Valley, the PM_{2.5} monitors in Herriman and Magna and the PM₁₀ monitor in Magna, which are closest to KUC operations, show the lowest annual average monitored values for particulates.

Additionally, KUC has operated a PM₁₀ monitor in Copperton since prior to 1994. All activities proposed through this mine expansion are similar in scope but on an incrementally larger scale than previous mining phases. It is reasonable to assume the ambient impacts observed from the proposed expansion will be consistent with those associated with previous mining expansion phases. Mining activities such as the 1999 material movement increase, Lower Bingham Canyon waste rock placement and Giant Leap pushback, over time have shown no discernable changes in monitored concentrations and we would expect the same from this expansion. KUC is voluntarily proposing an additional ambient air quality monitor in the lower Butterfield Canyon area (area of peak modeled impacts) as a permit condition to verify continued compliance with the National Ambient Air Quality Standards (NAAQS), and to provide the public with additional ambient monitoring data.

KUC has performed air dispersion modeling of the proposed emission rates using AERMOD to further demonstrate that air quality near the mine would not be adversely impacted by the expansion. The highest 24-hour concentration of PM₁₀ predicted by the model, including background, was below 150 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), the NAAQS for PM₁₀. In addition to this analysis, KUC used the UAM modeling to evaluate the impact of the increase in material moved at the Bingham Canyon Mine (BCM) consistent with the state 2005 PM₁₀ Maintenance Plan. At the request of UDAQ, KUC enhanced the UAM modeling analysis by integrating a CALPUFF modeling analysis. Although all modeling analyses show compliance with the NAAQS, KUC will voluntarily relinquish 5,845 tons of emission reduction credits. While voluntary, the credits will be relinquished consistent with the methodology established in the federal 1994 PM₁₀ SIP. These credits were generated from previous, verified emission reduction projects. Relinquishing these credits ensures that the 1994 attainment demonstration is maintained.

Not only has KUC analyzed the potential impacts for the proposed increase to 260 million tons of material moved at the BCM, KUC has also estimated the overall emissions changes for the combined Cornerstone projects.

Overall, KUC estimates an emissions decrease of approximately 9 percent of PM₁₀ and precursors as well as PM_{2.5} and precursors from the combined Cornerstone projects.

Responses to various comments generated throughout the public comment period are shown below.

Category A: Technical comments on the Mine Air Approval Order, including overall mine emissions and impacts to ambient air quality

Comment AO.1

With the proposed increase in mining activity, what will be the increase in air emissions?

Response AO.1

Based on the current and projected mine plans, KUC is requesting to increase the material moved limitation from 197,000,000 tons per year to 260,000,000 tons per year of ore and waste rock combined.

Pursuant to the federal Clean Air Act, the UDAQ New Service Review (NSR) program regulates stationary sources of emissions only. Emissions such as those from non-road mobile equipment like haul trucks are regulated pursuant to emission standards established by EPA pursuant to Title II of the Clean Air Act. With the proposed modification, there will be a small increase in stationary source emissions. Nevertheless, KUC has voluntarily proposed an emissions cap for PM₁₀ and precursors as well as PM_{2.5} and precursors that include tailpipe and fugitive emissions.

Emissions from existing mobile and stationary equipment have been recalculated to maintain consistent methodology using the most current emission factors to provide an accurate estimate of emissions.¹ Table 1 provides a summary of emissions from the 197,000,000 tons per year (current) and 260,000,000 tons per year (future) material movement limitations. As is evident from Table 1, all listed air pollutants decrease from their current re-estimated PTEs to their future PTEs because KUC has committed to implementing new emissions controls strategies, such as changing its truck fleet to one with cleaner, bigger trucks, and using better dust control.

¹ EPA emission factors have been improved and updated, over time. Using a consistent set of emission factors allows for an “apples-to-apples” comparison of emissions at different operating levels.

TABLE 1
 Current and Future Peak Year Potential to Emit (PTE) Summary for BCM

Pollutant	Re-estimated Current BCM PTEs (197,000,000 tons per year)	Future BCM PTEs (260,000,000 tons per year)
PM ₁₀ (tpy)	1,686	1,513
PM _{2.5} (tpy)	685	368
SO ₂ (tpy)	97	6.56
NO _x (tpy)	7,247	5,830
CO (tpy)	4,352	1,682
VOC (tpy)	947	314

Comment AO.2

Is Kennecott separating the BCM mine and the Copperton Concentrator in air permits to avoid the major source threshold of 100 tons per year?

Response AO.2

No, the BCM and Copperton Concentrator are considered a single source for Title V Part 70 applicability purposes. The Copperton Concentrator operates under a separate AO from the BCM for administrative convenience. (The emission units and control requirements are distinct for each operations and different individuals have responsibility for the Mine and concentrator.) Under R307-101, a Major Source is defined as “any stationary source of air pollutants which emits, or has the potential to emit, one hundred tons per year or more of any pollutant subject to regulation under the Clean Air Act...” Emissions of stationary sources (point sources) at the BCM and the Copperton Concentrator are shown in Table 2. The aggregated emissions from stationary sources at the BCM and Copperton Concentrator do not approach major source status.

TABLE 2
 Combined Emissions, Mine and Concentrator

	Point Sources at BCM	Point Sources at Copperton Concentrator	Total Point Source Emissions
PM ₁₀ Emissions (tpy)	6.28	4.98	11.26
PM _{2.5} Emissions (tpy)	2.60	1.85	4.45
SO ₂ Emissions (tpy)	0.0002	0.00	0.0
NO _x Emissions (tpy)	1.17	0.35	1.52
CO Emissions (tpy)	10.6	0.2	10.8
VOC Emissions (tpy)	0.20	0.01	0.21

NOTE:

Point Source emissions for the Copperton Concentrator include the proposed modifications at the Concentrator and are subject to review from UDAQ.

Comment AO.3

Has the University of Utah white paper regarding “Escape emissions” from the mine/pit ever been peer-reviewed by a qualified peer reviewer?

Response AO.3

The “Airflow Patterns and Pit-Retention of Fugitive Dust for the Bingham Canyon Mine” study was conducted by Dr. Ragula Bhaskar and Navin Tandon, Department of Mining Engineering at the University of Utah. The University of Utah is an accredited university with a very reputable academic and research program. Emissions modeled in the AERMOD analysis used an escape fraction developed from the University study. It is important to note that emissions estimates for the 1994 and 2005 demonstration analyses did not use an escape fraction; the SIP demonstration analyses assumed all particulates generated in the mine escape the pit. This is a highly conservative assumption as a large fraction of gaseous and particulate pollutants are observed to remain within the pit during severe inversions such as those modeled in the 1994 and 2005 SIPs.

Also important to note is that the Copperton monitor has not shown any discernable changes in monitored PM₁₀ concentrations associated with the

previous mining phases mentioned above. This demonstrates that particulates settle in the BCM and that only a small portion of the particulates generated in the pit escape the mine.

The study later became part of a Master's thesis. Before a master's thesis is published at the University of Utah, the document is reviewed by a committee of at least three PhD level individuals with documented expertise in the area of study. In addition, the thesis is publicly defended by the author in a University setting. Copies of the Bhaskar study and the Tandon thesis are available at KUC for review.

Comment AO.4

Fugitive sources (haul roads) may cause a majority of the emissions at the mine. What is KUC doing to control fugitive dust and how is this reported to the UDAQ? How were the emissions from haul roads calculated for the NOI?

Response AO.4

A Fugitive Dust Control Plan (FDCP) detailing the dust control measures to be implemented at the BCM has been submitted to the UDAQ. As is currently done, each year KUC will report dust control measures implemented at the BCM during the previous year with details such as volume of water applied, commercial dust suppressant activity, etc.

Specifically, the FDCP requires that active ore and waste haulage roads within the Pit Influence Boundary will be water sprayed and/or treated with commercial dust suppressant as conditions warrant. Crushed road base material must be applied as necessary to active ore and waste haulage roads within the Pit Influence Boundary to enhance the effectiveness of fugitive dust control measures. Commercial dust suppressant must be applied to active ore and waste haulage roads outside of the Pit Influence Boundary no less than twice per year. Additionally, opacity surveys will be conducted monthly in areas where waste rock is being placed.

With the proposed modification, the average unpaved haul road distance for waste rock and ore will range from 4.5 miles round-trip to 8.3 miles round-trip over time as various areas are mined. The haul roads on which the haul trucks travel will be sprayed with water or commercial dust suppressants to control fugitive dust emissions throughout the year. Emissions of PM₁₀ and PM_{2.5} were estimated using methodology from EPA's *AP-42, Fifth Edition*, Section 13.2.2 (EPA, 2006). For the portion of haul roads located within the Pit Influence Boundary, emissions are calculated with the pit escape fraction. The

pit escape fraction represents the portion of the particulates not settling in the pit.

Based on EPA's emission calculation methodology, *AP-42, Fifth Edition*, Section 13.2.2, control efficiency on the haul roads with frequent watering per approaches 95 percent. However, emissions submitted with the NOI and used for permitting are based on UDAQ's default control factors, which are conservative. Per UDAQ policy, for haul roads within the Pit Influence Boundary, a default² control efficiency of 75 percent is used for watering and road base application. For haul roads outside the Pit Influence Boundary, a default control efficiency of 85 percent is used for application of commercial dust suppressants. The conservancy in estimating (or over-estimating) emissions may explain, in part, the relatively higher impacts shown by the air quality dispersion models compared to the actual ambient monitoring data.

The daily vehicle miles traveled (VMT) used to calculate the PM₁₀ emissions as an input for the AERMOD dispersion modeling analysis were based on the year 2016 material haulage of 260 million tons per year (tpy). Year 2016 is a projected peak year for emissions. The emission inventory calculated 9,425,000 annual VMT that would be required by the haul trucks to move the maximum proposed 260 million tpy of ore and waste material. This translates to 25,822 VMT per day if the annual VMT were evenly distributed throughout the year. However, the AERMOD modeling analysis assumed a conservative 20 percent daily variability factor that was applied to the average daily emissions to account for variability of BCM operations. Therefore, PM₁₀ emissions based on 30,986 VMT per day were modeled in AERMOD to demonstrate compliance with the 24-hr PM₁₀ National Ambient Air Quality Standard (NAAQS). KUC is proposing no change to the existing cap that limits the vehicle miles traveled by haul trucks to 30,000 VMT/day. Therefore haul road emissions will be effectively capped below modeled levels on a daily basis.

It was also assumed for a conservative maximum emissions estimate, that all material was hauled in 240-ton trucks to the farthest destination. In reality, the average truck fleet size is larger than 240-tons and a percentage of material would be on shorter haulage routes. Larger haul trucks on shorter hauls result in lower overall emissions.

² UDAQ's policy does allow the use of other factors; however, the more conservative defaults were utilized in this case.

Comment AO.5

How many acres of land will be disturbed by the mine expansion? Were these areas included in the emissions calculations done as part of the NOI? How was the escape fraction or pit retention of particulates used in the calculations?

Response AO.5

As a result of increased annual material moved to 260,000,000 tons of ore and waste rock it is estimated, according to the proposed mine plan, that approximately 565 total acres of land will be subject to active disturbance per year. Of that total, 310 acres (55 percent) are within the Pit Influence Boundary. Emissions of PM₁₀ were derived from the total PM emission factors estimated using methodology from the EPA's *AP-42, Fifth Edition*, Table 11.9-4 (EPA, 1998). PM₁₀ is estimated to be 47 percent of PM and PM_{2.5} is estimated to be 15 percent of PM₁₀. Since the emission source is partially located within the Pit Influence Boundary, that portion of emissions is calculated with the pit escape fraction.

Comment AO.6

Is the Best Available Control Technology (BACT) assessment in the NOI complete?

Response AO.6

The BACT analysis has been divided into two sections. The first section includes BACT analysis for new emission sources (e.g., second in-pit crusher).

With the proposed increase in material movement, the existing emission sources will see an increase in material handled. The control measures for the existing sources have been through a historical review by UDAQ and considered BACT. Therefore the second section of the BACT in the NOI includes a discussion on control technologies that have already been identified as BACT by UDAQ. The BACT assessment in the NOI has been determined to be technically complete by UDAQ.

Comment AO.7

How were gaseous pollutants handled in the model? Was there a pit retention factor applied to NO_x or other gaseous pollutants?

Response AO.7

In the NOI, it was assumed for emissions estimates and modeling that the escape fraction for all gaseous pollutants was 100 percent (i.e., no pit settling). This is a highly conservative approach as gaseous pollutants are believed to

be retained in the pit during inversion conditions when formation of secondary particulates is most critical.

Comment AO.8

Was a pit escape fraction applied to all emission sources at the BCM?

Response AO.8

No, a pit escape fraction was not applied to all sources at the BCM. Section 3 of the NOI summarizes emissions at the BCM after the proposed increase in the annual movement of ore and waste rock material.

For fugitive and stationary emission sources of particulates located within the Pit Influence Boundary, PM₁₀ emissions are calculated taking into account a pit escape fraction of 20 percent. For PM_{2.5}, the escape fraction was determined to be 21 percent. These factors are based on *Airflow Patterns and Pit-Retention of Fugitive Dust for the Bingham Canyon Mine*, which predicts the escape fraction for different conditions at the BCM (Bhaskar and Tandon, 1996). Table 3 provides a summary of emission sources at the BCM and whether the source is located within the Pit Influence Boundary, outside the Pit Influence Boundary or both.

The analysis submitted with the NOI application is consistent with 1999 letter sent by Richard R. Long, EPA Director, Air and Radiation Program to Ursula Trueman UDAQ Executive Secretary which states that, "We are aware of the argument expressed by your staff that most PM₁₀ emissions never leave the Bingham Canyon Mine pit. While we believe this may be true for some or most of the ore hauling, which occurs entirely within the pit, we do not believe this is true for the projected emission increase in the permit action. The State's engineering review explains, on page 5, that most of the allowed increase in truck hauling will be for waste rock, not ore, which is hauled out of the pit to waste piles up to 3.5 miles away. We would not expect fugitive PM₁₀ emissions from that hauling to remain mostly in the pit. "

As discussed in the NOI, pit settling (via emissions estimations with the application of a pit escape fraction) is only accounted for the portion of the haul roads within the Pit Influence Boundary. Pit settling is not accounted for emission sources outside the Pit Influence Boundary such as waste rock placement areas and portions of haul roads.

TABLE 3
Particulate Emission Sources at BCM

Emission Source	Source Located within Pit Influence Boundary	Source Located outside Pit Influence Boundary	Notes
Existing In-pit Crusher	Yes		
New In-pit Crusher	Yes		
Transfer Point C6/C7		Yes	
Transfer Point C7/C8		Yes	
Lime Silo (#1)		Yes	
Lime Silo (#2)		Yes	
Sample Preparation Building	Yes		
Drilling Operations	Yes		
Blasting Operations	Yes		
Haul truck Loading	Yes		
Truck Dumping to Primary In-pit Crusher	Yes		
Truck Dumping to Secondary In-pit Crusher	Yes		
Truck Dumping at Stockpile	Yes		
Existing In-pit Enclosed Transfer Points	Yes		
Existing In-pit Enclosed Additional Transfer Points (from crusher relocation)	Yes		

TABLE 3
Particulate Emission Sources at BCM

Emission Source	Source Located within Pit Influence Boundary	Source Located outside Pit Influence Boundary	Notes
New In-pit Enclosed Transfer Points	Yes		
Conveyor Transfer to Stacker		Yes	
Drop to Coarse Ore Storage Pile		Yes	
Coarse Ore to Reclaim Tunnel Vent		Yes	
Truck Dumping of Waste Rock		Yes	
Ore Stockpile	Yes		
Disturbed Areas	Yes	Yes	55% of the disturbed areas are expected to be located within the pit influence boundary and 45% of the disturbed areas outside the pit influence boundary.
Haul roads	Yes	Yes	Haul roads to the in-pit crusher are located within the pit influence boundary and a portion of haul roads to the waste rock placement areas will be outside the pit influence boundary.

TABLE 3
Particulate Emission Sources at BCM

Emission Source	Source Located within Pit Influence Boundary	Source Located outside Pit Influence Boundary	Notes
Road base crushing and screening plant	Yes		
Track Dozers	Yes	Yes	Track dozers perform activities inside the pit influence boundary and outside the pit influence boundary.
Rubber-tire Dozers	Yes		
Graders	Yes	Yes	Graders perform activities inside the pit influence boundary and outside the pit influence boundary.
Front end loaders	Yes	Yes	Front end loaders perform activities inside the pit influence boundary and outside the pit influence boundary.

Category B: Comments related to the State Implementation Plan(s)

Comment SIP.1

How will the mine expansion impact the SIP? Have the impacts been documented? Should KUC wait until the SIP has received EPA approval before submitting their application for expansion? Why are these two activities being pursued in parallel?

Response SIP.1

The BCM is currently limited by permit to an annual material moved limitation of 197,000,000 tons per year (tpy) for ore and waste rock, and KUC is requesting authorization to increase this amount to 260,000,000 tpy. A material moved limitation is also included in the federal 1994 SIP and state 2005 SIP for PM₁₀. The Technical Support Document submitted in August 2010 and subsequently revised in December 2010 and January 2011 assessed the implications of the proposed increase on the attainment and maintenance demonstrations that were relied upon in supporting the 1994 and 2005 PM₁₀ SIP actions. The Chemical Mass Balance (CMB) receptor model, in conjunction with emissions control and offset requirements, was used in support of the federal 1994 SIP attainment. The Urban Air shed Model with aerosols (UAM-AERO) was used in support of the state 2005 maintenance demonstration.

The three technical demonstrations (AERMOD modeling, CALPUFF and UAM modeling, 1994 SIP demonstration) show that the proposed increase in the material-moved limitation will not adversely affect attainment and maintenance of the PM₁₀ NAAQS.

KUC submitted a request to modify the current material movement limitation in both the state 2005 PM₁₀ SIP and the Bingham Canyon Mine Approval Order (AO). To ensure the public has sight of the entire proposal, both requests were submitted to the UDAQ for a parallel, but staggered review.

While the SIP rulemaking and the Mine AO require different technical demonstrations, the SIP rulemaking and the Mine AO are being pursued in parallel so that the regulators and the public can fully understand the scope of the technical demonstrations (air quality models) that Kennecott has produced. Additionally, Kennecott has made a third technical demonstration related to ambient air quality in the immediate vicinity of the mine.

The 2005 SIP rulemaking does not need to wait for EPA approval because it is a matter of Utah state law. The rulemaking pertains only to the state 2005 PM₁₀ SIP.

Comment SIP.2

What is KUC doing to assess the ambient air impacts from the proposed mine expansion? Will the mine expansion result in a violation of air quality standards?

Response to SIP.2

The proposed modification meets all regulatory requirements under the Utah Administrative Code. KUC has demonstrated compliance with the NAAQS using AERMOD, the EPA approved model for evaluating near field impacts, as well as making technical demonstrations consistent with the state 2005 PM₁₀ Maintenance Plan SIP and the federal 1994 PM₁₀ SIP. Each of these demonstrations shows that the proposed modification will not result in a violation of the PM₁₀ NAAQS.

Furthermore, KUC has operated a PM₁₀ monitor in Copperton since prior to 1994. All activities proposed through this mine expansion are similar in scope but on an incrementally larger scale than previous mining phases. It is reasonable to assume the ambient impacts observed from the proposed expansion will be consistent with those associated with previous mining phases. Mining activities such as the 1999 material movement increase, Lower Bingham Canyon waste rock placement and Giant Leap pushback, over time have shown no discernable changes in monitored concentrations and we would expect the same from this expansion. Nevertheless, KUC is proposing an additional ambient air quality monitor in lower the Butterfield Canyon area (near peak modeled impacts) as a permit condition to verify continued compliance with the NAAQS, and to provide the public with additional ambient monitoring data.

Comment SIP.3

Was an attempt made to rerun the UAM model with adjusted numbers?

Response SIP.3

Because the previous UAM modeling files are unavailable, the use of the CALPUFF modeling system combined with the previous UAM modeling was used to evaluate the impact of the increase in material moved at the BCM. This approach was required by UDAQ. CALPUFF is a multi-layer, multi-species, non-steady-state Gaussian puff dispersion model that can simulate the effects of time- and space-varying meteorological conditions on pollutant transport, transformation, and removal. CALPUFF can use the 3-dimensional meteorological fields developed by the CALMET model or simple, single station winds. CALPUFF is well suited for this application as it handles very low wind speeds during inversion events and also has the ability to handle complex terrain. The results of the CALPUFF model were added to the predicted UAM concentrations to account for the total impacts after the increase in production.

Yours truly,



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Chris Kaiser, HSEQ Principal Advisor
Environmental Permitting and Regulation

March 21, 2011

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

Mr. Nando Meli
PO Box 144820
Salt Lake City, UT 84114-0482

MAR 21 2011

DIVISION OF AIR QUALITY

Dear Mr. Meli:

Approval Order DAQE-AN0105710023-08, Response to EPA Comments

Below are Kennecott Utah Copper LLC (KUC) responses to comments from US EPA regarding Utah's proposed revision to the Utah State Implementation Plan (SIP) Emission Limits and Operating Practices, Section IX.H.2.h and to Rule R307-110-17, Section IX and Part H, including the Technical Support document (TSD) prepared by KUC. This proposed revision is in support of the requested increase in movement of materials at the Bingham Canyon Mine (BCM) to 260 million tons per year from the current 197 million tons per year. Responses to comments on the "Intent-to-Approve" (ITA) (permit DAQE-IN0105710028-11, dated February 2, 2011) and the associated "New Source Plan Review" are also included below.

Introduction

On August 17, 2010, KUC submitted a Notice of Intent (NOI) application to increase the annual material-moved limit of ore and waste rock material at the BCM from 197 million tons per year to 260 million tons per year. The NOI application included:

- Emissions Summary - Potential to emit (peak year) emissions were estimated using the most current emissions methodology for all emission sources at the BCM. For fugitive and stationary emission sources of particulates located within the pit influence boundary, PM₁₀ emissions are calculated taking into account a representative but conservative pit escape fraction of 20 percent. For PM_{2.5}, the escape fraction was determined to be 21 percent. These factors are based on *Airflow Patterns and Pit-Retention of Fugitive Dust for the Bingham Canyon Mine*, which predicts the escape fraction for different conditions at the BCM (Bhaskar and Tandon, 1996). Pit escape fractions were not used to estimate emissions from mobile sources.
- Control Technology Analysis - A Best Available Control Technology analysis for haul roads and ore and waste rock transfer and handling sources was included in the application.

- AERMOD Analysis - An AERMOD analysis was performed to demonstrate that the proposed modification will not result in a violation of the 24-hr PM₁₀ NAAQS in the near-field.

Emissions were estimated in the NOI using conservative assumptions. The AO for the BCM limits the maximum total mileage for ore and waste rock trucks to 30,000 miles per day. The daily vehicle miles traveled (VMT) used to calculate the PM₁₀ emissions as an input for the AERMOD dispersion modeling analysis were based on the peak year for haulage, 2016, with material haulage of 260 million tons per year (tpy). Using the emission inventory and distributing the VMTs throughout the year results in an estimate of 25,822 VMT per day. The AERMOD modeling analysis added an additional 20 percent daily variability factor that was applied to the average daily emissions. Therefore, PM₁₀ emissions based on 30,986 VMT per day were modeled in AERMOD to demonstrate compliance with the 24-hr PM₁₀ NAAQS as well as the limitation in the AO. In summary, the conservative assumptions included:

- 1) All material moved using the smallest haul trucks (results in more miles travelled, in practice the largest trucks available on the market will be used)
- 2) AERMOD modeling was run for the peak year, not an average of all years
- 3) A 20% increase was added to the already inflated vehicle miles to account for any potential variability that may occur

Based on the above assumptions, the currently 24-hr limit of 30,000 miles per day is protective of the daily PM₁₀ NAAQS.

In conjunction with the NOI, KUC submitted a TSD assessing the implications of the proposed increase on the attainment and maintenance demonstrations that were relied upon in supporting the 1994 and 2005 PM₁₀ SIP actions. Technical demonstrations, consistent with the methodologies employed in the 1994 and 2005 PM₁₀ SIPs, were completed in order to provide an accurate assessment of the potential effect of the proposed increase on the respective attainment and maintenance demonstrations. These technical demonstrations showed that the attainment demonstrations will be maintained. The respective technical demonstrations may be summarized as follows:

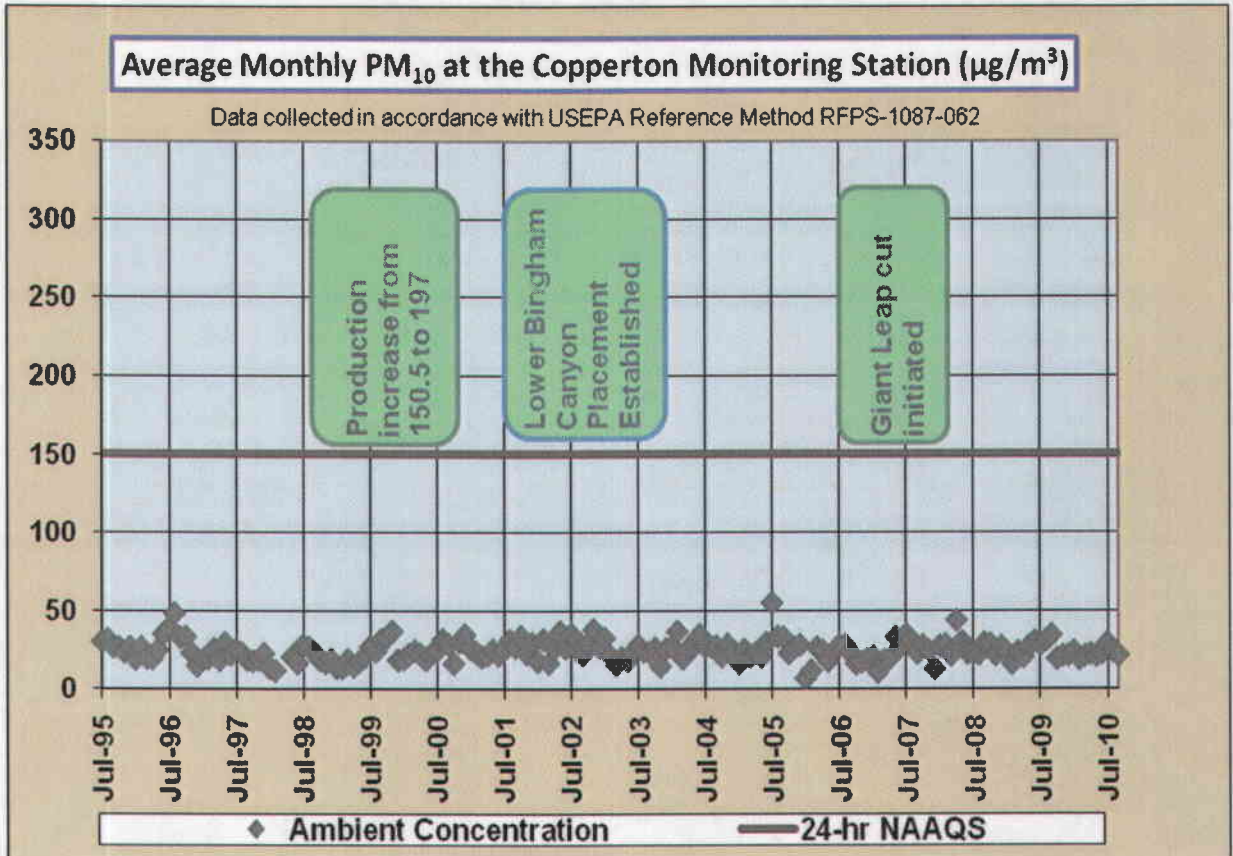
- 1994 demonstration - To offset the emissions increase associated with the BCM expansion, 5,485 tons of banked stack level SO₂ emission

credits will be relinquished in addition to the 1,105 tons of banked PM₁₀ and SO₂ credits already relinquished in 1999. The analysis shows that the increase in the material-moved limitation is consistent with and satisfies the 1994 attainment and maintenance demonstration.

- 2005 demonstration - The analysis shows that increases to the UAM-AERO-modeled NO_x and primary PM₁₀ will not cause any grid cell to exceed the total PM₁₀ NAAQS of 150 µg/m³.

In addition, two ambient air quality monitors will be used to verify continued compliance. Although each of the analyses individually demonstrates that the proposed modification will not result in a violation of the PM₁₀ NAAQS and are consistent with the approved SIPs, KUC is proposing a new PM₁₀ ambient monitor in the Lower Butterfield Canyon area near modeled peak impacts.

KUC has operated a PM₁₀ monitor in Copperton since prior to 1994 at a location near one of the top modeled impact locations. All activities proposed through this mine expansion are similar in scope but on an incrementally larger scale than previous mining phases. It is reasonable to assume the ambient impacts observed from the proposed expansion will be consistent with those associated with previous mining phases. Mining activities such as the 1999 material movement increase, Lower Bingham Canyon waste rock placement and Giant Leap pushback, over time have shown no discernable changes in monitored concentrations and we would expect the same from this expansion (See Figure 1).



General Comment: Lack of an analysis demonstrating impacts on the National Ambient Air Quality Standards (NAAQS)

Comment G.1: The Technical Support Document (TSD) and other documents for the proposed Kennecott SIP revision contain inadequate analyses for PM₁₀ and do not include an analysis of whether emissions associated with the Bingham Canyon Mine (BCM) expansion would interfere with other relevant NAAQS.

Response to comment G.1:

The TSD submitted to UDAQ is intended to demonstrate continued compliance with the PM₁₀ NAAQS in accordance with the respective technical analyses that formed the bases for the attainment and maintenance demonstrations contained in the 1994 PM₁₀ SIP and the 2005 PM₁₀ Maintenance plan.¹ Because the SIP rulemaking is limited to modifying the 2005 PM₁₀ SIP, only PM₁₀ and its precursors (SO₂ and NO_x) were included in the analysis. Additionally, to support the 1994 SIP modification, KUC is proposing to offset its PM₁₀ and NO_x increases from all emission sources on a voluntary basis in a manner consistent with the offsetting provisions of the 1994 SIP and the Utah Administrative Code.

The project is expected to result in a decrease in SO₂ emissions due to KUC's transition to ultra-low sulfur diesel fuel. The analysis submitted to support the modification of the 1994 SIP was conservative as it did not account for any reductions in SO₂ emissions. To make the analysis further conservative, emission estimates for this analysis did not account for settling of the particulate in the pit. Haul road emissions, the biggest contributor to overall BCM particulate emissions, were estimated using the smallest haul truck travelling the farthest possible haul distance with the full tonnage of material.

The same level of conservatism was used in the analysis to support the 2005 PM₁₀ Maintenance plan. The analysis assumed the maximum impact from the increase in NO_x and PM₁₀ emissions without accounting for the decrease in impacts from the decreased SO₂ emissions. In addition to the conservative assumptions listed above, the analysis for the 2005 Maintenance plan also assumed a 100% conversion of nitrogen oxides (NO_x) to nitrates (a secondary particulate component).

¹ Kennecott understands that EPA has raised numerous concerns and questions that relate to the 2005 PM₁₀ Maintenance plan that was submitted to EPA in September 2005. See 74 Fed. Reg. 62717 (Dec. 1, 2009) (Approval and Promulgation of Air Quality Implementation Plans; Utah; Redesignation Request and Maintenance Plan for Salt Lake County; Utah County; Ogden City PM₁₀ Nonattainment Area). These comments are not intended to address those issues and Kennecott recognizes that additional modeling tools and analyses will likely be utilized in addressing ambient air quality demonstrations for particulate matter in the future. The analyses that Kennecott has provided in support of its request to move additional material at BCM are for the sole purpose of showing that the demonstrations that formed the bases for approving the 1994 SIP and 2005 Maintenance plan, respectively, are not adversely affected by the proposed increase in material moved; that is, attainment is demonstrated at the proposed production level of 260 tpy, *given* the modeling techniques and analyses that were approved and formed the basis for the 1994 SIP and 2005 Maintenance plan, respectively.

Though not required by regulation or as part of the SIP demonstration, KUC voluntarily submitted an AERMOD analysis to UDAQ of the near-field ground level impacts from the BCM after the increase in ore and waste rock movement to 260 million tons per year. The results from the AERMOD modeling were below the NAAQS for PM₁₀.

The BCM is located in Salt Lake County. The air shed has been designated as nonattainment for PM_{2.5}. UDAQ is in the process developing a SIP for PM_{2.5}. The SIP will dictate source control strategies and account for the relative reduction in PM_{2.5} concentrations from the decrease in SO₂ emissions at the mine. KUC understands that additional controls, as dictated by the source control strategies, may be necessary under the SIP.

In addition to the BCM project, KUC has a variety of projects and initiatives that will contribute to the air shed's ability to attain other NAAQS. These include conversion of the Utah Power Plant units 1-3 from coal to combined cycle natural gas, installation of two natural gas combined heat and power units, idling reduction programs site-wide and demonstrated leadership in green buildings.

Comment G.2: Regarding other NAAQS, EPA notes that the Wasatch Front is non-attainment for PM_{2.5}. Ammonium nitrate comprises more than 50 percent of the measured PM_{2.5} on days that exceed the 24-hour PM_{2.5} NAAQS and increased NO_x emissions resulting from the BCM expansion will contribute to increased ambient concentrations of ammonium nitrate in the basin. This could result in more severe exceedences of the 24-hr PM_{2.5} NAAQS thereby preventing attainment.

Response to comment G.2:

Particulate emissions from the BCM operations settle in the pit and only a very small fraction escape the pit influence boundary into the atmosphere. During inversions, when there are no winds,² there have been observed cases of pit settling approaching 100 percent and retention of gaseous pollutants as well as primary particulates is believed to occur.

The air shed has been designated as nonattainment for PM_{2.5}. UDAQ is in the process developing a SIP for PM_{2.5}. At this time direct source contributions to ambient PM_{2.5} concentrations are not known. As the PM_{2.5} SIP is developed and an attainment strategy is developed, KUC understands that additional

² These are the meteorological conditions associated with elevated PM₁₀ concentrations.

controls as dictated by these strategies may be necessary under the SIP. KUC will meet the requirements of the applicable SIP as mandated in Section 110(l) of the CAA, but cannot commit to control strategies that have not yet been developed or shown to be effective.

Comment G.3: The Wasatch Front also has exceeded the current 8-hour average ozone NAAQS of 75 ppb during 2007-2009. Thus, increased NO_x emissions at the BCM could contribute to the severity of exceedences of the ozone NAAQS.

Response to comment G.3:

A SIP has not been developed for the 8-hour ozone standard so specific control strategies have not been developed. As stated in the response to comment G.2, KUC will meet the requirements of the applicable SIP. Changes to the BCM emissions profile will be included in the development of the ozone SIP and appropriate control strategies will be implemented when they are developed. In the meantime, KUC and the BCM expansion are in compliance with developed PM₁₀ control strategies and approved regulations.

Comment G.4: Any 110(l) analysis should also evaluate potential impacts on the nitrogen dioxide NAAQS.

Response to comment G.4:

The area is expected to be in attainment of the 1-hour NO₂ standard. At this time, there is no indication that additional control strategies are required to maintain the NAAQS. As previously stated, if future additional control strategies are required to maintain the 1-hour NO₂ standard, KUC will implement the applicable requirements.

Comment G.5: No analysis of the ambient air quality impact of an allowed increase in material movement and the associated emission increase at the BCM is presented in Utah's "New Source Plan Review (NSPR)."

Response to comment G.5:

As specified in R307-410-4, air quality dispersion modeling is required only in areas that are in attainment for criteria pollutants. Consistently, UDAQ modeling guidelines specifically provide that, "The UDAQ currently does not require sources to perform dispersion modeling for pollutants that are not in attainment of the NAAQS, if that source is located in an area that is nonattainment for that pollutant."

Nonetheless, KUC performed AERMOD modeling to demonstrate the material movement increase would not cause an exceedences of the PM₁₀ NAAQS. This modeling is included in Appendix C of the NOI. Results from this analysis are summarized below.

Scenario	Modeled Concentration (µg/m ³)	Copperton, Utah, Background Concentration ^a	Total Concentration	Above 150 µg/m ³ NAAQS?
260,000,000 tpy material movement	85.1	59.1	144.2	No

NOTES:

^aBackground concentration from the Copperton, Utah monitoring station

This analysis includes the following conservative assumptions:

- 1) The modeled emissions represent the total potential PM₁₀ emissions from the BCM, including those from current operations.
- 2) A background PM₁₀ concentration from the data measured at the Copperton, Utah monitor site is added to the modeled value.
- 3) All material was modeled as moved by using the smallest haul trucks (results in more miles travelled, in practice the largest trucks available on the market will be used)
- 4) AERMOD modeling was run for the peak year, not an average of all years
- 5) A 20% increase was added to the already inflated vehicle miles to account for any potential variability that may occur

It is likely that the measured data include emissions from current operations under some meteorological conditions. Therefore, addition of the modeled concentration and the background measured concentrations is likely double counting contributions from current operations. In addition, a new monitor will be installed in the Lower Butterfield Canyon area, near the peak modeled impacts, to further demonstrate compliance.

Comment 1. Inadequate Air Quality Modeling

Comment 1.1: The current modeling is inadequate because of:

- 1) **Modeling of banked emissions as though they will be emitted from Kennecott's 1,200 foot stack; and**

- 2) **The relative response factors (RRFs) based on total PM₁₀ mass without evaluating the RRFs for components of PM₁₀ as required by modeling guidance.**

Response to comment 1.1:

KUC used the current 2005 UAM modeling and the modeling of the banked emissions as it was completed for the 2005 Maintenance SIP. UDAQ is preparing a new modeling analysis for PM_{2.5} which will include any changes at the BCM.

The modeling presented in the TSD is consistent with the 2005 Maintenance SIP that has been adopted into State law. Importantly, as noted above, this modeling analysis is not an attempt to resolve more fundamental issues that EPA has raised regarding the type of modeling demonstration that will be necessary for EPA to approve a *future* plan; it is simply an attempt to show that, the maintenance demonstration relied upon by the AQB when it approved the 2005 Maintenance Plan remains valid notwithstanding the proposed increase in material moved. Conservative assumptions were made so actual impacts are likely to be lower than the modeled values. The RRFs were kept consistent with the state-approved UDAQ modeling.

Comment 1.2: EPA's assessment is that there is insufficient information for both the CALPUFF and AERMOD simulations described in the TSD that supplemented the UAM-AERO model, and the combination of CALPUFF simulations with UAM-AERO is insufficient. EPA recommends that the impacts of the BCM expansion be evaluated using the new CMAQ model simulations currently being developed by the State for the PM_{2.5} attainment plan. Additional AERMOD simulations with updated emissions data are also recommended.

Response to comment 1.2:

The PM₁₀ Maintenance plan was approved by the Utah Air Quality Board in 2005 as a matter of State law. Therefore, UDAQ considers the limitations established by the SIP to be enforceable notwithstanding that EPA has yet to take final action on the 2005 Maintenance plan. Accordingly, the material moved limitation must be changed in accordance with state law and in a manner that is consistent with the Board's approval in 2005.

It is KUC's understanding that any changes to the BCM operations will be included in the CMAQ model simulations currently being developed by UDAQ.

Comment 2. Inadequate Analysis of Emission Offsets

Comment 2.1: The use of banked SO₂ credits as offsets may not be valid. EPA has asked the State of Utah to provide evidence to validate the credits and to respond to identified concerns with the 1994 PM₁₀ SIP's offset provisions.

Response to comment 2.1:

Offsets are being provided for the sole purpose of demonstrating that the 1994 attainment demonstration is not adversely affected by the increase in material moved. The offsets being relinquished are entirely consistent with the 1994 PM₁₀ SIP offset provisions - approved by EPA - which allow PM₁₀ offsetting by PM₁₀ precursors. KUC has submitted written confirmation to UDAQ that the emission reduction credits being relinquished meet the requirements of the offsetting program and are valid offsets.

The UDAQ maintains a registry of all available emission reduction credits in salt Lake County and other counties in the state (http://www.airquality.utah.gov/Permits/Emission_Offsets.htm). The registry shows the following as KUC's banked emissions.

COMPANY	TYPE	TONS/YR
KENNECOTT	ALDH	0.4
KENNECOTT	CO	14.1
KENNECOTT	HF	10.2
KENNECOTT	NOX	104.91
KENNECOTT	SO2	16801.06
KENNECOTT	TSP	4.4
KENNECOTT	VOC	9.5
KENNECOTT	PM10	226.19

The SO₂ credits were generated in 1996-1998 during the Smelter modernization project. The Smelter modernization project was completed in 1996 and reduced SO₂ emissions by 99.9%. The KUC Smelter continues to be one of the most advanced and cleanest smelters in the world.

Comment 2.2: Assuming the banked credits are valid, EPA is still concerned because the PM₁₀ and NO_x emissions at the BCM are not being emitted from a 1,200 foot stack but rather at ground level and at a significant distance from the smelter stack.

Response to comment 2.2:

The 1994 PM₁₀ SIP attainment demonstration was based on receptor modeling which does not specify source emission heights but does include the relative impacts from sources as measured by the ambient air monitors. Therefore the offsetting program established in the 1994 PM₁₀ SIP does not distinguish between release heights. The receptor modeling does account for impacts from the 1,200 foot stack so the impacts from these emissions were included in the attainment demonstration and are creditable.

The AERMOD model accounts for source release parameters. The BCM was modeled with the increased material movement and no discounts for offsets with the AERMOD model. The highest PM₁₀ concentration predicted was below the PM₁₀ NAAQS. Relinquishing the credits will only further protect the NAAQS beyond what is predicted in AERMOD.

Comment 2.3: Additional modeling [proposed inter-precursor trade of banked SO₂ emissions from the smelter for increases in NO_x at the BCM] is required to show non-interference under the CAA section 110(l).

Response to comment 2.3:

The 1994 SIP, as approved by EPA, allows the use of PM₁₀ precursors to offset direct PM₁₀ emissions. The 1994 federally-approved SIP and 2005 State maintenance plan requirements have been met.

Comment 2.4: The NSRP does not:

- 1) Discuss the need to obtain emission offsets;
- 2) Indicate that the required offsets have been obtained;
- 3) Specify where the offsets were obtained; or
- 4) Verify that the offsets are enforceable.

Without such analysis, EPA is unable to conclude that the offsets satisfy the requirement of R307-403.

Response to comment 2.4:

On February 7, 2011, KUC submitted a letter to UDAQ as notification of KUC's intention to relinquish credits. The NSRP did not include specific

language about the offsets because these offsets are not required under the requirements of UAC R307-403, and they are being voluntarily relinquished by KUC.

In the letter, KUC stated the following: "...To offset the emissions increase associated with the mine expansion, 5,485 tons of banked stack level SO₂ emission credits will be relinquished, upon final execution of the Bingham Canyon Mine Approval Order by the Division of Air Quality."

As stated in the TSD, the total emissions increase of PM₁₀ and NO_x, using the 1994 emission factors for consistency with the analysis, is 5,492 tons with the increase in material moved at the BCM. This does not include:

- 1) Reductions resulting from the use of lower sulfur fuels, and
- 2) The net reduction in SO_x emissions as further assurance the PM₁₀ SIP will be maintained.

Using the methodology set forth in the 1994 PM₁₀ SIP, if emissions credits were required at a 1.2 to 1 ratio, KUC would relinquish 6,590 tons of offsets. KUC previously relinquished 1,105 tons in 1999, when an increase in material moved was approved from 150,500,000 tpy to 197,000,000 tpy. KUC will relinquish an additional 5,485 tons from SO₂ credits banked from the emission reductions at the Smelter in keeping with the 1994 SIP. KUC currently has approximately 12,000 tons of stack-level SO₂ credits banked with UDAQ. These credits were generated as a result of reductions in SO₂ emissions when the Smelter modernization project was voluntarily implemented in 1996.

Comment 3. Insufficient Information for Emission Factors

Comment 3.1: EPA has serious concerns regarding the study - *Airflow Patterns and Pit-retention of Fugitive Dust for the Bingham Canyon Mine* (Bhaskar and Tandon, 1996). The concerns are as follows:

- 1) Most of the model sensitivity simulations were only performed at the pit bottom which could underestimate the amount of particulate released from sources that are located at other locations in the pit;
- 2) The TSD lacks the source location information to verify that the pit escape fraction has been appropriately applied;
- 3) The study does not compare the model-simulated concentrations to monitoring data; and
- 4) The TSD lacks information to verify that the pit escape fraction has not been applied in addition to model calculations that account for

the pit topography, essentially overestimating the effect of the pit and underestimating the impact to air quality.

Response to comment 3.1:

To reasonably estimate emissions and perform the AERMOD modeling for the 24-hour PM₁₀ impact, one escape fraction for all particulate sources in the pit was used. This approach required the selection of a single value for the escape fraction that is representative but also conservative.

It is impossible for any one technical study to examine all possible scenarios; therefore, numerous conservative assumptions were made in deriving a single escape fraction of 20 percent from the data that is available in Bhaskar and Tandon (1996). Because conservative assumptions were made at every step in the process, the value of 20 percent is conservative for all cases and all times. The details of the conservative assumptions are included in Appendix D-2 of the NOI. They are summarized below:

- For all but two cases in Bhaskar and Tandon (1996), the maximum escape fraction from the sensitivity analyses is 12.6 percent or less. Consequently, a conservative value of 12.6 percent was used as the starting escape fraction.
- A 5.5 percent upward adjustment was made based on the difference between 100 percent trap and 100 percent ricochet from the two “worst case” scenarios. This is conservative because the difference for a less severe case would likely be less and because the actual scenario lies between 100 percent trap and 100 percent ricochet. Furthermore, based on theory, the actual scenario should be closer to 100 percent trap because generally small particles do not possess sufficient inertia to bounce off a surface (see, for example, section 19.4.2 of Atmospheric Chemistry and Physics by Seinfeld and Pandis, 2006). With this adjustment, the conservative 12.6 percent starting value was increased to 18.0 percent.
- To be even more conservative, a final escape fraction of 20 percent was chosen.

Appendix B of the NOI application provides detailed emissions calculations for all emission sources at the BCM, including the pit escape fraction for sources located within the pit influence boundary. The AERMOD analysis did not overestimate the effect of the pit as it did not use the built-in pit algorithm to determine impacts. The pit escape was used for particulates

within the influence of the pit boundary. Gases were assumed to escape with no pit retention and likewise no pit retention factor was used for particulates outside of the pit influence boundary.

Yours truly,



Chris Kaiser

Kennecott Utah Copper
4700 Daybreak Parkway
South Jordan, Utah 84095
USA

Chris Kaiser, HSEQ Principal Advisor
Environmental Permitting and Regulation

March 21, 2011

UTAH DEPARTMENT OF
ENVIRONMENTAL QUALITY

MAR 21 2011

DIVISION OF AIR QUALITY

Mr. Nando Meli
PO Box 144820
Salt Lake City, UT 84114-0482

Dear Mr. Meli:

Subject: Approval Order DAQE-AN0105710023-08

The Utah Department of Environmental Quality (DEQ) is receiving public comment on an Intent to Approve Modified Approval Order DAQE-AN0105710023-08 and on a proposed rule amendment to the Utah State Implementation Plan (SIP) Section IX, Control Measures for Area and Point Sources, Part H, Emissions Limits. Kennecott Utah Copper LLC (KUC) submits this public comment on the Intent to Approve and the proposed SIP rule amendment.

The current technical demonstrations for the Intent to Approve and the SIP rule amendment both satisfy the relevant legal requirements. However, several comments have been noted related to the use of a pit escape fraction and model results in a 1996 University of Utah study. Kennecott has taken the initiative to pursue a separate modeling effort to evaluate the escape fraction calculations published in the 1996 study "Airflow Patterns and Pit-Retention of Fugitive Dust for the Bingham Canyon Mine" by Ragula Bhaskar and Navin Tandon, Department of Mining Engineering, University of Utah. The attached documents describe the context for the modeling effort and present results of a computational fluid dynamics model simulation of the Bingham Canyon Mine.

Yours truly,



Chris Kaiser

Attachments

Technical Memorandum:

Kennecott Utah Copper LLC (KUC) submitted a Notice of Intent (NOI) application to secure an Approval Order (AO) to increase the annual material-moved limit of ore and waste rock material at the Bingham Canyon Mine (BCM). KUC is proposing to increase the BCM's material-moved limitation to 260,000,000 tpy during peak years from the currently permitted 197,000,000 tpy.

When particles, such as fugitive dust, are emitted within the pit-influence boundary, only a certain portion of what is originally emitted reaches the top of the pit and enters the general atmosphere (the so-called escape fraction). *Airflow Patterns and Pit-Retention of Fugitive Dust for the Bingham Canyon Mine* is a Computational Fluid Dynamic (CFD) study that predicts the escape fraction for different conditions at the BCM (Bhaskar and Tandon, 1996). The authors examined the influence that varying wind speed, wind direction, atmospheric stability, source location, source height, and particle size have on the calculated escape fraction.

To estimate emissions, the approach of applying one escape fraction to all emission sources located within the pit influence boundary was taken. This approach required the selection of a single value for the escape fraction that is representative, but also conservative. As discussed in the NOI, an escape fraction of 20 percent was selected for PM₁₀ based on the results from Bhaskar and Tandon (1996).

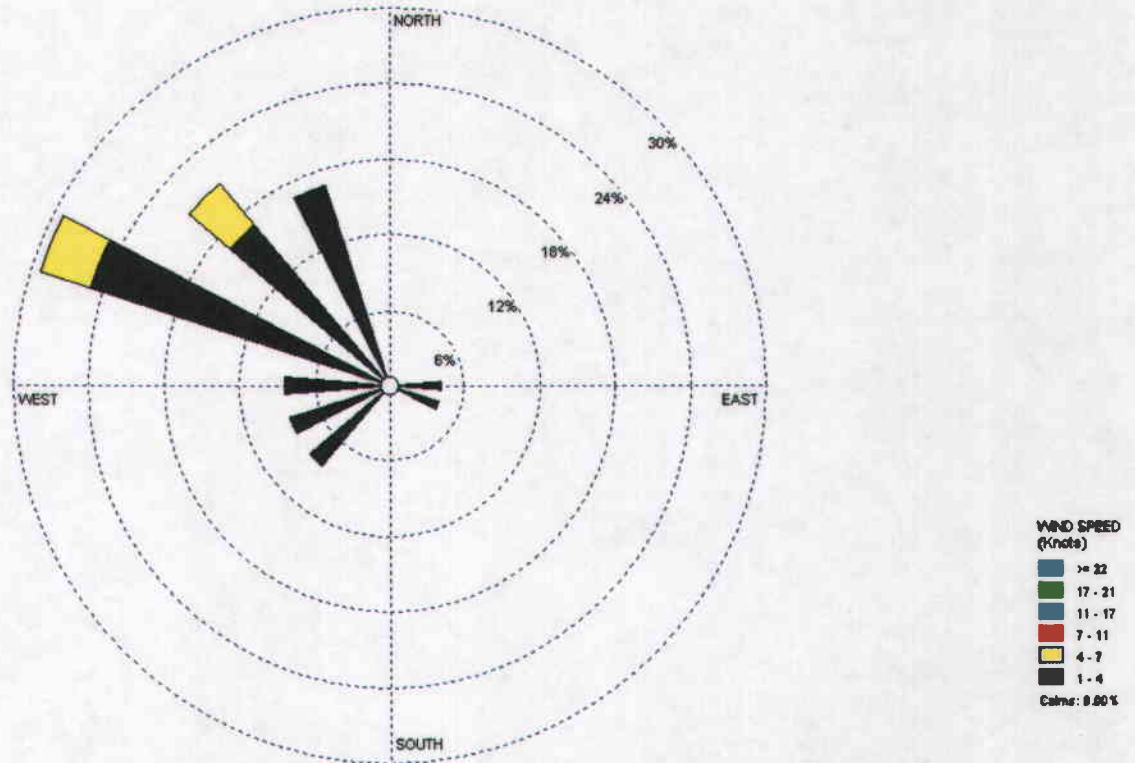
The NOI also included an air quality modeling demonstration using the American Meteorological Society/EPA Regulatory Model (AERMOD) model to support the increase in material moved. AERMOD is an EPA-approved model that was used to predict ambient concentrations of PM₁₀. The modeling results indicated that the maximum combined concentration of modeled and monitored total PM₁₀ impact from the emissions after the proposed modification when added to the background concentration would be 144.2 µg/m³, less than the 24-hr National Ambient Air Quality Standard (NAAQS) of 150 µg/m³. It is important to note that these concentrations represent a modeled 24-hour maximum impact, and are not representative of continuous concentrations.

The modeled impact assumes to an average wind speed of 3.8 miles per hour (mph) from the west-northwest direction. The meteorological data were obtained from the nearby Herriman station. The Herriman meteorological data were supplied by the Utah Division of Air Quality (UDAQ) and are considered representative of the BCM location. Data for years 2004 through 2006 were used for the AERMOD analysis.

AERMOD modeling demonstrated that the modeled concentration used for comparison to the 24-hr NAAQS occurred on December 21, 2006. The average wind speed for this day was 3.8 miles per hour (mph) and the primary wind direction was

from the west-northwest sector. The windrose for December 21, 2006 is shown in Figure 1 below.

Figure 1. Windrose for December 21, 2006



To further examine site specific pit retention for the BCM, KUC has done additional computational fluid dynamics (CFD) modeling. CFD is a mathematical analysis where pressure, velocity, and turbulence are calculated using equations for fluid flow and turbulence. Key aspects of this modeling are discussed below:

- The widely-used, commercially available ANSYS Fluent software was used. For this analysis, the standard k-epsilon turbulence model was used. The selection of the turbulence mode was consistent with that used in Bhaskar and Tandon (1996). Particulate dispersion was modeled using a time-dependent stochastic approach.
- The mine was modeled as an irregular shape roughly 2000 feet deep at its deepest point. For the simulations, the mine's topography was modeled in three dimensions based on the 2009 aerial survey.

- The simulations estimate the escape of particulate generated in the pit for a constant wind speed and wind direction: a steady-state value for the escape fraction is calculated.

Statistically significant quantities of PM₁₀ particulates were released from nine different locations in the mine as part of the modeling. The locations varied in both their horizontal and vertical placement. The particulates were released at a point seven feet above the ground at each of the nine locations. Particulates were released in the simulations at the bottom of the pit, at four middle-of-the-pit locations, and four off-the-edge-of-the-pit locations as shown in Attachment 1.

Results from the nine simulations estimated the pit escape fraction for PM₁₀ between 3 percent and 18 percent, depending on release location. These results are consistent, and in fact, lower than the escape fraction of 20% used in emission estimates for PM₁₀ for the BCM in the AERMOD modeling submitted in the NOI. The higher the escape fraction, the greater the emissions emitted to the atmosphere.

The pit escape fraction used in the emission estimates for AERMOD 20 percent was higher than the maximum CFD modeled results. In addition to this overestimation, the AERMOD analysis was based on very conservative assumptions as discussed below:

- AERMOD modeling was run for the peak year material movement of 260,000,000 tons per year, not an average material throughput between 2011 and 2028.
- It was assumed that all material was moved using the smallest 240-ton haul trucks which resulted in more miles travelled and higher emissions. In practice, the largest trucks available on the market will be used to haul ore and waste rock, thereby resulting in lower actual emissions.
- For the AEMROD analysis, a 20 percent increase was added to the already inflated daily emissions to account for any potential variability that may occur in BCM's day to day operations.

For the reasons stated above, the AERMOD analysis presented with the NOI is conservative. KUC has performed this limited amount of additional BCM specific CFD analysis. The results indicate that a 20 percent pit escape fraction for PM₁₀ is representative for the BCM, and in fact may overestimate the PM₁₀ emissions from the BCM.

Attachment 1
Bingham Canyon Mine
Pit Retention Study

21 March 2011

Prepared for: Rio Tinto/Kennecott Utah Copper (KUC)

Prepared by: Advanced Design and Simulation Group

Keith Kibbee, PE
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Portland, OR 97201
keith.kibbee@ch2m.com
503-872-4573



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	Date: 21 March 2011		
	File: KUC-T1b-r0		

Introduction

KUC requested CH2M HILL's assistance with Computational Fluid Dynamics (CFD) modeling to support the use of an escape fraction specific to the Bingham Canyon Mine (mine). Emissions calculations and AERMOD analyses performed for the mine have utilized pit retention factor calculations documented in the 1996 report "Airflow Patterns and Pit-Retention of Fugitive Dust for the Bingham Canyon Mine" by Ragula Bhaskar and Navin Tandon, Department of Mining Engineering, University of Utah (U of U). The objective of this current effort is to perform a check on the reasonableness of the U of U study and to further explore other variables contributing to retention effectiveness of the pit.

Technical Approach

The functional area of the mine is an irregular shape roughly 2000 feet deep at its deepest point. The site's terraced topography is modeled in three dimensions in this computer simulation. The model estimates pressure, velocity, and turbulence over the contours due to wind speed, wind direction, and atmospheric stability.

These physical phenomena and the resultant migration of particulate across the topography are characterized with airflow modeling based on computational fluid dynamics (CFD). CFD is a mathematical procedure whereby the fluid parameters of pressure, velocity, and turbulence are calculated by solving the governing partial differential equations for fluid flow and turbulence. The software that is used for this analysis is ANSYS Fluent. This software has been validated within numerous peer-reviewed journal publications for external flow simulations and buoyant plume studies. The turbulence model chosen for the analysis is the standard k-epsilon turbulence model because this was consistent with the approach used in the U of U study. Particulate dispersion is modeled using a time-dependent stochastic approach.

The simulations allow estimation of the escape of particulate generated in the pit for a variety of wind speeds and wind direction conditions at a steady state according to the following setup features:

- One-thousand particles (a statistically significant quantity) are released from each of nine locations within the mine.
- A series of particle release scenarios are simulated at each release point. Scenarios in the series give successively longer durations for particles to move with the wind. The fraction of particles escaped for each scenario is summed to determine a steady state condition of particle motion.
- The fraction of particles generated at each source escaping the model boundary determine pit retention for that source location.

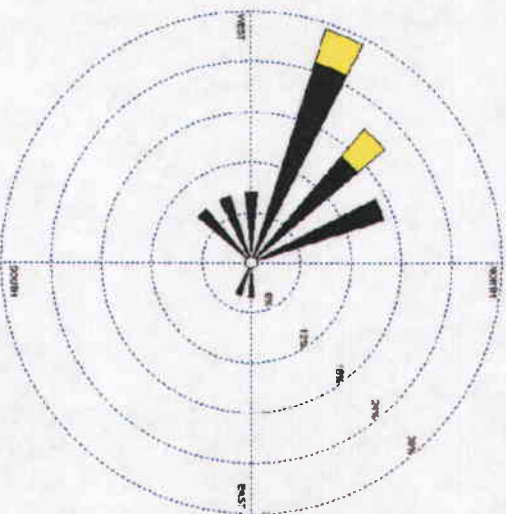
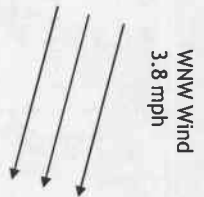
 CH2MHILL	Project #:414399	Bingham Canyon Mine Pit Retention Study	3
	Date: 21 March 2011 File: KUC-T1b-10		

Model Setup: Scenario parameters

The Notice of Intent (NOI) submitted by Kennecott Utah Copper LLC (KUC) for increasing the annual limit of material moved included an air quality modeling demonstration using the American Meteorological Society/EPA Regulatory Model (AERMOD) model to support the increase in material moved. AERMOD is an EPA-approved model that was used to predict ground level concentrations of PM_{10} . The modeling results indicated that the maximum combined concentration of modeled and monitored total PM_{10} impact from the emissions after the proposed modification when added to the background concentration would be $144.2 \mu\text{g}/\text{m}^3$, less than the 24-hr National Ambient Air Quality Standard (NAAQS) of $150 \mu\text{g}/\text{m}^3$. It is important to note that these concentrations represent a modeled 24-hour maximum impact, and are not representative of continuous concentrations. This modeled impact corresponds to an average wind speed of 3.8 miles per hour (mph) from the West-Northwest direction. The meteorological data were obtained from the nearby Herriman Station.

The Herriman meteorological data was supplied by the Utah Division of Air Quality (UDAQ) and is considered representative of the mine location. Data for years 2004 through 2006 were used for the AERMOD analysis.

AERMOD modeling demonstrated that the maximum combined concentrations of modeled and monitored PM_{10} after the proposed expansion occurred when the average wind speed was 3.8 miles per hour (mph) and the average wind direction was from the northwest sector. The current CFD model will simulate this condition of wind out of the west-northwest at 3.8 mph to estimate pit retention during these conditions.



Wind Rose for December 21, 2006 at Herriman Station



Project #: 414399
 Date: 21 March 2011
 File: KUC-T1b-r0

Bingham Canyon Mine
 Pit Retention Study

Model Setup: Geometry

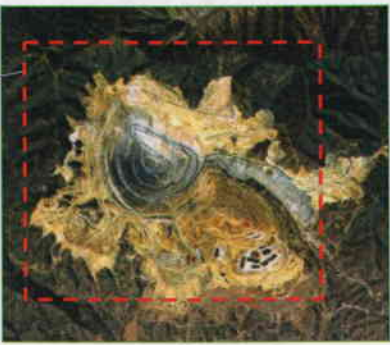
Model setup parameters have been chosen to closely approximate those used by the authors of the original U of U study.

The model shape and domain size have been set similar to the U of U study, albeit slightly larger due to an increase of mine footprint since 1996. Original model domain and current model domain are illustrated below. Model vertical limits extend to the mixing height calculated by the original study of approximately 14,000 ft above mean sea level. Depending on the topography, this top boundary is approximately 7,200 ft above the edge of the pit.

The primary source of data for the geography is a topographic contour plot produced during an aerial survey of the site conducted in 2009. The aerial survey did not include all of the area required by the model. The areas not covered by the aerial survey were stitched from USGS topography.

This topographical data set is translated to a simplified three-dimensional surface that is acceptable to the CFD simulation tools. A three-dimensional solution grid is created in the air-space above the ground to allow calculation of the variables of flow and the resultant particle paths.

Topography from USGS



U of U model extent
Current CFD model extent

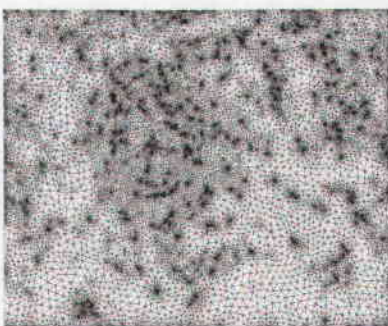
Contour line translation



3D Surface Translation



CFD Mesh Translation



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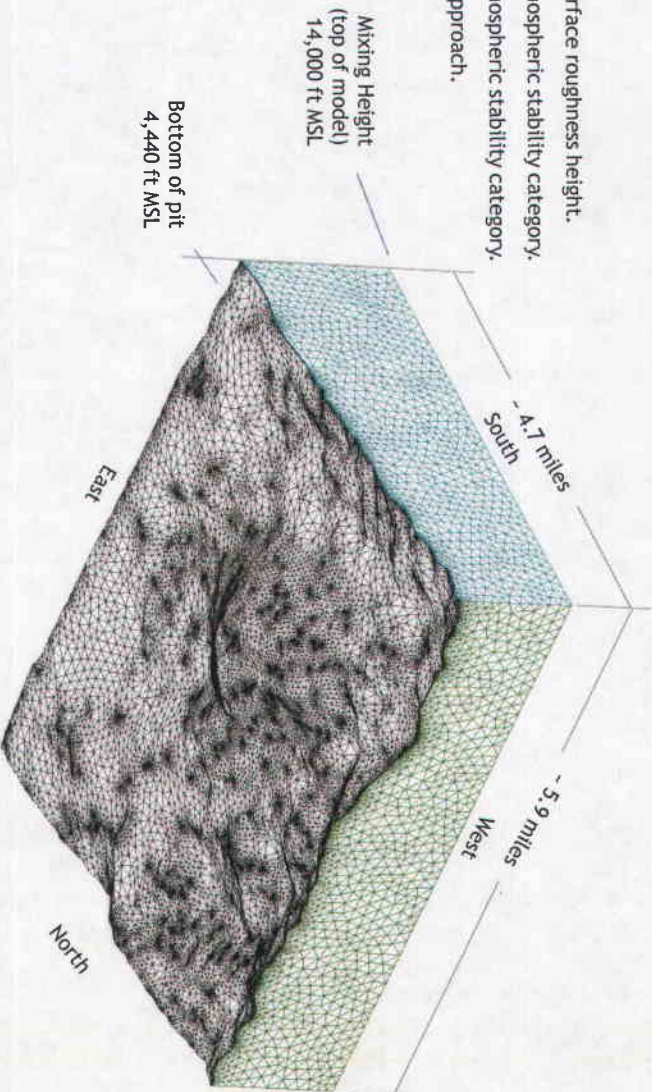
Bingham Canyon Mine
Pit Retention Study

Model Setup: Solution parameters based on U of U study

Many of the solution parameters were carried over from the U of U study into this model setup including the following:

- Air Density: 1 kg/m³ corresponding to the site elevation of 5,000ft above sea level.
- Air Viscosity: 1.21 x 10⁻⁵ lbm/ft-sec
- Particle Density: 1000 kg/m³
- Turbulence: Standard K-ε Model
- Oncoming winds: Uniform atmospheric boundary layer profile.
- Mixing height boundary type: Symmetry.
- Surface roughness length: 15cm
- Model Boundaries:
 - o Wind Inlet: Velocity inlet with no assumed atmospheric boundary layer profile
 - o Other vertical boundaries: Pressure-outlet allowing particle escape
 - o Top: Symmetry; particle reflection
 - o Ground surface: Wall boundary; 100% particle trap*; 15cm surface roughness height.
- Turbulent Kinetic Energy: Per U of U study Table 4.4 depending on atmospheric stability category.
- Turbulent Dissipation Rate: Per U of U study Table 4.4 depending on atmospheric stability category.
- Particle release: Time-dependent stochastic 'random-walk' approach.
- Particle size: PM₁₀

* Model boundary deposition is the action taken by a particle upon reaching model boundaries (e.g. ground, north side, east side, west side, south side, top). 100% trap at ground indicates that all particles impacting the ground are trapped there and do not escape the model boundaries.



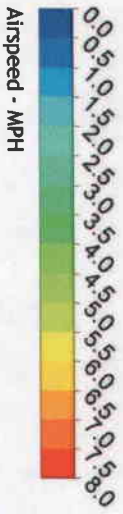
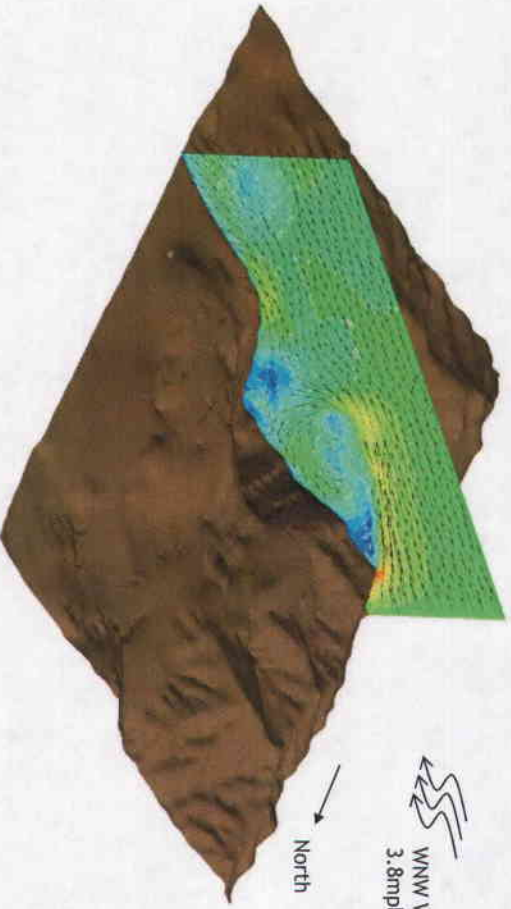
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Bingham Canyon Mine
Pit Retention Study

Flow Field Generation: WNW Wind @ 3.8mph

Wind Direction: WNW Wind
Wind Speed: 3.8 mph
Atm. Stability: Neutral

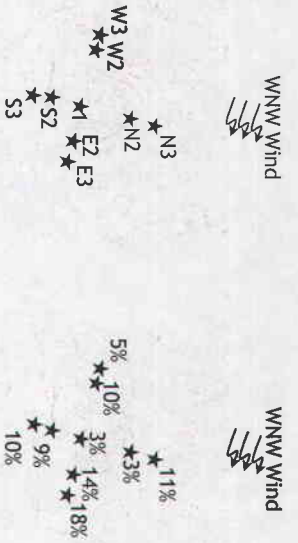


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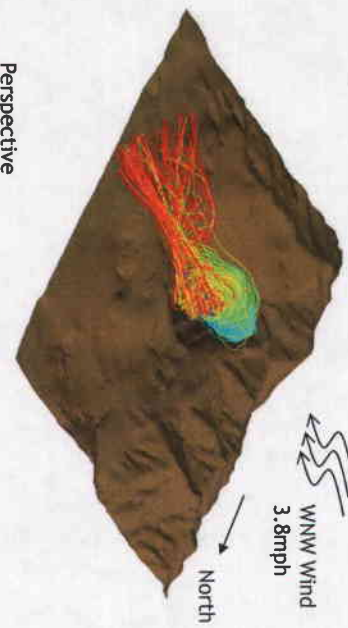
Bingham Canyon Mine
Pit Retention Study

Particle Tracking Results: South particles

Wind Direction: Out of the WNW
 Wind Speed: 3.8 mph
 Atm. Stability: Neutral
 Particle Counting: Steady state, continuous release
 Ground Deposition: 100% Trap



Particle Release 1
 Location: Low in the center of the pit
 Elevation: 7 feet above ground (4,447 ft MSL)
 Escape Fraction = 3%



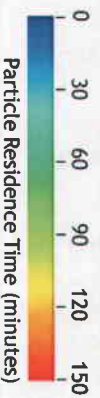
Particle Release S2
 Location: Mid-way up pit slope
 Elevation: 7 feet above ground (5,997 ft MSL)
 Escape Fraction = 9%



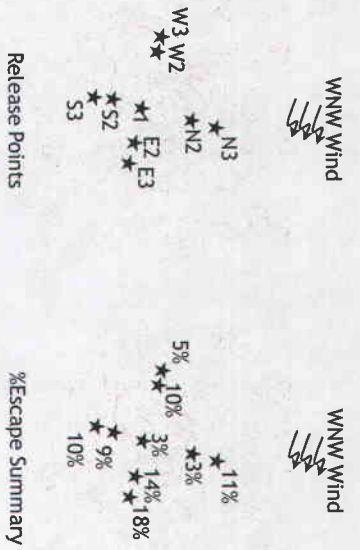
Particle Release S3
 Location: Pit ledge
 Elevation: 7 feet above ground (7,440 ft MSL)
 Escape Fraction = 10%



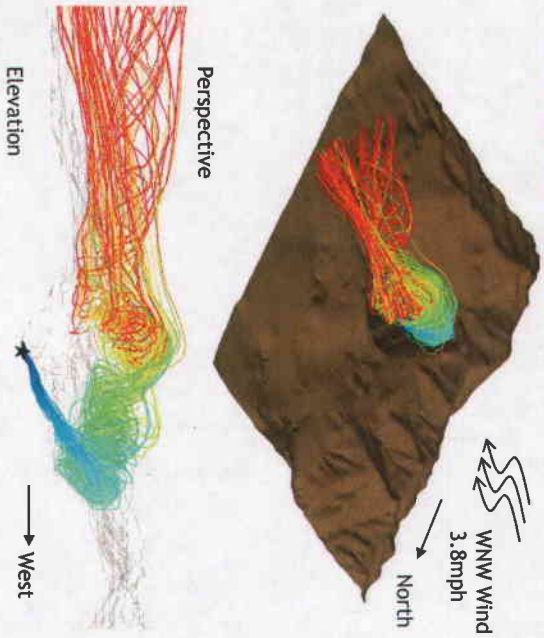
(continued)



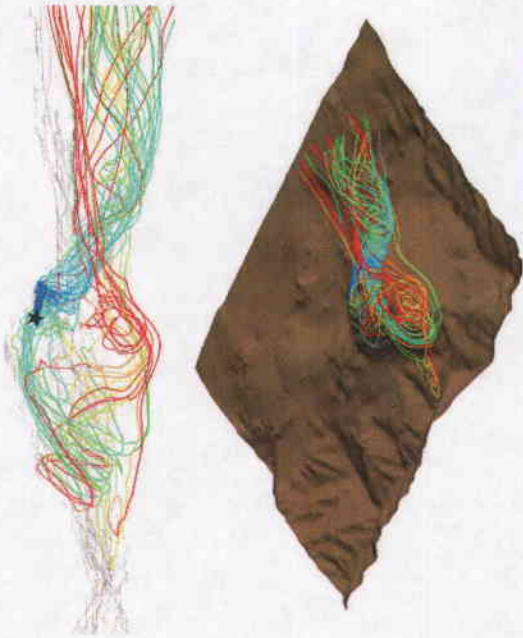
Particle Tracking Results: North Particles
(continued)



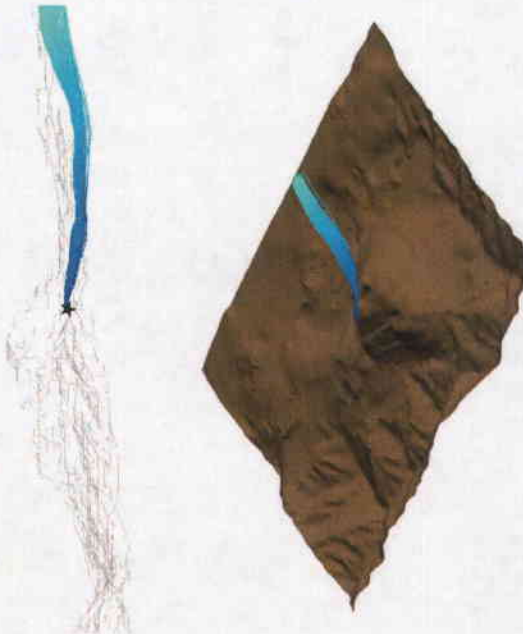
Particle Release 1
Location: Low in the center of the pit
Elevation: 7 feet above ground (4,447 ft MSL)
Escape Fraction = 3%



Particle Release N2
Location: Mid-way up pit slope
Elevation: 7 feet above ground (5,647 ft MSL)
Escape Fraction = 3%

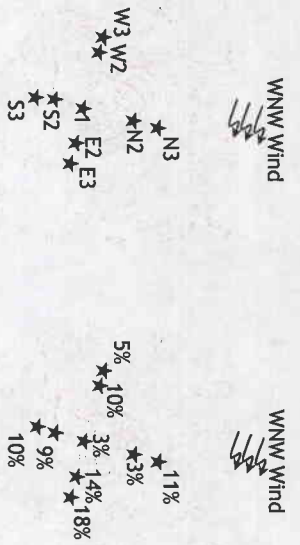


Particle Release N3
Location: Pit ledge
Elevation: 7 feet above ground (6,597 ft MSL)
Escape Fraction = 11%



(continued)

Particle Tracking Results: East particles
(continued)



Particle Release 1

Location: Low in the center of the pit
Elevation: 7 feet above ground (4,447 ft MSL)
Escape Fraction = 3%



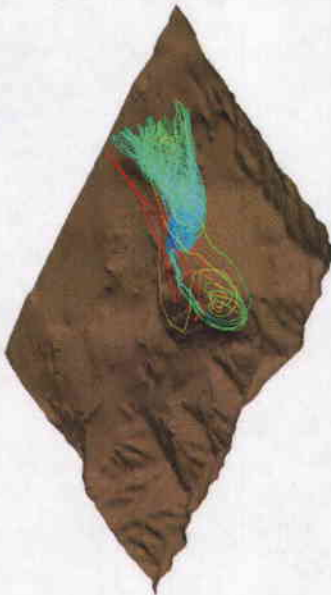
Perspective



Elevation

Particle Release E2

Location: Mid-way up pit slope
Elevation: 7 feet above ground (5,647 ft MSL)
Escape Fraction = 14%

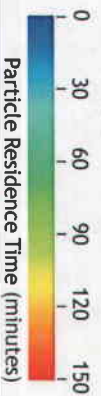


Particle Release E3

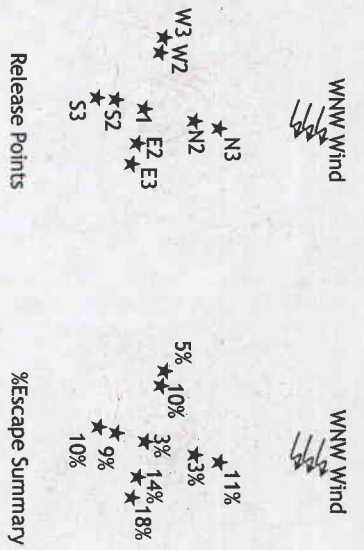
Location: Pit Ledge
Elevation: 7 feet above ground (6,947 ft MSL)
Escape Fraction = 18%



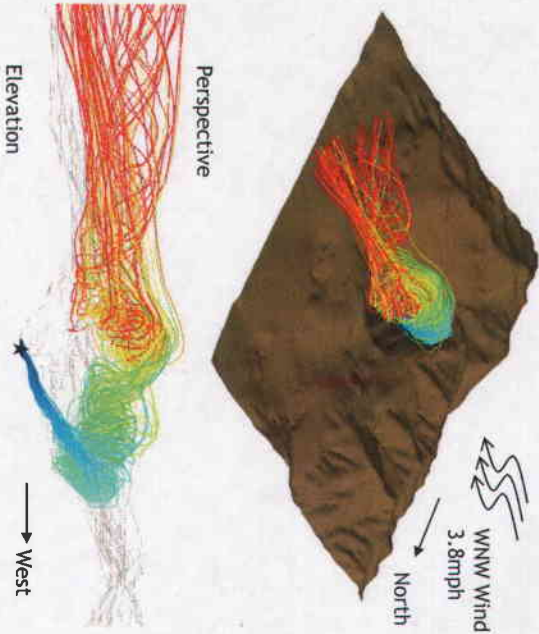
(continued)



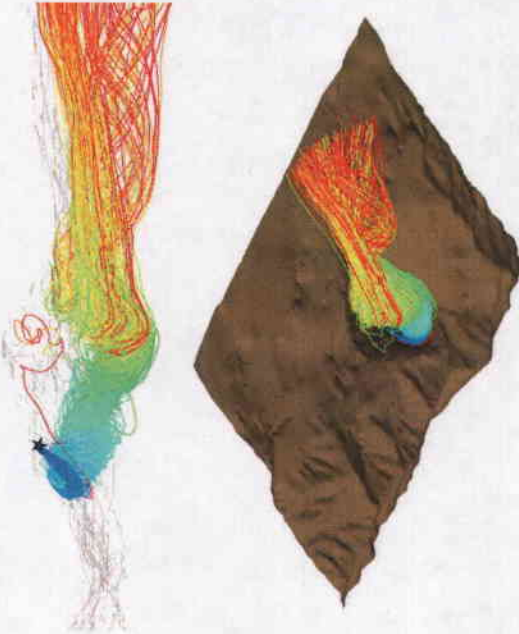
Particle Tracking Results: West particles
(continued)



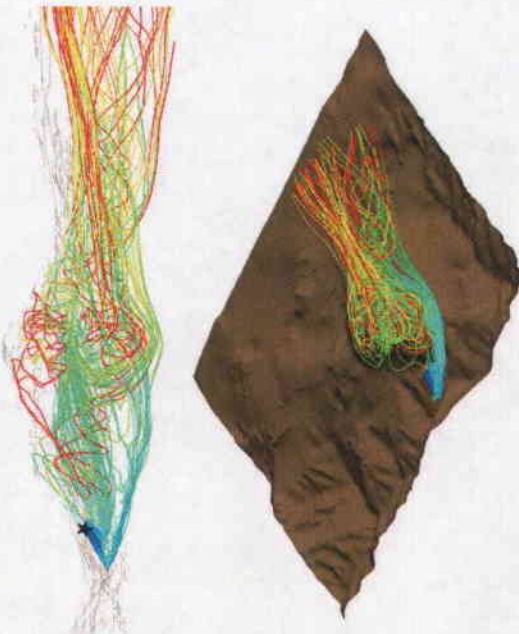
Particle Release 1
Location: Low in the center of the pit
Elevation: 7 feet above ground (4,447 ft MSL)
Escape Fraction = 3%



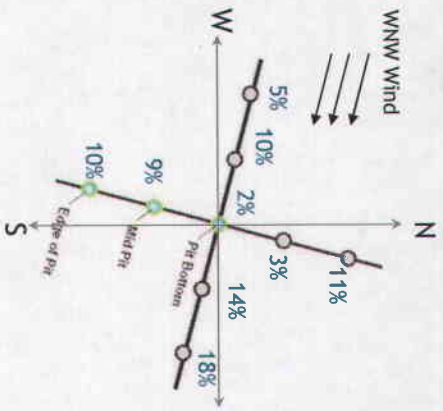
Particle Release W2
Location: Mid-way up pit slope
Elevation: 7 feet above ground (5,647 ft MSL)
Escape Fraction = 10%



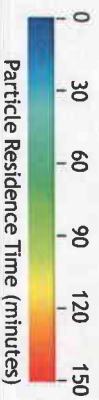
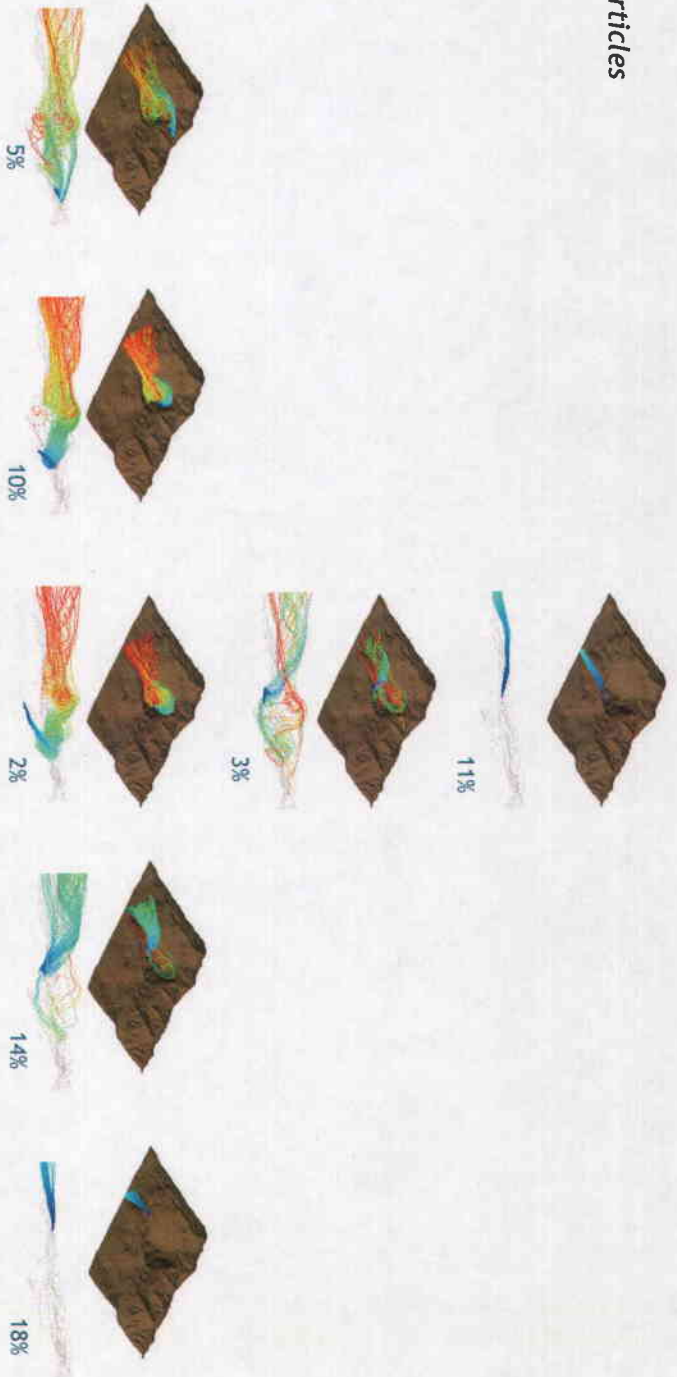
Particle Release W3
Location: Pit ledge
Elevation: 7 feet above ground (7,547 ft MSL)
Escape Fraction = 5%



Particle Tracking Results Summary: All particles
(concluded)



%Escape Summary



	Project #: 414399	Bingham Canyon Mine Pit Retention Study	12
	Date: 21 March 2011		
	File: KUC-T1b-r0		



PETER M. CORROON
Salt Lake County Mayor

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Salt Lake City, UT 84190-1020

801 / 468-2500
801 / 468-3535 fax

March 17, 2011

Ms. Cheryl Heying, Director
Division of Air Quality
PO Box 144820
Salt Lake City, UT 84114-4820

Subject: Salt Lake County's Comments on Kennecott Utah Copper's Bingham Canyon Mine Expansion Project, Approval Order IN0105710028-11, and the Proposed Changes to the Utah State Implementation Plan, Section IX-H.

Dear Ms. Heying,

Salt Lake County appreciates the opportunity to comment on Kennecott Utah Copper's Bingham Canyon Mine expansion project Approval Order IN0105710028-11, and the proposed changes to the Utah State Implementation Plan, Section IX-H.

We recognize the positive contributions Kennecott Utah Copper (KUC) has on our County, both economically and philanthropically. We also appreciate some of the measures KUC has pursued to make their operations more efficient using cleaner energy sources.

The County has an obligation to help protect our residents and ensure their communities are safe and healthy places to live, work, and play. The quality of our air continues to be one of the highest concerns expressed by our residents. We understand that addressing Salt Lake Valley's poor air quality requires focusing on a multitude of pollution sources, including KUC operations. The County is pleased to participate in internal and community awareness campaigns with our partners to bring attention to this issue and help educate individuals on how they can contribute to improving our air quality.

However, our current air quality is poor and current levels of PM_{2.5} in Salt Lake City during the winter month are significantly above established health advisory levels. As such, we would strongly encourage additional analysis be done specific to the potential negative impacts the mine expansion could have on air quality and the health of our residents. After reviewing all the related project documentation it is unclear the exact affects this project, and specifically levels of PM_{2.5}, will have to our already poor air quality. At the very least our residents have a right to fully understand just how this project might affect their health before a decision is made on modifying the Approval Order.

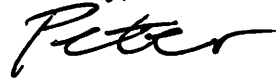
The County is requesting additional analysis be conducted to further clarify the impact this project will have specifically on PM_{2.5}, PM₁₀, and NO_x levels. We understand that any project delay, including the issuance of an Approval Order, is costly. However, potential health costs of additional pollution resulting in poorer air quality must also be considered during this process.

In addition, we have concerns over the proposed changes to the Utah State Implementation Plan (SIP) requested by KUC to increase the material-moved limitation amount in the 2005 approved SIP plan. As stated above, with air quality standards exceeding health advisory warnings during the winter months coupled with the unknown affects of the proposed increase, the requested change in the SIP are of concern without additional testing and analysis.

We understand the complex nature of this project and the many issues which must be considered in your analysis and final decision. With your mission to “safeguard human health and quality of life by protecting and enhancing the environment” we request further research and careful consideration of the potential health affects your decision may have on the residents of Salt Lake County.

Thank you again for the opportunity to submit our comments on this project.

Sincerely,

A handwritten signature in black ink, appearing to read "Peter", written in a cursive style.

Peter M. Corroon
Mayor, Salt Lake County