Public Comments Regarding the EPA Region 8 Proposed Dewey-Burdock In-Situ Uranium Recovery Project Permitting Actions

Comments from Organizations

American Legion Post 22
P. O. BOX 895
RAPID CITY, SOUTH DAKOTA 57709

May 1, 2017

USEPA - Region 8
Mail Code 8WP-SUI
1595 Wynkoop St.
Denver, CO 80202-1129

Gentlemen:

Please consider this letter from the 750 plus members of American Legion Post 22 to be in opposition to the proposed uranium mine which is to be located in Fall River County.

The members of American Legion Post 22 believe this mine could and/or would endanger both the Inyan Kara and the Minnelusa aquifers. The possible endangerment of these two aquifers is totally unacceptable.

We would urge the EPA to deny the requested permits. Your attention to this letter is appreciated.

Sincerely,

John H. Wheeler

John H. Wheeler,
Past Commander
Adjutant
Finance Officer

RECEIVED MAY 05 2017

ARGENTINE TOWNSHIP, SOUTH DAKOTA

RESOLUTION OF SUPPORT FOR POWERTECH (USA) INC. DEWEY-BURDOCK URANIUM PROJECT

WHEREAS Powertech desires to extract uranium utilizing the *in situ* recovery method from ore bodies located under the land owned by the residents of Argentine Township; and

WHEREAS this is the land where we ranch and depend on groundwater for our livelihood; and

WHEREAS we, along with our families, live here and depend on groundwater for everyday life; and

WHEREAS our research indicates the Dewey-Burdock Project has been analyzed by knowledgeable independent parties and demonstrates safe and environmentally sound capacity to be mined such that it meets the requirements of South Dakota and Federal oversight agencies; and

WHEREAS mining activities that occur at the Dewey-Burdock Project will be strictly regulated and overseen by the State of South Dakota, the U.S. Nuclear Regulatory Commission and the U.S. Environmental Protection Agency so as to protect our families' health, our livelihoods, the environment and most all, the water resources we use for ranching and our families' personal use.

NOW THEREFORE BE IT RESOLVED that the Argentine Township supports and encourages the granting of state and federal licenses and permits to Powertech (USA) Inc. to commence in situ uranium recovery activities on our land at the Dewey-Burdock Project in South Dakota.

Argentine Township Board of Directors

John A. Putnam — **Date:** 08.29.2013
John A. Putnam, Chairman

Wayne F. Peterson — **Date:** 08.29.2013
Wayne F. Peterson, Supervisor

Donald J. Andersen — **Date:** 8-29-13
Donald J. Andersen, Supervisor

Dawn Englebert — **Date:** 8/29/13
Dawn Englebert, Clerk/Treasurer

URANIUM PRODUCERS OF AMERICA
141 EAST PALACE AVENUE, POST OFFICE Box 669, SANTA FE, NEW MEXICO 87504-0669
TELEPHONE (505) 982-4611; FAX (505) 988-2987;
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June 19, 2017

Ms. Valois Shea
U. S. Environmental Protection Agency
Underground Injection Control Program, 8WP-SUI
1595 Wynkoop Street
Denver, CO 80202-1129

Re: Dewey-Burdock Draft UIC Class III Area Permit

Dear Ms. Shea:

On behalf of the Uranium Producers of America (UPA), the national trade association representing the domestic uranium industry, we are writing in opposition to the unprecedented and unwarranted new requirements the Environmental Protection Agency (EPA) is proposing for the Dewey-Burdock ISR operation. These requirements are arbitrary, capricious, and not supported by the governing statutes, existing regulations, or long-standing agency guidance. EPA has not provided any scientific or factual justification for the imposition of these new unwarranted and costly requirements.

UPA is unaware of any Class III permits for uranium ISR operations in the U.S. for which similar conditions have ever been imposed. Among our concerns are EPA's proposed requirements to:

- Conduct post-restoration groundwater monitoring for each wellfield after the Nuclear Regulatory Commission (NRC) approval that groundwater restoration has been successfully completed;
- Install a new down-gradient compliance boundary monitoring well network for each wellfield inside of that currently required by NRC license requirements and quarterly sampling to determine initial baseline values;
- Collect core samples prior to operations, storing these for years and then testing these in "pass/fail" laboratory column tests, where a single constituent measured above background concentration would signal a failed test;
- Additional monitoring and corrective action requirements for an excursion detected in a non-injection interval monitoring well beyond those reviewed and approved by NRC; and

- Additional monitoring and corrective action requirements for an "expanding excursion plume" and a "remnant excursion plume", despite citing no evidence that these have ever occurred at an ISR facility.

It appears the Region 8 office is attempting to apply similar standards to those included in a proposed rule issued by the EPA in January 2017 – Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings (82 FR 7400). However, as you know, that rulemaking is not finalized and has serious flaws. In fact, it is still open for public comment and unclear if it will ever be finalized. The EPA previously issued and latter withdrew a substantially similar proposed rule. The bottom line is, EPA must evaluate projects based on the existing statute, regulations, and long-standing guidance.

We urge Region 8 to re-evaluate its proposed requirements to ensure they are scientifically justified and in line with the existing rules and regulations.

Respectfully submitted,

Jon J. Indall
Counsel for Uranium Producers of America

Black Hills
Clean Water Alliance

June 16, 2017

Valois Shea
U.S. Environmental Protection Agency, Region 8
Mail Code 8WP-SUI
1595 Wynkoop Street
Denver, CO. 80202-1129

Dear Ms. Shea:

This letter provides comments on the EPA's draft Underground Injection Control permits for the proposed Dewey-Burdock uranium project, as well as the associated proposed aquifer exemption, which would be located in the Black Hills of South Dakota.

The draft permits would allow the use of water from the Inyan Kara Aquifers for uranium mining using 4,000 Class III wells and the construction of up to four Class V deep disposal wells to pump mining wastes into the Minnelusa Aquifer. The exemption would cover part of the Inyan Kara Aquifers under the Safe Drinking Water Act. The Class III wells would be the first permitted by the EPA for in situ leach (ISL) uranium mining and would therefore set a precedent.

The organizations listed below oppose the EPA's proposed issuance of permits and the exemption for these purposes for the following reasons.

There are a number of shortcomings in the EPA's documents and process surrounding these draft permits and draft exemption. This letter will summarize some of the key issues.

The basic issue in this process has been the failure to adhere to the NEPA process. While the NRC has attempted to follow that process for the possession of nuclear materials, its actions have not covered a variety of current issues that are under the EPA's purview, particularly water issues. The applicant's project has also changed in important respects between the time the NRC began considering it and the time the EPA began considering it. Examples include:

- NRC documents consider the use of 4,000 gallons of water per minute for the mining and reclamation process. The EPA applications consider the use of 9,000 gpm, more than twice as much water.
- This project was originally described as involving 1,500 injection, recovery, and monitoring wells. By the time the EPA issued its draft permits, this had grown to 4,000 wells, nearly three times more wells.

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- The projected bleed rates have varied over time, from .5% of the water used to 17% of the water used. In addition, the reverse osmosis process makes at least 30% of the water put through the RO process into waste, and this is not considered in the EPA documents. This seriously weakens all the assumptions and calculations on water use in the Class III draft permit documents.
- Documents prepared by Petrotek for Powertech/Azarga set subsurface water movement rates at 6 to 7 feet per year (without offering a source). NRC documents set the transmissivity rate in the Fall River formation at 255 $ft.^2$ per day and in the Lakota formation at 150 $ft.^2$ per day. Dr. Perry Rahn, Professor Emeritus from the South Dakota School of Mines and the acknowledged expert in these matters, said in a 2014 speech (which has since been submitted for publication) that groundwater velocity in the Inyan Kara Aquifers at the Dewey-Burdock site might be as much as 5,480 feet per year – over a mile -- which "might indicate fast groundwater movement through very permeable units of through fractures." The draft permits omit this critical information that could have very real impacts on wells that are downgradient of the proposed mine site.

These changes in the parameters of the proposed project go the heart of the information that informs the process in this case. The NRC and the EPA have had different projects submitted to them. The consideration of both projects would not be redundant – it would be sensible. The EPA should begin a thorough NEPA process to assess the project as it is currently proposed.

As part of the new process, the EPA should do thorough tribal consultation. The existing documents indicate that this process has barely begun, and yet draft permits have been issued. This makes a mockery of the consultation process, which should be completed well before draft permits are issued, so that the resulting information can be analyzed. The EPA must halt all further action until mutually-satisfactory consultation is completed. All cultural and historical properties must be given adequate protection.

The EPA also omits important issues from its Draft Cumulative Effects Analysis. Two that are glaring are the potential for mining wastes to be transported from other areas to Dewey-Burdock Class V wells and the potential for uranium mining to expand onto Powertech/Azarga's contiguous claims on the Wyoming side of the state line (the Dewey Terrace project). It's important to consider climate change, but it's also important to consider cumulative impacts that are on or adjacent to the proposed mine site.

Another important omission is that the draft permits beg the question of who is going to do on-the-ground regulation of the proposed mine and deep disposal wells. In 2011, the State of South Dakota suspended its ability to regulate in situ leach uranium mining, so it has no authority to do that regulation at this time. The NRC has two inspectors based in Texas, who visit ISL mines once or twice a year. There is no indication that their regulation can be competent or complete.

This is tremendously important. The draft permits include some very critical actions, such as testing the Minnelusa Aquifer to determine its water quality before deciding whether the company can proceed with deep disposal wells. This is a high-stakes test that can impact the future of the southwestern Black Hills. First of all, the water quality test should have been done under EPA's direct supervision before a draft permit was issued. If the Minnelusa's water turned

out to be appropriate for drinking water, the time and expense of creating the application and the Class V draft permit would have been avoided.

Second, if the permit is issued, the testing of the Minnelusa aquifer's water should be done under EPA's direct supervision, rather than allowing the company to do a test in the area of its choice using equipment it supervises, sending the sample to the lab of its choice, and expecting the people who use the Minnelusa Aquifer in the southern Black Hills to believe the results.

This brings us to another problem. Large portions of the documents used to support the EPA's draft permits are based on other permits that do not exist or that were prepared inadequately. For example, the EPA's documents defer repeatedly to the NRC's SEIS for the Dewey-Burdock project. This document echoed Powertech/Azarga's submissions in all important respects, rather than taking a hard look at the situation. The EPA documents also refer repeatedly to the requirements of an NPDES permit that has not even been applied for. And they refer frequently to a state Large Scale Mine Permit that has just barely begun the hearing process and is far from issuance. To rely on non-existent regulatory instruments for large portions of the permitting documents indicates both problems with the regulatory process and a lack of analysis of the proposed mine, deep disposal wells, and aquifer exemption.

Perhaps the most important omissions of information in the EPA's documents have to do with the confinement of mining fluids in the Class III wells areas. This goes to the heart of the safety of the project, and to the heart of the future of the region. There are real doubts whether the mining fluids can be contained at the proposed mine site. As Dr. Hannan LaGarry's research shows, there are around 7,500 old boreholes on the site, not the lower numbers put forward by the EPA or the company. This number comes from Dr. LaGarry's direct observation of Powertech's records. Even the lower numbers indicate that it is unlikely that all old boreholes can potentially be found and properly plugged.

In addition, research by Boggs and Jenkins (1980) indicated leakage across the Fuson shale between the Lakota and Fall River formations. Research by Wicks, Dean, and Kulander (2000) indicated that the Fall River formation is "pervasively fractured" along the western edge of the Black Hills. And research by Tank (1958), which may the only focused research on the Morrison formation in that area, indicates that the formation's thickness varies widely and that there is a "marked difference" between the formation's composition in Edgemont and seven miles north of Edgemont. The draft permits' heavy reliance on the Morrison formation as a confining layer should be re-considered, as the reality may not support the assumptions used in writing the draft permits. Given the information that is available, and given the importance of this particular issue, it is irresponsible to "conclude" that mining fluids could be contained based on limited scientific information and weak analysis.

Despite the importance of these issues in the local region and the permanence of impacts resulting from any uranium mining, this is not just a local issue. Any uranium mined under these permits would be shipped to facilities in Illinois and/or Ontario for enrichment, and the byproducts would be shipped to the White Mesa mill site in Utah. And, of course, further enrichment, production of electricity or weapons, and waste disposal would impact additional areas of the country – and potentially the world. Powertech is a multinational corporation based

in Canada, and the resulting uranium could be shipped abroad. It is thus important to all of our organizations to oppose these permits and aquifer exemption.

Given the fact that Otten and Hall of the U. S. Geological Survey are among those who have observed that "To date, no remediation of an ISR operation in the United States has successfully returned the aquifer to baseline conditions," the presumptions of companies who propose this type of mining – and the brave statements by regulating agencies -- must be approached with abundant caution. If no U.S. ISL mine has ever returned the water to baseline, what makes the EPA believe that this unprecedented task will be accomplished at Dewey-Burdock? This question must be addressed explicitly and analyzed thoroughly as a result of a full NEPA process, if the EPA decides to push forward rather than deny the permits and exemption.

The undersigned respectfully request that the EPA stop the permitting processes for the proposed Dewey-Burdock project. At the very least, tribal consultation and a de novo NEPA process are required. At best, the permits and the exemption should be denied.

Sincerely,

Lilias Jarding, Ph.D.
President, Clean Water Alliance
[redacted]

Jim Woodward
Coordinating Committee Member
Coloradoans Against Resource Destruction
[redacted]

Cathe Meyrick, President
Lee J. Alter, Government Affairs Committee
Tallahassee Area Community
[redacted]

Bonnie Gestring, Northwest Program Director
Earthworks
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Lori Andresen, President
Save Our Sky Blue Waters
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Geoffrey H. Fettus, Senior Attorney
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Susan Gordon, Coordinator
Multicultural Alliance for a Safe Environment
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Randi Spivak, Public Lands Program Director
Center for Biological Diversity
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Lawrence Novotny, Secretary
South Dakota Resources Coalition
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Beth Burkhart, Vice President
Norbeck Society
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Rick Bell, President
Dakota Rural Action Black Hills Chapter
[redacted]

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William J. Bielecki, Sr.
Law Advocate, Oglala Sioux Tribal Court
Northern Cheyenne Tribal Courts
[redacted]

[redacted]

BLACK HILLS SIOUX NATION TREATY COUNCIL
DECLARATION

TREATY COUNCIL(s)

Representative Authority

To whom it may concern:

Please be advised, pursuant inherent rights, power, and authority, as handed down through the generations and embraced by the United States Congress of the United States of America, the **Black Hills Sioux Nation Treaty Council** continues to serve the people (Oyate) in a representative capacity, as it has done in the years and centuries past. The **Black Hills Sioux Nation Treaty Council** asserts its authority pursuant the following:

1. The United States Constitution states that no State shall enter into a Treaty, thereby precluding the State of South Dakota from entering any Treaty, nor amending or otherwise modifying any existing Treaty to wit:

The Constitution of the United States
Article. I.

US Const., Art. I, Section. 10.

No State shall enter into any Treaty…

2. The United States Constitution states in Article VI that Treaties shall be the supreme law of the land, to wit:

US Const., Article. VI.
This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; **and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.**

3. Attorneys across America who have taken oaths, by and through their licensing process, to support and defend the United States Constitution equally take an oath to support and defend Article VI (treaties) of the same United States Constitution. A violation, willful misinterpretation or circumvention of a Treaty (1851 & 1868 inclusively) is a violation of the United States Constitution.

4. Pursuant the United States Constitution, done in Convention by the Unanimous Consent of the States present the **Seventeenth Day of September in the Year of our Lord one thousand seven hundred and Eighty seven** and of the Independence of the United States of America the Twelfth, the 1851 and the 1868 Treaties are supreme law of the land.

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5. The Black Hills Sioux Nation Treaty Council is a well established Council embraced and approved by the Oyate (people) of the member Tribes extending 1851 Treaty territory as defined by the 1851 Fort Laramie Treaty signed on September 17, 1851.

6. The delegates of the Council, as descendents and/or successors of the 1851 Treaty Council Delegates, are appointed or elected by the respective member Tribe's traditional processes. The Council Members or Delegates, singularly or collectively, carry a very unique and special authority, and also in a representative capacity, as traditional leaders of the **Oyate** ("people") and various **Tiospayes** ("extended families"). This authority has been recognized and embraced since the first Treaties made by and between the United States of America and the various Tribes, more particularly the 1851 and 1868 Fort Laramie Treaties. See below:

September 17, 1851

Articles of a treaty made and concluded at Fort Laramie, in the Indian Territory, between D. D. Mitchell, superintendent of Indian affairs, and Thomas Fitzpatrick, Indian agent, commissioners specially appointed and authorized by the President of the United States, of the first part, and the chiefs, headmen, and braves of the following Indian nations, residing south of the Missouri River, east of the Rocky Mountains, and north of the lines of Texas and New Mexico, viz, the Sioux or Dahcotahs, Cheyennes, Arrapahoes, Crows, Assinaboines, Gros-Ventre Mandans, and Arrickaras, parties of the second part, on the seventeenth day of September, A.D. one thousand eight hundred and fifty-one.

ARTICLE 6. The parties to the second part of this treaty having selected principals or head-chiefs for their respective nations, through whom all national business will hereafter be conducted, do hereby bind themselves to sustain said chiefs and their successors during good behavior.

7. By the highlighted sentences, we can clearly see that the Chiefs, Headmen, Principals and Head-Chiefs served the respective Tribal Nations in a representative capacity before the United States representatives. By the United States Congress's approval of the Treaty, the Congress also validated the Chiefs, Headmen, Principals and Head-Chiefs as representatives for the various Tribal Nations. Additionally, the United States of America and its Congress, as authors of the Treaty, offered, granted, and approved that the Chiefs, Headmen, Principals and Head-Chiefs, and their successors, to conduct [A]ll national business thereafter, and further to **bind themselves to sustain said chiefs and their successors during good behavior.**

8. The above stated Chiefs, Headmen, Principals and Head-Chiefs served as a Treaty Council *de facto*, although not so named at the time of making the Treaty.

9. We also learn that the Chiefs, Headmen, Principals and Head-Chiefs maintained their representative capacity, as Treaty Delegates by and through the 1868 Fort Laramie, to wit:

Fort Laramie Treaty, 1868

ARTICLES OF A TREATY
MADE AND CONCLUDED BY AND BETWEEN

Lieutenant General William T. Sherman, General William S. Harney, General Alfred H. Terry, General O. O. Augur, J. B. Henderson, Nathaniel G. Taylor, John G. Sanborn, and Samuel F. Tappan, duly appointed commissioners on the part of the United States, and the different bands of the Sioux Nation of Indians, by their chiefs and headmen, whose names are hereto subscribed, they being duly authorized to act in the premises.

ARTICLE XVII.

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It is hereby expressly understood and agreed by and between the respective parties to this treaty that the execution of this treaty and its ratification by the United States Senate shall have the effect, and shall be construed as abrogating and annulling all treaties and agreements heretofore entered into between the respective parties hereto, so far as such treaties and agreements obligate the United States to furnish and provide money, clothing, or other articles of property to such Indians and bands of Indians as become parties to this treaty, but no further.

10. In other words, except for territory (Article II), money, clothing and articles of property (farm implements'), no other provision of the 1851 Treaty was abrogated or annulled. **Article 6** of the **1851 Treaty** providing for the Chiefs, Headmen, Principals and Head-Chiefs, **and their successors**, to conduct [A]ll national business thereafter, and further to **bind themselves to sustain said chiefs and their successors during good behavior** remained in full force and effect.

11. In 1934, the Indian Reorganization Act ("IRA") was signed into law, however, because the 1851 and 1868 Treaties are supreme laws of the land under the US Constitution, and preceded the enactment of IRA, IRA could only prevail if the writings drafted were within the framework of the already existing Constitutional Article VI, thereby forcing continuance in honoring the Treaties.

12. The above is further evidenced by a 1935 amendment to IRA codified as **25 USC Sec. 478b**, to wit:

US TITLE 25 - INDIANS
CHAPTER 14 - MISCELLANEOUS
SUBCHAPTER V - PROTECTION OF INDIANS AND CONSERVATION OF RESOURCES

Sec. 478b. Application of laws and treaties

STATUTE-
All laws, general and special, and all treaty provisions affecting any Indian reservation which has voted or may vote to exclude itself from the application of the Act of June 18, 1934 (48 Stat. 984) [25 U.S.C. 461 et seq.], shall be deemed to have been continuously effective as to such reservation, notwithstanding the passage of said Act of June 18, 1934. Nothing in the Act of June 18, 1934, shall be construed to abrogate or impair any rights guaranteed under any existing treaty with any Indian tribe, where such tribe voted not to exclude itself from the application of said Act.

SOURCE-
(June 15, 1935, ch. 260, Sec. 4, 49 Stat. 378.)

The Indian Reorganization Act of June 18, 1934 (IRA, Sec. 16).

Any Indian tribe, or tribes residing on the same reservation, shall have the right to organize for its common welfare, and may adopt an appropriate constitution and bylaws, which shall become effective when ratified by a majority vote of the adult members of the tribe, or of the adult Indians residing on such reservation, as the case may be, at a special election authorized by the Secretary of the Interior under such rules and regulations as he may prescribe…].

In addition to all powers vested in any Indian tribe or tribal council by existing law, the constitution adopted by said tribe shall also vest in such tribe or its tribal council the following rights and powers: To employ legal counsel, the choice of counsel and fixing of fees to be subject to the approval of the Secretary of the Interior; to prevent the sale, disposition, lease, or encumbrance of tribal lands, interests in lands, or other tribal assets without the consent of the tribe;…].

13. **THEREFORE,** notwithstanding the Indian Reorganization Act of 1934, nor as may be amended, the 1851 and 1868 Treaties continue today as the supreme law of the land, and **Article 6** of the **1851 Treaty** providing for the Chiefs, Headmen, Principals and Head-Chiefs, **and** the successor Treaty

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Councils shall continue to conduct [A]ll national business, and further to **bind themselves to sustain said chiefs and their successors during good behavior.** Article 6 of the **1851 Treaty** remains in full force and effect.

14. The Oglala Sioux Tribal Council, and its courts are bound by the 1851 and 1868 Treaties as further evidenced by their own Tribal Constitution, to wit:

PREAMBLE

We, the Oglala Sioux Tribe of the Pine Ridge Indian Reservation, in order to establish a more perfect organization, promote the general welfare, conserve and develop our lands and resources, secure to ourselves and our posterity the powers and exercise certain rights of home rule not inconsistent with Federal laws and obligations and in recognition of God Almighty and His Divine Providence, do ordain and establish this constitution for the Oglala Sioux Tribe.

ARTICLE IV - POWERS OF THE COUNCIL

Section 4. Enumerated Powers. The Oglala Sioux Tribal Council shall exercise the following powers, subject to any limitations imposed by the laws of the Constitution of the United States and subject further to all express restrictions upon such powers contained in this Constitution and the attached Bylaws:

ARTICLE XV - OATH OF OFFICE

Section 1. Each Tribal Council Representative and Executive Committee Officer shall be required to take an oath of office prior to assuming constitutional duties.

(Oath) I,_____, do solemnly swear that I will promote, preserve, and strengthen the general health and welfare of the Oglala Lakota Oyate; and I will support and defend this Constitution and the human rights of the Oglala Lakota Oyate and the human rights of other peoples as recognized in international laws, treaties - which includes both the 1851 and 1868 Ft. Laramie Treaties, and declarations.

15. The Oglala Sioux Tribal Law & Order Code, Ch. 1, § 20.27 (a) clearly states that Treaties shall have binding effect, to wit:

Chapter 1, SECTION 20.27 - APPLICABLE LAW

In determining any case over which it has jurisdiction, the Oglala Sioux Tribal Court shall give binding effect to:

(a) any applicable constitutional provision, treaty, law, or any valid regulation of the United States;

16. Because the Tribal Constitution asserts that it may not enact any law inconsistent with the Treaties (1851 & 1868), nor enact any law inconsistent with the Federal laws (US Constitution **Article 6** and **25 USC 478b**. Application of laws and treaties), and furthermore, in light of Council Representatives and Executive Committee Officers taking oaths to support and defend treaties (1851 & 1868), treaties take precedent over any and all Tribal law and ordinances.

17. **THEREFORE,** pursuant paragraphs 16 through 30, the Black Hills Sioux Nation Treaty Council, and/or its delegates, asserts that by and through their inherent rights, authority and power as successor representatives of the 1851 and 1868 Treaties (Treaty Councils), they have the right, authority, power and duty to have standing in any and all actions of any court on any membership reservation. This standing and/or personal jurisdiction extends to representation over all Tribal business, land and resources (whether natural or otherwise) issues of a kind, Tribal finances, the general welfare of the Oyate, and etcetera.

William J. Bielecki, Sr.

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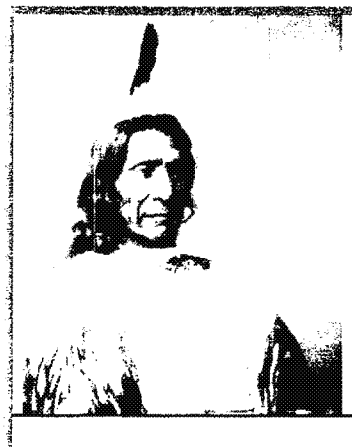
Floyd Looks for Buffalo - 5/8/17



BLACK HILLS SIOUX NATION TREATY COUNCIL

PINE RIDGE AGENCY, SD

[redacted]

MEMBER RESERVATIONS

Cheyenne River, Crow Creek, Fort Peck, Lower Brule, Pine Ridge, Rosebud, Standing Rock, Yankton, Santee

A DECLARATION TO INVOKE INHERENT RIGHTS AND AUTHORITY UNDER THE 1851 AND 1868 FORT LARAMIE TREATIES

- **OVER MINERAL EXPLORATION AND EXTRACTION;**
- **OVER ENERGY AND FUEL PIPELINES OF A KIND;**
- **THE UNAUTHORIZED CEDING OF LAND IN THE NAME OF PARKS;**
- **AND OTHER MATTERS.**

TO ALL UNITED STATES: STATE, FEDERAL, AND OTHER OFFICIALS LISTED ON THE ATTACHED SERVICE LIST AND THE PUBLIC AT LARGE:

By the power and authority vested in the Black Hills Sioux Nation Treaty Council, by and through a traditional and inherent process of the Oyate (people), hereby declares **DECLARATION TO INVOKE INHERENT RIGHTS AND AUTHORITY OVER MINERAL EXPLORATION AND EXTRACTION; AND OVER ENERGY AND FUEL PIPELINES OF A KIND; AND THE UNAUTHORIZED CEDING OF LAND IN THE NAME OF PARKS (Tribal National Park) UNDER THE 1851 AND 1868 FORT LARAMIE TREATIES**, and submits the following positions:

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INTRODUCTION

When, in the course of human events, it becomes necessary for one body of people to dissolve the political stronghold which have succumbed them under tyranny of another, and to assume among the powers of the earth, the separate and equal station to which the laws of nature and of nature's God entitle them, a decent respect to the opinions of mankind requires that they should declare the causes which impel them to take such great action.

We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain unalienable rights, that among these are life, liberty and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed. That whenever any form of government becomes destructive to these ends, it is the right of the people to alter or to abolish it, and to institute new government, laying its foundation on such principles and organizing its powers in such form, as to them shall seem most likely to effect their safety and happiness. Prudence, indeed, will dictate that governments long established should not be changed for light and transient causes; and accordingly all experience hath shown that mankind are more disposed to suffer, while evils are sufferable, than to right themselves by abolishing the forms to which they are accustomed. But when a long train of abuses and usurpations, pursuing invariably the same object evinces a design to reduce them under absolute despotism, it is their right, it is their duty, to throw off such government, and to provide new guards for their future security. Such has been the patient sufferance of the **BRULÉ, OGALLALAH (OGLALA), MINNECONJON, YANCTONAIS, ARAPAHOES, UNCPAPA, BLACKFEET, CUTHEADS, TWO KETTLE, SANS ARCH, SANTEE and other great bands of the SIOUX**; and such is now the necessity which constrains the Black Hills Sioux Nation Treaty Council and the people to reaffirm the 1851 and 1868 Treaties, and their inherent rights, duties and aspirations extending from said Treaties. This is not rebellion, but is to give notice that each of the reservations reflecting those mentioned Tribes, represented by their elected/appointed delegates, are to be regarded as individual Tribes and collectively as the Black Hills Sioux Nation Treaty Council, each maintaining, **not a government-to-government relationship, but a Nation to Nation relationship**, status and dialog with the United States of America and International Nations. That this is to alter its former systems of governmental practice, without dismantling or disruption of the current Tribal infrastructure, but to restore, improve and enforce the original purpose and intent of the 1851 treaty, as amended only by the 1868 Fort Laramie Treaty; to wit:

1851 FORT LARAMIE TREATY

Treaty of 1851, Fort Laramie with the Sioux

Articles of a treaty made and concluded at Fort Laramie, in the Indian Territory, between D.D. Mitchell, superintendent of Indian affairs, and Thomas Fitzpatrick, Indian agent, commissioners specially appointed and authorized by the President of the Unites States, of the first part, and the chiefs, headmen, and braves of the following Indian nations, residing south of the Missouri River, east of the Rocky Mountains, and north of the lines of Texas and New Mexico, viz, the Sioux or Dahcotahs, Cheyennes, Arrapahoes, Crows, Assinaboines, Grow-Venture Mandans, and Arrickaras, parties of the second part, on the seventeenth day of September. A.D. one thousand eight hundred and fifty-one.

WHEREAS: Where the US Federal Government, upon agreement for peace, had promised land under the 1851 Fort Laramie Treaty, but where is it today?

ARTICLE 1:

The aforesaid nations, parties to this treaty, having assembled for the purpose of establishing and confirming peaceful relations amongst themselves, do hereby covenant and agree to abstain in future from all hostilities whatever against each other, to maintain good faith and friendship in all their mutual intercourse, and to make an effective and lasting peace.

1851 TREATY MAP

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ARTICLE 5.

The aforesaid Indian nations do hereby recognize and acknowledge the following tracts of country, included within the metes and boundaries hereinafter designated, as their respective territories, viz:

The territory of the Sioux or Dahcotah Nation, commencing the mouth of the White Earth River, on the Missouri River; thence in a southwesterly direction to the forks of the Platte River; thence up the north fork of the Platte River to a point known as the Red Butte, or where the road leaves the river; thence along the range of mountains known as the Black Hills, to the head-waters of Heart River; thence down Heart River to its mouth; and thence down the Missouri River to the place of beginning.

1868 FORT LARAMIE TREATY

ARTICLES OF A TREATY
MADE AND CONCLUDED BY AND BETWEEN

Lieutenant General William T. Sherman, General William S. Harney, General Alfred H. Terry, General O. O. Augur, J. B. Henderson, Nathaniel G. Taylor, John G. Sanborn, and Samuel F. Tappan, duly appointed commissioners on the part of the United States, and the different bands of the Sioux Nation of Indians, by their chiefs and headmen, whose names are hereto subscribed, they being duly authorized to act in the premises.

ARTICLE I.

From this day forward all war between the parties to this agreement shall for ever cease. The government of the United States desires peace, and its honor is hereby pledged to keep it. The Indians desire peace, and they now pledge their honor to maintain it.

If bad men among the whites, or among other people subject to the authority of the United States, shall commit any wrong upon the person or property of the Indians, the United States will, upon proof made to the agent, and forwarded to the Commissioner of Indian Affairs at Washington city, proceed at once to cause the offender to be arrested and punished according to the laws of the United States, and also reimburse the injured person for the loss sustained.

If bad men among the Indians shall commit a wrong or depredation upon the person or property of nay one, white, black, or Indian, subject to the authority of the United States, and at peace therewith, the Indians herein named solemnly agree that they will, upon proof made to their agent, and notice by him, deliver up the wrongdoer to the United States, to be tried and punished

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according to its laws, and, in case they willfully refuse so to do, the person injured shall be reimbursed for his loss from the annuities, or other moneys due or to become due to them under this or other treaties made with the United States; and the President, on advising with the Commissioner of Indian Affairs, shall prescribe such rules and regulations for ascertaining damages under the provisions of this article as in his judgment may be proper, but no one sustaining loss while violating the provisions of this treaty, or the laws of the United States, shall be reimbursed therefor.

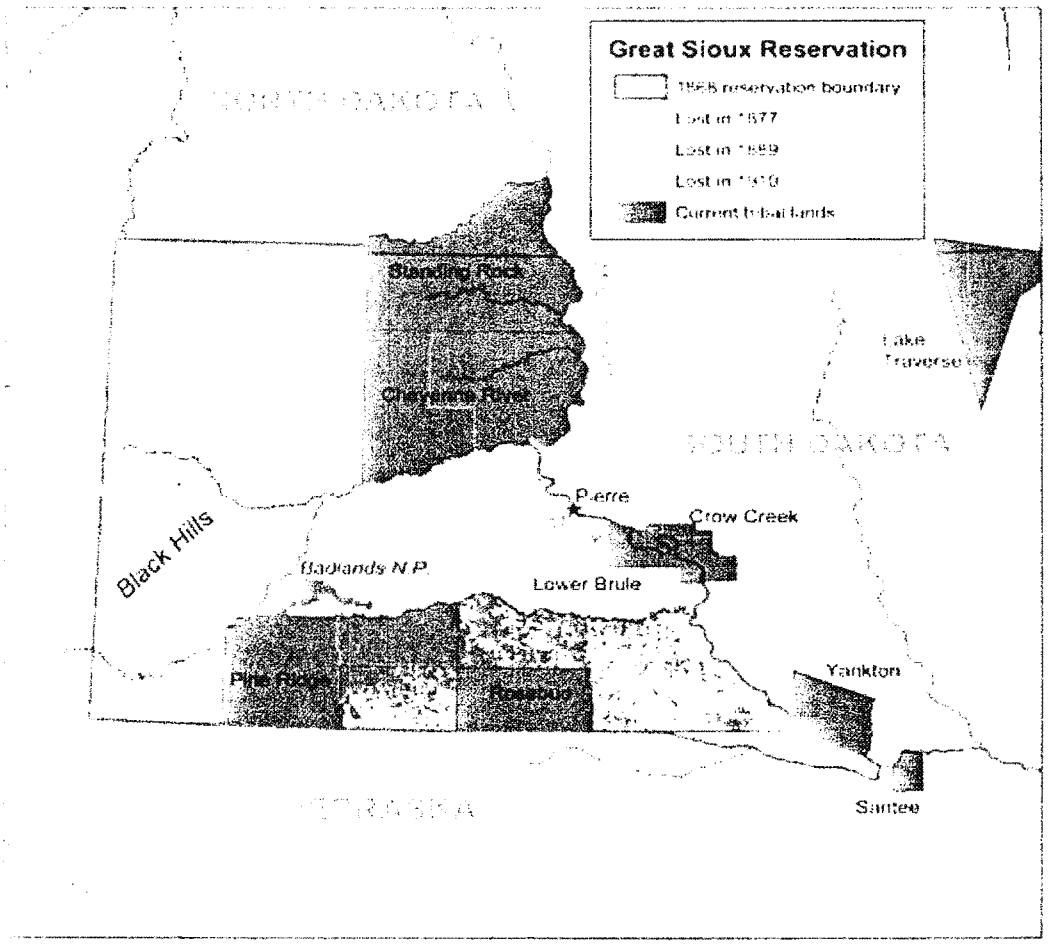
ARTICLE II.

The United States agrees that the following district of country, to wit, viz: commencing on the east bank of the Missouri river where the 46th parallel of north latitude crosses the same, thence along low-water mark down said east bank to a point opposite where the northern line of the State of Nebraska strikes the river, thence west across said river, and along the northern line of Nebraska to the 104th degree of longitude west from Greenwich, thence north on said meridian to a point where the 46th parallel of north latitude intercepts the same, thence due east along said parallel to the place of beginning; and in addition thereto, all existing reservations of the east back of said river, shall be and the same is, set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from time to time they may be willing, with the consent of the United States, to admit amongst them; and the United States now solemnly agrees that no persons, except those herein designated and authorized so to do, and except such officers, agents, and employees of the government as may be authorized to enter upon Indian reservations in discharge of duties enjoined by law, shall ever be permitted to pass over, settle upon, or reside in the territory described in this article, or in such territory as may be added to this reservation for the use of said Indians, and henceforth they will and do hereby relinquish all claims or right in and to any portion of the United States or Territories, except such as is embraced within the limits aforesaid, and except as hereinafter provided.

WHEREAS: Once again the US Federal Government, upon agreement for peace, had promised land under the 1868 Fort Laramie Treaty, **ARTICLE 2.** The United States agrees that the following district of country, to wit, viz: commencing on the east bank of the Missouri River where the forty-sixth parallel of north latitude crosses the same, thence along low-water mark down said east bank to a point opposite where the northern line of the State of Nebraska strikes the river, thence west across said river, and along the northern line of Nebraska to the one hundred and fourth degree of longitude west from Greenwich, thence north on said meridian to a point where the forty-sixth parallel of north latitude intercepts the same, thence due east along said parallel to the place of beginning; and in addition thereto, all existing reservations on the east bank of said river shall be, and the same is, set

apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from time to time they may be willing....

1868 TREATY MAP



WHEREAS: Each of the parties to the 1868 Fort Laramie Treaty gave their pledge of honor to wit: ARTICLE 1. From this day forward all war between the parties to this agreement shall forever cease. The Government of the United States desires peace, and its honor is hereby pledged to keep it. The Indians desire peace, and they now pledge their honor to maintain it.

WHEREAS: The US Federal Government continually imposed Laws on the Lakota Oyate forcing assimilation through its schools, laws, handouts/welfare and false promises of opportunities. As much as the federal government in speaking to Congress has said that

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they have talked with the Lakota Oyate about these laws and sought their approval, yet it was military interpreters not adequately schooled in the art of the Lakota language that misinterpreted the meanings of the provisions of the Acts and Treaties. The English Language uses words and terms that often have backward meanings and translations of that of the Lakota language. While it took the European settlers and early Americans centuries of developing American Jurisprudence, the American Indians and lawful inhabitants were expected to learn American Jurisprudence and legal definitions literally overnight. Examples for these being Papal Bull Decrees, the Marshall Trilogy, Manifest Destiny, Louisiana Purchase with the trip of Lewis and Clark, the 1877 starve or sell Act; the 1898 allotment Act; to mention a few.

ARTICLE V.

The United States agrees that the agent for said Indians shall in the future make his home at the agency building; that he shall reside among them, and keep an office open at all times for the purpose of prompt and diligent inquiry into such matters of complaint by and against the Indians as may be presented for investigation under the provisions of their treaty stipulations, as also for the faithful discharge of other duties enjoined on him by law. In all cases of depredation on person or property he shall cause the evidence to be taken in writing and forwarded, together with his findings, to the Commissioner of Indian Affairs, whose decision, subject to the revision of the Secretary of the Interior, shall be binding on the parties to this treaty.

ARTICLE XII.

No treaty for the cession of any portion or part of the reservation herein described which may be held in common, shall be of any validity or force as against the said Indians unless executed and signed by at least three-fourths of all the adult male Indians occupying or interested in the same, and no cession by the tribe shall be understood or construed in such manner as to deprive, without his consent, any individual member of the tribe of his rights to any tract of land selected by him as provided in Article VI of this treaty.

ARTICLE XVII.

It is hereby expressly understood and agreed by and between the respective parties to this treaty that the execution of this treaty and its ratification by the United States Senate shall have the effect, and shall be construed as abrogating and annulling all treaties and agreements heretofore entered into between the respective parties hereto, **so far as such treaties and**

agreements obligate the United States to furnish and provide money, clothing, or other articles of property to such Indians and bands of Indians as become parties to this treaty, but no further.

But once again, the United States of American defiled their own promises and integrity with respect to geographical territories, among other things.

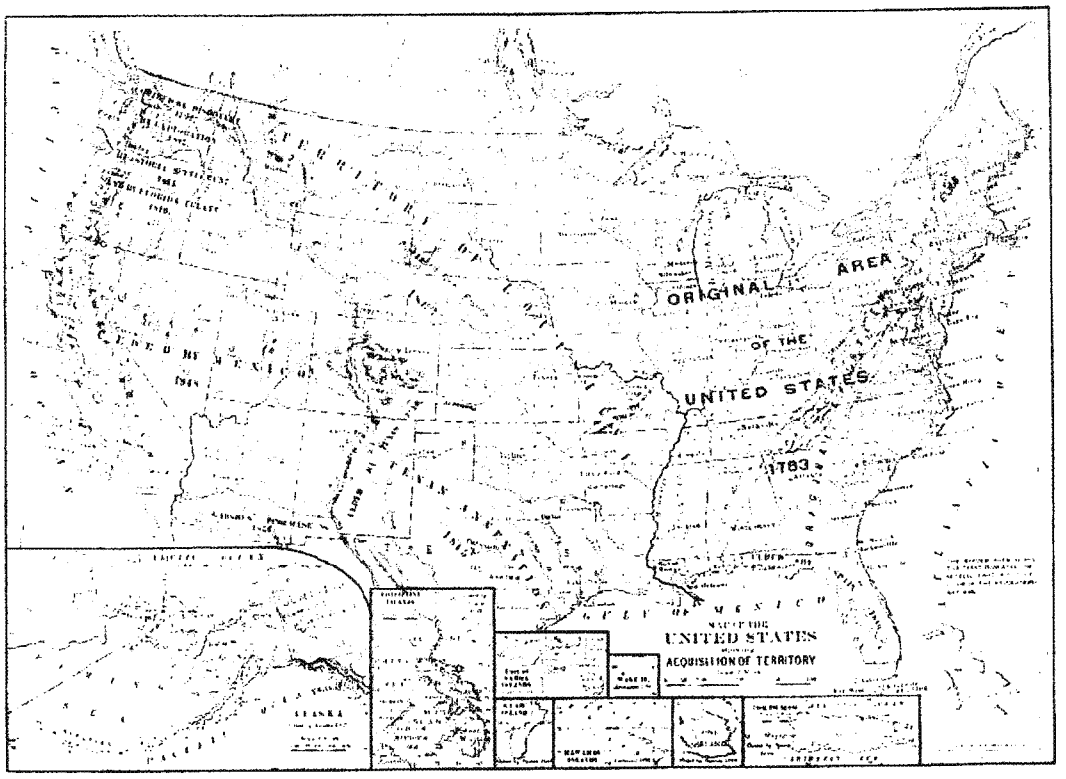
HISTORICAL ERA

The history of the United States of America since its formation, the allotment Acts, the Citizen Act of 1924, the Indian Reorganization Act of 1934, the Federal Indian Probate Acts and that of the US Congress and Secretary of Interior's policies in general that demonstrate an indifference attitude toward human/civil rights, law enforcement, equal application of the law, selective prosecution, poverty and disease, to name just a few, is a history of repeated injuries and usurpations of Treaty law (Supreme Law of the Land), Indian Reorganization Act of 1934 and the general human and civil rights of the people, all having in direct object the establishment of an absolute tyranny and second class citizenship over Native Americans and their respective residing reservations. To prove this, let facts be submitted to a candid world.

1803 LOUISIANA PURCHASE MAP

WHEREAS 1803 Louisiana Purchase: Although operating beyond their authorized power, the American envoys agreed to buy the territory, and early in May the three documents (antedated to April 30, 1803) ceding Louisiana to the United States were signed. Ironically, Thomas Jefferson who wrote the famous "Declaration of Independence" in 1776 for American freedom, also defied the American Constitution by an illegal purchase of the Louisiana Territory in 1803 without consulting with any of the inhabitants (Native Americans), who at that time were under various Treaties with Spain and France, to wit:

1803 LOUISIANA PURCHASE MAP



1803 LOUISIANA PURCHASE: ARTICLE III

The inhabitants of the ceded territory shall be incorporated in the Union of the United States and admitted as soon as possible according to the principles of the federal constitution to the enjoyment of all these rights, advantages and immunities of citizens of the United States, and in the mean time they **shall be maintained and protected in the free enjoyment of their liberty, property and the Religion which they profess.**

1803 LOUISIANA PURCHASE: ARTICLE VI

The United States promise to execute Such treaties and articles as may have been agreed between Spain and the tribes and nations of Indians until by mutual consent of the United States and the said tribes or nations other Suitable articles Shall have been agreed upon.

US CONSTITUTION: ARTICLE. IV.

Section. 2.

The Citizens of each State shall be entitled to all Privileges and Immunities of Citizens in the several States.

US CONSTITUTION: ARTICLE. VI.

This Constitution, and the Laws of the United States which shall be made in Pursuance thereof; and all Treaties made, or which shall be made, under the Authority of the United States, shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.

US CONSTITUTION: AMENDMENT XIV

Passed by Congress June 13, 1866. Ratified July 9, 1868.

Section 1.

All persons born or naturalized in the United States, and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny to any person within its jurisdiction the equal protection of the laws.

American pilgrims and settlers who fought so hard and gallantly for their own liberation and freedom, in turn, were so quick to rob, kill and plunder the American Indians (lawful inhabitants) in pursuit of civilizing/Christianizing the American Indians **by forced assimilation** and the taking of their life, liberty and pursuit of happiness away from them through:

THE CIVILIZATION FUND ACT OF 1819

The Civilization Fund Act of 1819 was created by the United States legislature to encourage activities of benevolent societies in providing education for Native Americans and also authorized an annuity to stimulate the "civilization process" by funding and placing agents within the Christian Churches.

WHEREAS: The Lakota Oyate (people) have always been blind-sided with new laws by the US Government that have been enacted without ANY consultation with the American Indians.

WHEREAS: The Wounded Knee massacre of December 29, 1890 is another prime example of the American Jurisprudence, and to add insult to injury, that twenty-two (22) "Medals of

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Honor," America's highest award for bravery, were issued to cooks, wagon drivers and the like, as a direct result of the massacre of over 300 unarmed Indian men, women, and children. This American disgrace continues to be uncorrected to date by the American President and the US Congress. Between 1876 to 1890 Sioux leaders were systematically murdered, American Horse (1876), Lame Deer (1877), Crazy Horse (1877), Spotted Tail (1881), Sitting Bull (1890) and Big Foot (1890). The Sioux Nation were forced to settle on reservations, buffalo herds were slaughtered to near extinction and families were divided by law, loyalties and foreign religions. The Sioux, as with other Native American tribes, were forced to become unwilling wards of the State, in effect, prisoners of a foreign power. Two-thirds of the approximately 300 Sioux killed in the Wounded Knee massacre were women and children, their bodies were found scattered over an area of more than a mile; and

MODERN DAY ERA

WHEREAS: A few simple statistics (*sources via DOJ, CDC and others*):

1. South Dakota's current unemployment is only 2.6%, unemployment on Pine Ridge is at 82%;

2. Violent crimes against Native Americans are nearly three (3x) times the rate against all other races, with over 50% committed against American Indians between the ages of 12-24. One little problem with these statistics is that they include Native Americans across America. The South Dakota Reservations are much...much higher than the national statistics. While statistically speaking simple assault shows to be the highest type of crime against Native Americans, but rape knowingly has the highest unreported incident rate (estimated at nearly 90% unreported due to police involvement on the Pine Ridge Reservation alone.) than any other crime. One mother alone lives with the burden of two (2) of her minor daughters raped, in separate incidents, by the Pine Ridge and Kyle police. Both departments refuse to investigate, therefore they do not count statistically, and the precedent of getting away with it is engraved even deeper in the hearts of the people; and

3. The reservation has a median income of about $4,000...less than 1/5th of the national average. With no industry on the reservation, of which many residents are forced to drive 120 miles to Rapid City for a job; and

4. The student drop-out rate of over 76%, means a far less educated work force; and

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5. Social workers in Pine Ridge estimate that between 60% and 80% of babies on the reservation are born with Fetal Alcohol Syndrome (FAS), stemming from drinking problems largely generated through hopelessness; and

6. Medical care is at a critical low when Heart Disease is at 170%, Diabetes at 600%, Alcoholism at 300% and FAS at 505% greater than the national average. Life expectancy is age 75 for whites, 66.3% for American Indians and 48.2% for Sioux Indians; and

7. American Indian death rates are: Sudden Infant Death Syndrome at 500%, Disease is at 520%, Liver Disease at 350%, and tuberculoses at 330% greater than the national average; and

8. Only 17% of American Indian high school graduates go on to college compared to 62% of the national average. While 48% of the American Indians will graduate from high school, less than half (23%) will graduate from the Sioux Indians; and

9. Twenty-nine (29%) of Sioux Indians are homeless; 44% of Sioux homes are without complete kitchens; 55% of households are without telephones; 33% of households heat with wood burning stove, without any local forestry to provide wood; and

10. Many of the Pine Ridge Indian Reservation's residents are still lacking indoor plumbing and are having water shipped to them; and

11. Those who have water wells go untested due to the high cost and un-affordability of testing; and ...

WHEREAS: The Federal Government has always maintained to a divide and conquer policy... utilizing alcohol, drugs, disease, blood quantum, food, clothing, medical care, medicine, trickery and deceit, including planting government agents within the Christian Churches throughout the 1800's, thereby violating the US Constitution's 1st amendment (separation of Church and State); and

WHEREAS: Although the few individuals employed by Tribal or Federal employers, and paying Federal Income Taxes, they are still left "**without federal representation**" and without federal enforcement of their human/civil rights; and

HUMAN/CIVIL RIGHTS VIOLATIONS

WHEREAS: The great disproportion of criminal convictions and/or excessive sentencing in both State and Federal Courts of Native American based strictly on race. Additionally, the

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inability of Native Americans to select their own counsel from their Tribes due to State and/or Federal attorney licensing requirement; and

WHEREAS: The Federal endorsement and financial support of gender and religious discrimination via Tribal Domestic Codes masked as Domestic Violence Codes (CANGLESKA, INC.); and

WHEREAS: The Tribal Council enacting laws in direct conflict with human and civil rights and liberties of the Oyate (People), such as mandatory 72 hour confinement for certain alleged crimes before release on bail and before trial; and

WHEREAS: The judicial system's participation in election fraud, selective prosecutions and selective denial of human and civil rights of the Oyate (People); and

WHEREAS: The prosecutor's office's involved in selective prosecutions of crime on the reservation, and assistance in election fraud, career scuttling, arrests without warrants, charges, counsel or bail, nor probable cause, and control over judges, encouragement of no contest pleas without counsel or explanation of what it means, nor the reading of rights to an accused (many are illiterate), in addition to arrests warrants being issued without probable cause when criminal summons should apply. Many sit in jail for weeks at a time without arraignment or knowledge of their charges, keeping in mind that Tribal Courts <u>are only misdemeanor courts</u>; and

WHEREAS: Arraignments with only the violated code given the defendants without explanation on how the code was violated, then requiring incarcerated inmates to file discovery motions to learn of what they are accused of doing, while without counsel nor knowing how to file motions. Additionally, most inmates are illiterate with respect to the inner workings of the law and procedures; and

WHEREAS: Prosecutors utilizing electronic transfer of warrants (without signature or police report) to Judge for signature of warrant, thereby denying Judge benefit of reviewing probable cause, yet the judge issues warrants regardless of lack of probable cause; and

WHEREAS: Prosecutors using their official positions to pursue their personal vendettas under the color of law: and

WHEREAS: Sudden court closings without scheduling or notice, thereby forcing all litigants calling in for rescheduling of their cases; and

WHEREAS: Court records of proceedings suddenly lost upon notice of appeal, or taking over a year to partially produce; and

WHEREAS: Pine Ridge Courts utilize a publically accessible single open mail bin for all Attorneys'/Law Advocates' court papers and documents that grossly violate security of attorney/client privilege and confidentiality in addition to failing to meet necessary evidentiary proof of service and/or legal correspondence, notwithstanding it's own codes on service; and

WHEREAS: Court Judges requiring their written approval prior to attorneys visiting their clients or potential clients in jail; and

WHEREAS: Court Judges taking months in following up with written orders after decisions made upon adjudication of cases, thereby leaving litigants without evidence or certainty of rulings indefinitely; and

WHEREAS: Pine Ridge Court Judges issuing temporary commitment orders of accused to wait for trial without bail for months at a time, simply because they are Indian and reside in another jurisdiction, keeping in mind that the court are only misdemeanor courts; and

WHEREAS: Runaway police brutality, excessive force and police killings (Pine Ridge: three murders within two weeks by local police, July, 2009); and

WHEREAS: The new Constitutional Amendment (M) of the Oglala Sioux Tribal Constitution providing for "Banishment" enacted on November 04, 2008 violates the Indian Civil Rights Act of 1968, *et seq*, and is designed specifically to target Tribal Members, that could easily be used to coerce and force allotted land owners to surrender their land for Tribal utilization of the ill famous "**CARBON CREDITS**; and

WHEREAS: Tribal Constitutions have virtually abolished "**EX POST FACTO**" from constitutions by reprinting of constitutions without identifying what amendments are and the dates of enactment, thereby rendering them entrapping, ambiguously vague and inoperable. Proper codification and adequate publication are essential to identifying what laws are in effect and at what times. The same proper codification applies to the law and order codes of which Tribal Councils repeatedly refuse to place in the public domain; and

WHEREAS: Time and time again the people of the reservations have asked for **Civil Rights Commissions** to come to the reservations and hear the complaints of the people, make the appropriate investigations, take the necessary actions to restore law and order, equal application of the law, law enforcement, mandate judicial accountability, but the pleas of the people fall only on deaf ears; and

HEALTH CARE

WHEREAS: Medical care is at an all time low for many reservations. Hospitals fail to be staffed with Doctors on the weekends; facilities require two Doctors to agree before ex-rays may be taken; Intensive Care Units (ICU) have been closed for years, thereby referring patients to Rapid City Regional and other major city hospitals, who in turn refuse admittance due to lack of bills being paid by Indian Health Service (HIS), and Obama Care is more interested in the nation's sexual habits and use of seatbelts than quality health care; and

EDUCATION

WHEREAS: Local Tribal Governments are powerless in having any input on the approval of credentials, quality, moral outlook and personalities of the staffing in local schools. Local School Board Committees are being totally ignored and overruled by State and Federal governments, and their unions with respect to health, safety, welfare and curriculum of the students. In most cases, Lakota language classes is still being denied; and

WHEREAS: Federal Government School Officials continually assert federal laws and regulations while blatantly ignoring same when it benefits them. When any attempts for redress, your labeled and treated as being rebellious and totally insignificant; and

WHEREAS: In some instances, teachers are jokingly telling students to go to White Clay, Nebraska (an alcoholic's safe haven) if they want to, thereby planting weak and demoralizing seeds of despair; and

WHEREAS: Schools fail to have adequate student handbooks, emergency response plans etc. while refusing to meet with parents to address these issues; and

WHEREAS: Students being instructed in due process of how to address their grievances, and yet being denied that same process by those who took such care in instructing them to begin with; and

WHEREAS: Student rest facilities littered with used tissue, lack of tissue, signs of human feces and graffiti written all over the walls, sustaining such health hazards and indignation that off reservation school facilities would never tolerate; and

FINANCES

WHEREAS: By treaty, the United States of American has assumed certain financial obligations to their treaty counterparts, namely the American Indian Tribes. As such the US Government serves in a fiduciary capacity, yet the US Government continually fails in its obligations to

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the Tribes (Oyate/People) and the American tax payers by ignoring Tribal elections and the true lawful recipients of said financial obligations. Time and time again the US Government stands witness to fraudulent elections without a single word. When called upon for legal assistance, the US Government simply looks the other direction. When cornered into making a response, the US Government's response is always that we do not get involved in Tribal elections, not caring whether the properly elected officials will be receiving the obligations of the US Government for proper disbursement, even though its obligation is to the people, not the Tribal government; and

WHEREAS: Some Tribal Councils, upon election, have squandered the monies allocated to it for the operation of various programs designed to benefit the Oyate (people). Through their excessive travel, ghost payrolls, unscheduled seminars of various kinds, alleged meetings and purposes etc., while never having said seminars, meetings and alleged training sessions on the reservations. The Tribal Councils and other Tribal Employees always seem to have to travel to distant cities and towns while draining the Tribal accounts with thousands upon thousands of dollars per diem; and

WHEREAS: Based on the above, the Oyate have asked their IRA elected officials countless of times for audits and accountability due to the fact that funds budgeted for special programs are being willfully robbed in order to support the above stated negligence and irresponsibility. The Oyate find that their repeated requests continually fall on deaf ears; and

WHEREAS: The Tribal Council continually commits the Tribes to more bonds, and more bonds, thereby cannibalizing the ongoing social programs with all income going to more and more debt service; and

WHEREAS: The Oyate has asked the Black Hills Sioux Nation Treaty Council, Oglala Delegates to declare the Pine Ridge Indian Reservation to be insolvent, thereby forcing audits and receivership until such time that adequate accountability and budgeting may be established; and

HE SAPA (BLACK HILLS

WHEREAS: Ever since the United States have relocated the Indian Treaty land to sub-standard reservations as today, the carpetbaggers and other scam artists have come to further devastate the native Americans with offers of mining minerals, Tribal National Parks, oil drilling and the like. These profiteers come in making offers of profits while overlooking the long-term damage that these carpetbaggers offer: Such as irreparable harm to the water supplies and wells when there are spills and pipe breakage that would cause another

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relocation of the Native Americans. The irreparable damage to the feeding stock that live off the lands that would cripple an entire region economically.

WHEREAS: Ever since the United States' enactment of the Indian Reorganization Act of 1934, there has been great confusion among the Tribes as to who shall represent the Treaties made by and between the United States of America (US) and the many Indian Tribes, and how appointments to these Treaty Councils shall be made. Many different groups (Teton Sioux Nation Treaty Council, The Great Plains Tribal Council Chairman's Association, Na Ca of the Dakota and Nakota Sioux bands, and others) came forth purporting themselves to be the lawful heirs and representatives of the 1851 and 1868 treaties. Part of the confusion is created by the fact that there were several 1868 treaties made with different bands of the Sioux Nation, while other bands are subject to prior treaties. So no mistake may be made, the 1851 and 1868 treaties commonly referred to are the treaties of "Fort Laramie" which include only those representatives of bands of the Sioux that were present and signed these specific treaties. While the 1851 Fort Laramie treaty was enacted in behalf of the entire Sioux Nation, the 1868 Fort Laramie treaty included only those bands of Lakota listed as follows:

> **Brulé band of Sioux, Ogallalah band of Sioux, Minneconjon band of Sioux, Yanctonais band of Sioux, Arapahoes, Uncpapa band of Sioux, Blackfeet band of Sioux, Cutheads band of Sioux, Two Kettle band of Sioux, Sans Arch band of Sioux, Santee band of Sioux.**

25 U.S.C. SECTION 478(B). APPLICATION OF LAWS AND TREATIES

> All laws, general and special, and all treaty provisions affecting any Indian reservation which has voted or may vote to exclude itself from the application of the Act of June 18, 1934 (48 Stat. 984) [25 U.S.C. 461 et seq.], shall be deemed to have been continuously effective as to such reservation, notwithstanding the passage of said Act of June 18, 1934. Nothing in the Act of June 18, 1934, shall be construed to abrogate or impair any rights guaranteed under any existing treaty with any Indian tribe, where such tribe voted not to exclude itself from the application of said Act.

WHEREAS: Only those bands of Sioux above listed are entitled to participate in any Ha Sapa (Black Hills) settlement discussions.

WHEREAS: We have come to this point in time where all Lakota must come together and utilize the treaties to restore HeSapa (Black Hills) to all:

UNITED STATES V. SIOUX NATION OF INDIANS ET AL. NO. 79-639

UNITED STATES, PETITIONER,
v.
SIOUX NATION OF INDIANS et al.
No. 79-639.

Supreme Court of the United States

["The facts are, as the Commission found, that the United States disarmed the Sioux and denied them their traditional hunting areas in an effort to force the sale of the Black Hills. **Having violated the 1868 Treaty and having reduced the Indians to starvation, the United States should not now be in the position of saying that the rations it furnished constituted payment for the land which it took. In short, the Government committed two wrongs: first, it deprived the Sioux of their livelihood; secondly, it deprived the Sioux of their land. What the United States gave back in rations should not be stretched to cover both wrongs.**" Id., at 4-5, U.S. Code Cong. & Admin. News 1974, p. 6115.

See also R. Billington, Introduction, in National Park Service, Soldier and Brave xiv (1963) (**"The Indians suffered the humiliating defeats that forced them to walk the white man's road toward civilization. Few conquered people in the history of mankind have paid so dearly for their defense of a way of life that the march of progress had outmoded"**). *United States v. Sioux Nation*, 448 U.S. 371, 100 S.Ct. 2716, 65 L.Ed 2d 844 (1980) Closing Statement by **Mr. Justice BLACKMUN delivered the opinion of the Court].**

Dissenting opinion:

[That there was tragedy, deception, barbarity, and virtually every other vice known to man in the 300-year history of the expansion of the original 13 Colonies into a Nation which now embraces more than three million square miles and 50 States cannot be denied... *United States v. Sioux Nation*, 448 U.S. 371, 100 S.Ct. 2716, 65 L.Ed 2d 844 (1980) Closing Statement by **Mr. Justice REHNQUIST, dissenting].**

While Justice Rehnquest dissented implying that the American Indians were always at war amongst themselves, yet since 1776 to date, there has only been about four years that the United States of America has not been engaged in a foreign war or

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battle. The American Indians have been in peace with the US for over a century, while continuously being demeaned and devastated by the United States.

WHEREAS: Each of the parties to the 1851 Fort Laramie Treaty gave their pledge of honor to wit:: ARTICLE 1: The aforesaid nations, parties to this treaty, having assembled for the purpose of establishing and confirming peaceful relations amongst themselves, do hereby covenant and agree to **abstain in future from all hostilities** whatever against each other, **to maintain good faith and friendship** in all their mutual intercourse, and to make an effective and lasting peace.

WHEREAS: Each of the parties to the 1868 Fort Laramie Treaty gave their pledge of honor to wit: ARTICLE 1. From this day forward all war between the parties to this agreement shall forever cease. **The Government of the United States desires peace, and its honor is hereby pledged** to keep it. The Indians desire peace, and they now pledge their honor to maintain it. The Indians kept their honor to this day; and

INHERENT RIGHTS, SOVEREIGNTY AND POWER

WHEREAS: In the past, Treaty Councils, consisting of Tribal Chiefs, Headsmen, Medicine Men and/or Elders, became the only liaison between the Tribal societies and the US Government over treaty matters and domestic issues. Today, they continue to remain as the only experts on treaty matters, who also collectively maintain true "Inherent Power" granted: through their own inherent rights passed down through their lineal heritage, or by those who have "Inherent Rights" (Oyate), inherent through their own lineal heritage.

WHEREAS: Each Tribe (Oyate) makes their own distinction as to who will become members of their respective Treaty Council and represents the Oyate's interest. It is the right and duty for the Tribal society as a whole to make that determination unencumbered by a government who is sitting on the opposite side of the Treaty. The Tribal government (Tribal Council), not the Treaty Council, is a direct extension of the US Government.

WHEREAS: The Tribal Constitution and the Tribal Council is an extension of the Indian Reorganization Act of 1934 which was drafted by the United States of America and incorporated throughout the United States Code, Title 25. It is subject to amendment at the mere will of the US Congress, and not the Tribes. The Tribal Constitutions and Tribal Councils are empowered strictly by the US Government as evidenced by Secretary of Interior's required approval for any changes. It is further evidenced by the many examples and countless court actions for the US Government breaking all the Treaties (i.e. the Indian Probate Reform Acts, mining, Black Hills issues and etc.), and the Tribal Councils' failures to block said violations. The Black Hills Sioux Nation Treaty Council, and other Treaty

Councils, on the other hand, are direct extensions of the Treaty Councils that originally initiated the 1868 Treaty and other Treaties, who possess true "Inherent Rights and/or Powers". Because the United States of America entered into said Treaties with the Native American Tribes, and also control the Tribal Councils, it would be a **DIRECT CONFLICT OF INTEREST** for the Tribal Council to represent the Native Tribes' interest in the Treaties. For example: It would be like a lawyer representing both sides of opposing parties. The Tribal Councils possess what is commonly known as clipped sovereignty extended and governed by the US Congress. Its sovereignty can be amended, modified or taken away at the mere will of the US Congress without cause.

WHEREAS: Ever since the United States' enactment of the Indian Reorganization Act of 1934, there has been great confusion among the Tribes as to who shall represent the Treaties made by and between the United States of America (US) and the many Indian Tribes, and how appointments to the Treaty Councils shall be made. The Black Hills Sioux Nation Treaty Council (Oglala Band) resolved this issue on April 01, 2009 before the Oglala Sioux Tribal Council. It established a formal precedent for all Native Tribes of America that without question, the **Treaty Councils**, are to be established by and through a traditional process **without the interference** of US established forms of governments (IRA – Tribal Councils) within the Tribes, and shall govern all Treaty matters without exception.

CONCLUSION

WHEREAS: The President of the United States, Secretary of Interior and subordinate agencies, and State Governors whose duties are to protect the rights of people, instead demonstrate constant ignorance of the people's cries, pleas, wishes and desires for assistance in seeking lawful remedies for the tyranny enslaving the people in prisons without walls, entombed with white collar crime, alcoholism, disease, police murders, **civil rights violations,** disparity and loss of all hope.

In every stage of these oppressions we have petitioned for redress in the most humble terms: our repeated petitions have been answered only by repeated injuries.

BLACK HILLS SIOUX NATION TREATY COUNCIL - RESOLUTIONS:

THEREFORE, The Black Hills Sioux Nation Treaty Council pursuant to the 1868 treaty executed at Fort Laramie on the twenty-fifth day of May, in the year A. D. 1868, in order to establish a more perfect tribal government, promote the general welfare, conserve and develop our lands and resources, secure to ourselves and our posterity the power to exercise certain

and unalienable rights of inherent sovereignty consistent with the 1851 and the 1868 Treaties of Fort Laramie, and in recognition of the Great Spirit (God Almighty) and His Divine Providence, **do ordain and initiate this declaration as follows:**

INHERENT RIGHTS, SOVEREIGNTY AND POWER - RESOLUTIONS

BE IT RESOLVED; **that the Black Hills Sioux Nation Treaty Council shall be and act as the sole and final authority on the interpretation of the 1868 Fort Laramie Treaty.** There are no other treaty councils such as the Teton Sioux Nation Treaty Council or similar Councils that are recognized as having true inherent rights or powers, except as may herein be defined; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby recognizes the Treaty Council of the Great Sioux Nation as the sole and final authority of the provisions of the 1851 Fort Laramie Treaty, and other treaties reflecting the members of the seven camp fires, so long as said treaties do not conflict with the stated terms and conditions of the 1868 Fort Laramie Treaty; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby declares that each respective member Tribe shall have their own Treaty Council duly established by and through their respective Tribal traditional process, unencumbered and/or influenced by Indian Reorganization Act established reservation Tribal Councils, so as to avoid conflicts of interest reflecting treaty(s) and/or Tribal interpretations. Furthermore, until such time that the Oyate (People) of the respective Tribes shall determine and submit new names of their respective Treaty Council, their names shall be regarded as follows:

The BRULÉ Sioux Nation Treaty Council
The OGLALA Sioux Nation Treaty Council
The MINICONJOU Sioux Nation Treaty Council
The YANKTONAI Sioux Nation Treaty Council
The HUNKPAPA Sioux Nation Treaty Council
The BLACKFEET Sioux Nation Treaty Council
The CUTHEAD Sioux Nation Treaty Council
The TWO KETTLE Sioux Nation Treaty Council
The SANS ARCS Sioux Nation Treaty Council
The SANTEE Sioux Nation Treaty Council
The ARAPAHO Sioux Nation Treaty Council

BE IT FURTHER RESOLVED; that each Tribal Treaty Council shall select by and through a traditional process, two or three members to the Black Hills Sioux Nation Treaty Council.

Said members must also be duly qualified by and through such rules and regulations that may be established and amended from time to time, and approved by a majority of the then current members of the Black Hills Sioux Nation Treaty Council; and

BE IT FURTHER RESOLVED; that treaty delegation members must prove their inherent Tribal rights, prior to their acceptance as Treaty delegates by providing a copy of their family tree. Additionally, no treaty delegate may be in the employ or service of the United States of America, or its sub-agencies, nor of their respective Tribe. Furthermore, no treaty delegate may maintain a dual enrollment or allegiance with multiple Tribes; and

BE IT FURTHER RESOLVED; that each respective Tribal Treaty Council, when established by and through their specific traditional process, shall hereinafter act as the treaty representatives for their respective Tribes, subject only to the treaty interpretations of the Black Hills Sioux Nation Treaty Council; and

BE IT FURTHER RESOLVED; that each respective Tribal Treaty Council, by and through their inherent rights and authority, shall act as their own respective Tribal Chief Council, thereby having full power and authority of review, modifications, veto and affirmations of any and all actions past, present and future taken by all Chairman's and Tribal Councils of member reservations. This inherent authority shall include the review and modifications of any and all tribal law and ordinances reflecting law inherent by the 1868 Treaty. This authority shall extend to overseeing and enforcing fair and equable elections of Tribal Councils. This authority extends to police enforcement and oversight. This authority includes the maintenance of Tribal Courts that now and hereafter effects their respective Indian Reservations.

BE IT FURTHER RESOLVED; that each Tribal Treaty Council, through their respective representatives, shall participate in all negotiations, claims and/or resolutions with the United Nations, United States, Secretary of Interior and/or its sub-agencies (BIA) by and through the Black Hills Sioux Nation Treaty Council; and

BE IT FURTHER RESOLVED; that each respective Tribal Treaty Council shall participate and/or oversee of all Tribal transactions, whether public or private, and shall have final approval on all transaction, agreements, resolutions or ordinances, with respect to same affecting their respective Tribe only. Provide d that said transactions, agreements, resolutions or ordinances do not alter, amend, modify or reinterpret the 1851 and/or the 1868 Fort Laramie Treaty; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council makes demands for direct representation of its own choosing in both houses of the US Congress such as other Territories and Commonwealths currently have (Puerto Rico, Guam, Virgin Islands, etc.).

Said representation shall be unencumbered and/or influenced by Indian Reorganization Act established reservation Tribal Councils, nor the United States of America; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council shall seek its own seat, representing its own member Tribes, in the United Nations; and

HE SAPA (BLACK HILLS - RESOLUTIONS

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby declares that the **HE SAPA (BLACK HILLS) IS NOT FOR SALE**, nor shall it be; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby declares that no part (principal or interest) of any proposed settlement funds (Docket 74A & 74B) for the sale of Black Hills may be accepted by any Tribe, without a vote of the three quarters of the male population of each of the member Tribes, pursuant to **Article 12 of the Fort Laramie Treaty of 1968**; and

BE IT FURTHER RESOLVED; that the He Sapa (Black Hills) has always been in the possession of the member Tribes of the Black Hills Sioux Nation Treaty Council, nor does the Black Hills Sioux Nation Treaty Council relinquish any inherent/Treaty rights of ownership by IRA established Tribal Councils, United States of America laws or acts of congress or otherwise; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council will hold meetings with the Federal and State Governments respecting a transitional timeline for the timely return of He Sapa (Black Hills); and

BE IT FURTHER RESOLVED; the Black Hills Sioux Nation Treaty Council hereby makes demand of payment for all removal or extracted minerals, timber and the like natural resources taken out of He Sapa (Black Hills). Fair market value shall be determined by mutually agreed to independent appraisers; and

TREATY LAND ISSUES (MINING, CESSION, ETC.) - RESOLUTIONS

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby condemns any discussions reflecting any mineral extraction of a kind (mining, drilling, fracking, and otherwise) , whether from the soils or sub-surface waters without first having an agreed upon independent environmental impact study and a separate medical impact study to include feasibility studies outlining best and worst scenarios of remediation in the event of varying degrees of potential contamination incidents; and

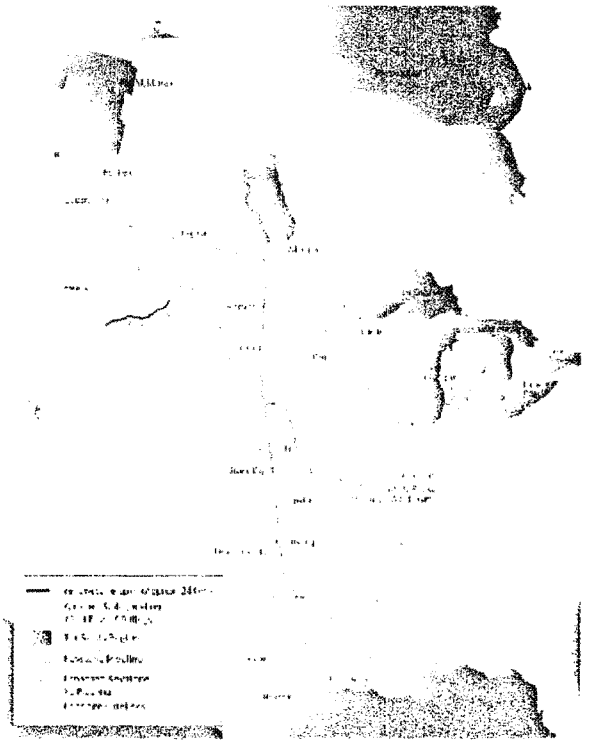
BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby condemns any discussions reflecting any oil or gas pipeline, whether above or underground, without first having an agreed upon independent environmental impact study and a separate medical impact study to include feasibility studies outlining best and worst scenarios of remediation in the event of varying degrees of potential contamination incidents; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby prohibits any and all construction of any oil pipelines (Trans Canada, Tar Sands, Keystone XL, Etc.) within the 1868 Treaty Territory as defined by Article 5, of the 1851 Treaty of Fort Laramie, Article 2 of the 1868 Treaty of Fort Laramie.

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby precludes any cession of land to the Federal or State Government(s) for any purpose, including any proposed Tribal National Parks, etc; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council will do whatever is necessary in order to protect its remaining land and mineral base, including legal actions for the health, safety and welfare of the people.

KEYSTONE PIPE MAP



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FINANCIAL - RESOLUTIONS

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council, at the direct request of the Delegates of the Oglala Sioux Nation Treaty Council, hereby declares the Oglala Sioux Tribe presently under the current management of the IRA established Tribal Council, to be bankrupt and makes demand that it be placed in receivership until such time that it can demonstrate proper and sufficient fiscal management; and

BE IT FURTHER RESOLVED; that the United States of America, by and through its appropriate agencies, perform such audits as necessary, and seek accountability to the level of criminal prosecutions, if necessary, so as to satisfy the Delegates of the Oglala Sioux Nation Treaty Council; and

BE IT FURTHER RESOLVED; that the United States Federal Government is to provide direct funding, not through Tribal Councils, for the maintenance and support of each Treaty Council so named as an authorized member Treaty Council within this Declaration; and

EDUCATION - RESOLUTIONS

BE IT FURTHER RESOLVED; that each respective member Treaty Council, by and through their selected School Boards or Committees shall have final approval of all publically funded schools and/or educational institutes on staffing, curriculum, rules, regulations, disciplinary procedures and protocol for addressing any and all grievances of staff, students and the general public at large; and

BE IT FURTHER RESOLVED; that each school located on reservations shall conduct Lakota language studies as part of the general curricula; and

MEDICAL CARE - RESOLUTIONS

BE IT FURTHER RESOLVED; that the Indian Health Service (IHS) hospital of Pine Ridge Reservation reopen their Intensive Care Unit (ICU) immediately with adequate care and staffing; and

BE IT FURTHER RESOLVED; that each of the Indian Health Service Facilities serving Black Hills Sioux Nation Treaty Council member Tribes be reevaluated by both Tribal and US Federal appropriate officials, with follow-up reports, to include recommendations, submitted to each respective Treaty Council for further appropriate action; and

HUMAN/CIVIL RIGHTS VIOLATIONS - RESOLUTIONS

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby declares the a "Bill Of Rights" of all people, whether resident or not, whether transient or not, who may come within the territorial boundaries or limits of any member Tribes the following:

Treaty Councils and Tribal Councils in the exercising of its inalienable rights, inherent powers and sovereignty, shall not make any tribal law, nor shall any Judiciary enforce any tribal, state or federal law that:

1. Prohibits the full exercise of culture, spirituality or any other religious sect, or abridging the freedom of speech, or of the press, or the right of the people to peaceably assemble and to petition for redress of grievances;

2. Violates the right of the people to be secure in their persons, houses, papers, and effects against unreasonable search and seizures; nor issue warrants, but first upon probable cause, supported by oath or affirmation, and particularly describing the place to be searched and the person or thing to be seized. Evidence of probable cause shall be and presented at all arraignments;

3. Subjects any person for the same offense to be twice put in jeopardy, notwithstanding conflicting or concurring jurisdictions;

4. Compels any person in any criminal case to be a witness against himself;

5. Takes any private property for a public use without first due process of law by and through eminent domain proceedings, subject to just compensation determined by mutually agreed upon independent appraisers, and based upon highest and best use evaluations;

6. Denies to any person in a criminal proceeding the right to a speedy and public trial, to be informed of the nature and cause of the accusation at arraignment, to be confronted with the witnesses against the person, to have compulsory process for obtaining witnesses in the person's favor, and to be provided the assistance of counsel for his defense for all offences that may impose confinement, even though he/she may not afford their own;

7. Requires excessive bail, denial of bail (except in capital cases), impose excessive fines, inflicts cruel and unusual punishments;

8. Denies to any person within its jurisdiction the equal protection of its laws or deprive any person of life, liberty or property without first due process of law;

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9. Adopts any bill of attainder or ex post facto law; or

10. Denies to any person accused of an offense punishable by imprisonment the right, upon request, to a trial by jury of not less than six (6) persons.

11. Denies the right of the people legal representation, whether civil or criminal, through any and all phases of adjudication; and

12. Makes or enforces any laws that abridges the privileges or immunities of citizens of the United States or members of Tribes; that deprives any person of life, liberty, or property, without first due process of law; or denies to any person within its jurisdiction the equal protection of the laws as provided by the 1851 and 1868 treaties.

13. Establishes slavery or involuntary servitude, except as a punishment for crime whereof the party shall have been first duly convicted, within Tribal jurisdictions, or any place subject to their jurisdiction.

BE IT FURTHER RESOLVED; that Treaty Councils and the people enjoy sovereignty, not Tribal Councils. Tribal Councils and/or members enjoy legislative immunity within the framework of the Tribal Constitution and Code of Ethics established for the Council. Absent a Code of Ethics, the Tribal Council is without immunity.

BE IT FURTHER RESOLVED; that Prosecutors are mandated to the sole practice of defending the Oyate's (People's) human/civil rights, including those individuals accused of committing criminal offences of a kind. Any and all prosecutions for alleged criminal offences are exclusively confined to those offences that violate the general law and ordinances against the Oyate.

BE IT FURTHER RESOLVED; that all service and process of all legal documents, without exception, regardless of nature or content, shall be held to the strictest standards of attorney/client privilege and confidentiality, and shall use the United States Postal System or personal delivery, as may be determined by the sender. Upon prior mutual consent, email or facsimile may be used; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby asserts its inherent rights and powers to make its own choice of legal representation, State or Federally licensed or not, in any and all legal jurisdictions, *pro hoc vice*, of which the outcome of litigation of a kind may have an effect of an interest of the Black Hills Sioux Nation Treaty Council. Said *pro hoc vice* representation may, but without necessity, have the assistance of locally licensed counsel; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council hereby asserts its inherent rights and powers to protect any of its Tribal members both domestically and abroad, in that each member, when confronted with legal issues, reserves the right to make its own choice of legal representation. Said choice includes the right to choose a Tribally licensed Lay Advocate, State or Federally licensed or not, in any and all legal jurisdictions, *pro hoc vice*, of which the outcome of litigation of a kind may have a personal effect of an interest of said individual member. the Black Hills Sioux Nation Treaty Council. Said *pro hoc vice* representation may, but without necessity, have the assistance of locally licensed counsel; and

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council, at the direct request of the Delegates of the Oglala Sioux Nation Treaty Council, hereby respectfully makes demand for a permanent US Federally protected "**CIVIL RIGHTS COMMISSION**" based on location of the Pine Ridge Indian Reservation, and other Reservations as the need may become apparent, for the duration of time as the respective local Treaty Council shall determine it no further needed.

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council considers William J. Bielecki, Sr., and his wife Barbara as friends of the Sioux Oyate (People), and traditionally adopted into the Oglala Sioux Nation as of 2010, and shall forever be allowed to reside on the Pine Ridge Indian Reservation for as long as there shall remain peace. Both shall be considered in protective status pursuant Oglala Lakota Tribal traditions and customs.

BE IT FURTHER RESOLVED; that the Black Hills Sioux Nation Treaty Council has appointed William J. Bielecki, Sr., as the Black Hills Sioux Nation Treaty Council's chief legal representative, and both shall be considered in protective status pursuant Tribal traditions and customs, until further notice from Council.

CERTIFICATION

Executed on the part of the current delegate members of the Black Hills Sioux Nation Treaty Council by unanimous consent, and in witness thereof, by the authority of and being thereunto duly authorized pursuant the 1851 and 1868 Fort Laramie Treaties, I hereby subscribe my name below at Pine Ridge Indian Reservation, South Dakota 57770, the **12th day of October, in the year A. D. 2014.**

Floyd (Looks For Buffalo) Hand, Naca'
Delegate

Vincent Black Feather, Naca'
Delegate

Richard Iron Cloud, Naca'
Delegate

Black Hills Sioux Nation Treaty Council
[redacted]

William J. Bielecki, Sr., Counsel
[redacted]

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CERTIFICATE OF SERVICE

The undersigned does hereby certify that he has caused to be served a true and correct copy of the above stated matter "**DECLARATION TO INVOKE INHERENT RIGHTS AND AUTHORITY OVER MINERAL EXPLORATION AND EXTRACTION; AND OVER ENERGY AND FUEL PIPELINES OF A KIND; AND THE UNAUTHORIZED CEDING OF LAND IN THE NAME OF PARKS (Tribal National Park) UNDER THE 1851 AND 1868 FORT LARAMIE TREATIES UNDER THE 1851 AND 1868 FORT LARAMIE TREATIES**". upon the person(s) below designated. each on the date below shown. by the method indicated next to their name. to wit:

FEDERAL OFFICIALS

The Hon. Barack H. Obama President of the United States of America The White House 1600 Pennsylvania Avenue NW Washington. DC 20500	☐ Personal Service. hand delivery ☒ Prepaid First class U.S. Certified Mail. receipt requested. last known address ☐ Prepaid First class U.S. Regular Mail. last known address ☐ Email ☐ Facsimile
The Hon. Senator John Thune United States Senate SR-493 Washington. DC 20510	☐ Personal Service. hand delivery ☒ Prepaid First class U.S. Certified Mail. receipt requested. last known address ☐ Prepaid First class U.S. Regular Mail. last known address ☐ Email ☐ Facsimile
The Hon. Senator Tim Johnson 136 Hart Senate Office Building Washington. DC 20510	☐ Personal Service. hand delivery ☒ Prepaid First class U.S. Certified Mail. receipt requested. last known address ☐ Prepaid First class U.S. Regular Mail. last known address ☐ Email ☐ Facsimile
U.S. Rep. Kristi Noem 1323 Longworth House Office Building Washington. DC 20515	☐ Personal Service. hand delivery ☒ Prepaid First class U.S. Certified Mail. receipt requested. last known address ☐ Prepaid First class U.S. Regular Mail. last known address ☐ Email ☐ Facsimile

The Hon. Sally Jewell
Secretary of Interior
US Dept. of Interior
1849 C Street, N.W.
Washington DC 20240

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BIA Superintendent
Pine Ridge Agency
Bureau of Indian Affairs
P.O. Box 1203
Pine Ridge, SD 57770

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UNITED NATIONS

Mr. Ban Ki-moon
Secretary-General
United Nations Headquarters
New York, NY 10017

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STATE OFFICIALS

Office of the Governor
State of South Dakota
500 East Capitol Avenue
Pierre, SD 57501

South Dakota

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Helena, MT 59624

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State of Minnesota
116 Veterans Service Building
20 W 12th Street
St. Paul, MN 55155

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State of Nebraska
State Capitol
P.O. Box 94848
Lincoln, NE 68509-4848

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State of Wyoming
State Capitol
200 West 24th Street
Cheyenne, WY 82002-0010

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- ☐ Email
- ☐ Facsimile

TRIBAL OFFICIALS

Bryan Brewer, President
Oglala Sioux Tribe
P.O. Box 2070
Pine Ridge, SD 57770

- ☐ Personal Service, hand delivery
- ☒ Prepaid First class U.S. Certified Mail, receipt requested, last known address
- ☐ Prepaid First class U.S. Regular Mail, last known address
- ☐ Email
- ☐ Facsimile

MISCELLANEOUS LEADERS

International World Leaders Respective Addresses & Via Various Media	☐ Personal Service. hand delivery ☐ Prepaid First class U.S. Certified Mail. receipt requested. last known address ☐ Prepaid First class U.S. Regular Mail. last known address ☐ Email ☐ Facsimile

GENERAL PUBLIC

International General Public Via Various Media	☐ Personal Service. hand delivery ☐ Prepaid First class U.S. Certified Mail. receipt requested. last known address ☐ Prepaid First class U.S. Regular Mail. last known address ☐ Email ☐ Facsimile

Dated this 30th day of October , 2014, in the year of our Lord.

RESPECTFULLY SUBMITTED

William J. Bielecki, Sr., Counsel
for Black Hills Sioux Nation Treaty Council

Counsel for BHSNTC
William J. Bielecki, Sr.
P.O. Box 1990
Pine Ridge, SD 57770

Tel: (605) 867-5028
Fax: (605) 867-1006

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TRIBAL
HISTORIC
PRESERVATION
OFFICE

CHEYENNE & ARAPAHO TRIBES

P.O. BOX 167
CONCHO, OKLAHOMA 73022
1800-247-4612 Toll Free
405-422-7484 Telephone

March 15, 2017

Valois Shea
US EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, CO 80202-1129

RE: The EPA Region 8 Underground Injection Control Program has issued Draft permits and a proposed Aquifer Exemption Record of Decision for the Proposed Dewey-Burdock Uranium In-Situ Recovery Site

Dear Consultant:

On behalf of the Cheyenne and Arapaho Tribes, thank you for the notice of the referenced project. I have reviewed your Consultation request under section 106 of the National Historic Preservation Act regarding the project proposal and commented as follows:

At this time, it is determined to be categorized as **No Adverse Effect**; however, if at any time during the project implementation inadvertent discoveries are made that reflect evidence of human remains, ceremonial or cultural objects, historical sites such as stone rings, burial mounds, village or battlefield artifacts, please cease work in area of discovery and notify the THPO Office within 72 hours.

In addition, if inadvertent discoveries are made; pursuant to Title 36 Code of Federal Regulation Part 800.13, as amended; you will also be required to make arrangements for a professional archaeologist to visit the site of discovery and assess the potential significance of any artifacts or features that were unearth. If needed, we will contact the Tribes NAGPRA representatives.

Please contact me at (405) 422-7484 or vrichey@c-a-tribes.org, if you have any questions or concerns. Alternate contact is Micah Demery; she can be reached directly at (405) 422-7416 or mdemery@c-a-tribes.org. Thank you again for your notification!

Best Regards,

Virginia Richey

Virginia Richey
Tribal Historic Preservation Office/THPO Officer

RECEIVED MAR 27 2017

CHAIRMAN
Harold C. Frazier

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TREASURER
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CHEYENNE RIVER SIOUX TRIBE

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TRIBAL COUNCIL MEMBERS

DISTRICT 1
Bernita In the Woods
Bryce In the Woods

DISTRICT 2
Theodore Knife, Jr.

DISTRICT 3
Edward Widow
John Kessler

DISTRICT 4
Jim Pearman
Kevin Keckler
Merrie Miller-White Bull
Mark Knight

DISTRICT 5
Ryman LeBeau
Raymond Uses The Knife
Robert Chasing Hawk
Derek Bartlett

DISTRICT 6
Tuffy Thompson
Wade "Tater" Ward

June 19, 2017

VIA FEDERAL EXPRESS AND EMAIL
Tracking No: 779436943090

United States Environmental Protection Agency
Ms. Valois Shea
Mr. Patrick Rogers
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80202-1129

Re: Tribal Consultation on Dewey-Burdock Uranium Mine

Dear Ms. Shea and Mr. Rogers:

The Cheyenne River Sioux Tribe ("Tribe") formally requests government-to-government consultation with the Environmental Protection Agency ("EPA") leadership on the EPA's Region 8 Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for Dewey-Burdock Uranium In-Situ Recovery Site ("Proposed Permit").

We make this request pursuant to EPA Policy on Consultation and Coordination with Indian Tribes, May 4, 2011 ("EPA Consultation Policy"), and the EPA Policy on Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights, February 2016 ("EPA Treaty Guidance"), and the EPA Responses to Comments on EPA Policy for Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights ("EPA Treaty

The blue represents the thunderclouds above the world where live the thunder birds who control the four winds. The rainbow is for the Cheyenne River Sioux people who are keepers of the Most Sacred Calf Pipe, a gift from the White Buffalo Calf Maiden. The eagle feathers at the edges of the rim of the world represent the spotted eagle who is the protector of all Lakota. The two pipes fused together are for unity. One pipe is for the Lakota, the other for all the other Indian Nations. The yellow hoops represent the Sacred Hoop, which shall not be broken. The Sacred Calf Pipe Bundle in red represents Wakan Tanka – The Great Mystery. All the colors of the Lakota are visible. The red, yellow, black and white represent the four major races. The blue is for heaven and the green for Mother Earth.

Guidance Comments"). Our request is also informed by the conclusions of the U.S. Department of Interior, the U.S. Department of the Army, and the U.S. Department of Justice in their report entitled Improving Tribal Consultation and Tribal Involvement in Federal Infrastructure Decisions, January 20, 2017 ("Improving Tribal Consultation"). We have attached copies of these documents for your reference.

This request is also made in response to the email from Shea Valois to Cheyenne River Sioux Tribal Historic Preservation Officer Steve Vance on May 18, 2017, advising that "the public comment period is different from our Tribal consultation process," and further advising that "[t]he EPA Tribal consultation process is currently in progress for Dewey-Burdock." The email further instructed the Tribe to contact Shea Valois and EPA Region 8 Tribal Advisor, Patrick Rogers to arrange such consultation.

The Cheyenne River Sioux Reservation is located wholly within the exterior boundaries of the State of South Dakota. (A map showing the location of the Tribe's Reservation is enclosed herewith.) However, our rights and trust resources extend beyond our Reservation borders as a matter of federal law. As set forth herein, the Proposed Permit will affect our reserved water rights, our treaty rights, and our historic, spiritual, and cultural resources. For this reason, the EPA must consult with the Tribe on the Proposed Permit.

The Tribe's Rights and Trust Resources in the vicinity of the Dewey-Burdock Uranium Mine

- Reserved water rights: The Tribe enjoys reserved water rights in the Missouri River Basin as well as related groundwater in an amount sufficient to fulfill the purposes of the Reservation. *See Winters v. United States*, 207 U.S. 564 (1908); *Arizona v. California*, 373 U.S. 546, 600 (1963). These reserved water rights are a trust resource for which the United States owes a fiduciary duty. These rights are a function of the Tribe's extant treaty rights. *See Treaty of Fort Laramie with the Sioux, Etc.*, 11 Stat. 749 (Sep. 17, 1851); *Treaty with the Sioux – Brule, Oglala, Mniconjou, Yanktonai, Hunkpapa, Blackfeet, Cuthead, Two Kettle, Sans Arc, and Santee*, 15 Stat. 635 (Apr. 29, 1868). The Tribe retains reserved water rights in off-Reservation waterways and other bodies of water in the Missouri River Basin as well as groundwater and aquifers outside its Reservation.

- Hunting and fishing rights: The Tribe enjoys hunting and fishing rights in Lake Oahe, the reservoir of the Missouri River that are subject to the United States' trust duty. The rights are a function of the Tribe's extant treaty rights and have been preserved by Congress. *See Treaty of Fort Laramie with the Sioux, Etc.*, 11 Stat. 749 (Sep. 17, 1851); *Treaty with the Sioux – Brule, Oglala, Mniconjou, Yanktonai, Hunkpapa, Blackfeet, Cuthead, Two Kettle, Sans Arc, and Santee*, 15 Stat. 635 (Apr. 29, 1868); Act of Sep. 3, 1954, Pub. L. 83-776, 68 Stat. 1191. Numerous off-Reservation tributaries and aquifers belong to the Lake Oahe hydrologic system

and consequently will impact the Tribe's retained hunting and fishing rights in Lake Oahe.

- Historic, spiritual, and cultural resources: There are numerous sites of historic, spiritual, and cultural significance to the Tribe throughout the Tribe's large aboriginal territory, but especially within the boundaries of the lands reserved to the Tribe in the *Treaty of Fort Laramie with the Sioux, Etc.*, 11 Stat. 749 (Sep. 17, 1851). Furthermore, the Tribe's reserved water rights themselves constitute a spiritual and cultural resource in light of the primary role that water plays in Lakota religious sacraments, which require environmentally and ritually pure water. (A map showing the Tribe's 1851 territory is enclosed herewith.)

United States Trust Duty

The United States has a two-fold trust duty to the Tribe. Courts have long recognized the "existence of a general trust relationship between the United States and the Indian people." *United States v. Mitchell*, 463 U.S. 206, 225 (1983). The courts are clear that "any Federal government action is subject to the United States' fiduciary responsibilities toward the Indian tribes." *Nance v. EPA*, 645 F.2d 701, 711 (9th Cir. 1981) (emphasis in original) (citing *Seminole Nation v. United States*, 316 U.S. 268, 297 (1942)).

Secondly, the federal government has a specific trust duty to protect the rights reserved in the 1851 and 1868 Fort Laramie Treaties. The Tribe was a party to the 1851 and 1868 Fort Laramie Treaties, which reserved land and water to the Tribe in order to fulfill the purpose of the Reservation to provide for self-sufficiency. *See Winters v. United States*, 207 U.S. 564 (1908). The reserved water right recognized in the *Winters* doctrine, and reserved for the Tribe, includes the right to clean, safe water. *See, e.g., United States v. Gila River Irrigation Dist.*, 920 F. Supp. 1444, 1448 (D. Ariz. 1996). Likewise, the Tribe has retained its right to hunt, fish, and gather on the Reservation and in Lake Oahe. Act of September 3, 1954, Pub. L. 83-766, 68 Stat. 1191; *South Dakota v. Bourland*, 508 U.S. 679, 697 (1993) (noting that Congress explicitly has reserved the Cheyenne River Sioux Tribe's original treaty rights, including the right to hunt and fish, on Lake Oahe); *see also United States v. Dion*, 476 U.S. 734, 738 (1986) ("Indians enjoy exclusive treaty rights to hunt and fish on lands reserved to them . . . ."). The Tribe's water rights include a right to water that is sufficient in amount and quality to support hunting and fishing rights. *United States v. Adair*, 723 F.2d 1394, 1409, 1411 (9th Cir. 1983). As a result of the federal government's trust responsibilities to the Tribe, the EPA must ensure that such trust resources are preserved in any activity that may impact the Tribe's rights, including the Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for Dewey-Burdock Uranium In-Situ Recovery Site.

The United States Must Consult on the Tribe's Rights and Has a Duty to Protect Them

The United States and the EPA's trust relationship does not only extend to the affirmative obligations to protect tribal rights and trust resources, but the United States must also engage in meaningful pre-decisional consultation on projects that will affect the Tribe's treaty rights and trust resources. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (Nov. 6, 2000); EPA Policy for the Administration of Environmental Programs on Indian Reservations (Nov. 8, 1984); EPA Policy on Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights (Feb. 2016).

"In carrying out its treaty obligations with the Indian tribes, the Government is something more than a mere contracting party." *Seminole Nation v. United States*, 316 U.S. 286, 296-67 (1942). Instead, "it has charged itself with moral obligations of the highest responsibility and trust." *Id.* Pursuant to its trust duty, agencies are required to "consult with Indian tribes in the decision-making process to avoid adverse effects on treaty resources." *Klamath Tribes v. United States*, No. 10-2130, 1996 WL 924509 (D. Or. Oct 2, 1996) (quoting *Lac Courte Oreille Band of Indians v. Wisconsin*, 668 F. Supp. 133, 140 (W.D. Wis. 1987); *Ctr. for Biological Diversity v. Salazar*, No. 10-2130, 2011 WL 60000497, at *11 (D. Ariz. Nov. 30, 2011). It is not a discretionary duty. *Ctr. for Biological Diversity*, at *11.

The duty to consult is binding on an agency when the agency has announced a consultation policy, and the Tribes have come to rely on that policy. *Yankton Sioux Tribe v. Kempthorne*, 442 F. Supp. 2d 774, 784 (D. S.D. 2006); *see also Oglala Sioux Tribe v. Andrus*, 603 F.2d 707 (8th Cir. 1979); *Lower Brule Sioux Tribe v. Deer*, 911 F. Supp. 395 (D. S.D. 1995); *Albuquerque Indian Rights v. Lujan*, 930 F.2d 49, 58 (D.C. Cir. 1991); *Indian Educators Fed'n Local 4524 of Am. Fed'n of Teachers, AFL-CIO v. Kempthorne*, 541 F. Supp. 2d 257, 264-65 (D. D.C. 2008). At a minimum, this requires that the agency give fair notice of its intentions, which requires, "telling the truth and keeping promises." *Yankton Sioux Tribe*, 442 F. Supp. 2d at 784 (citing *Lower Brule Tribe*, 911 F. Supp. at 399). An agency's failure to provide tribes with accurate information necessary to meaningfully consult before a decision is made is agency failure to meet its consultation obligation. *Id.* at 785; *see also Cheyenne River Sioux Tribe v. Jewell*, No. 3:15-03072, 2016 WL 4625672 (D. S.D. Sep. 6, 2016). ***Reviewing a Tribe's comments submitted in conjunction with an agency's general invitation for public comments is not sufficient to meet this obligation.***

The federal government has further obligations to tribes under the National Historic Preservation Act ("NHPA") and the Religious Freedom Restoration Act ("RFRA"). The NHPA was enacted to preserve historic resources in the midst of modern projects and requires agencies to fully consider the effects of its actions on historic, cultural, and sacred sites. Section 106 of the NHPA requires that prior to issuance of any federal funding, permit, or license, agencies must take into consideration the effects of that "undertaking" on historic properties. 54 U.S.C. § 306108; 36 C.F.R. § 800.1. The Section 106 process also requires consultation between agencies and Indian Tribes on federally-funded or authorized "undertakings" that could affect sites that are on, or could

be eligible for, listing in the National Register, including sites that are culturally significant to Indian Tribes. 54 U.S.C. § 302706. An agency official must "ensure" that the process provides Tribes with "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties . . . articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." 36 C.F.R. § 800.2(c)(ii)(A). This requirement imposes on agencies a "reasonable and good faith effort" by agencies to consult with Tribes in a "manner respectful of tribal sovereignty." *Id.* 36 C.F.R. § 800.2(c)(2)(ii)(B); *see also id.* § 800.3(f) (any Tribe that "requests in writing to be a consulting party shall be one").

Under RFRA, the "Government shall not substantially burden a person's exercise of religion" unless the Government "demonstrates that application of the burden to the person—(1) is in furtherance of a compelling governmental interest; and (2) is the least restrictive means of furthering that compelling governmental interest." 42 U.S.C. § 2000bb-1(b). Tribal religious practices are significantly tied to oral tradition, ancestral lands, and natural resources.

Significantly, the EPA along with several other departments of the United States Federal Government, entered into a Memorandum of Understanding on Interagency Coordination and Collaboration for the Protection of Indian Sacred Sites on September 23, 2016. The Memorandum acknowledges that federal agencies hold in trust many culturally important sites held sacred by Indian tribes, and federal agencies are responsible for analyzing the potential effects of agency projects carried out, funded, or permitted on historic properties of traditional cultural and religious importance to Indian tribes including sacred sites. Additionally, international law, treaties, and jurisprudence has repeatedly affirmed the right of Free Prior Informed Consent. *See Declaration on the Rights of Indigenous People*, art. 10, United Nations (Mar. 2008). The purpose of Free Prior Informed Consent is to establish bottom up participation and consultation of an Indigenous population prior to the beginning of a development on ancestral land or using resources within the Indigenous population's territory. *Id.*

Tribe's Requests Concerning the Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for Dewey-Burdock Uranium In-Situ Recovery Site

1. The Dewey-Burdock Uranium In Situ Recovery Site Poses a Serious Threat to Tribal Rights that the EPA Must Thoroughly Evaluate

The Dewey-Burdock Uranium Mine is proposed to be sited within the Tribe's 1851 territory and in areas that impact aquifers and tributaries that affect Cheyenne River Sioux Reservation lands and waters. As such, the Dewey-Burdock Uranium Mine will have serious impacts on (a) the Tribe's treaty rights and reserved water rights, (b) the Tribe's cultural resources; and (c) the Tribe's religious exercise, as set forth in further detail below.

a. The Dewey-Burdock Uranium Mine Poses a Serious Threat to the Tribe's Treaty Rights and Reserved Water Rights

The proposed Dewey-Burdock Uranium Mine is proposed to be sited in areas that affect aquifers, watersheds, and tributaries that are hydrologically connected to the waters that affect Cheyenne River Sioux Reservation lands and waters. These lands and waters have been guaranteed to us by Treaty, and the United States must act as our fiduciary in protecting them as a matter of federal law as set forth above. As set forth in our preliminary comment letter, the Dewey-Burdock Uranium Mine has significant potential to contaminate the reserved water rights of the Tribe and to render our Reservation uninhabitable. The EPA's current analysis of the Dewey-Burdock Uranium Mine fails to consider those issues and exposes substantial problems with the economic viability of the project proponent.

In light of its fiduciary duty to the Cheyenne River Sioux Tribe, until the EPA has thoroughly evaluated the impacts to the Tribe, any authorizations of the Dewey-Burdock Uranium Mine violate federal law and would be arbitrary and capricious.

b. The Dewey-Burdock Uranium Mine Poses a Serious Threat to the Tribe's Cultural Resources

The site of the proposed mine is within the Tribe's 1851 territory. Specifically it is in the vicinity of the Black Hills, among the most sacred sites to the Lakota people. Our people lived in this area, hunted in this area, and made religious pilgrimages in this area from time immemorial. Our Tribal Historic Preservation Officer advises that the site of the proposed mine has the potential to contain numerous sites of cultural and spiritual significance. While it is our understanding that some efforts have been made to identify cultural resources in the project area, the EPA has not consulted with the Tribe pursuant to the National Historic Preservation Act.

c. The Dewey Burdock Uranium Mine Poses a Serious Threat to the Tribe's Religious Exercise

Water is an essential aspect of the Lakota religion. It figures prominently in our theology as the origin of our creation as Lakota people and as a key aspect of how we became who we are today. In addition, water is a key component of many of our religious ceremonies. While many or our religious sacraments require either water or ritual deprivation thereof, water is an essential component of one of our most important religious sacraments, the *inipi* ceremony or sweat lodge. Importantly, this sacrament requires that we use only water that is both environmentally and ritually pure. As noted above, the Tribe has very limited access to water on the Reservation and relies solely on water drawn from the confluence of the Cheyenne River and the Missouri River at Lake Oahe for its drinking water and which represents reserved water rights of the Tribe. Upstream contamination of these waters in which the Tribe owns reserved water rights has the very serious potential to affect the Tribe's and its members' religious exercise in violation of the Religious Freedom Restoration Act.

2. The EPA must engage in meaningful government-to-government consultation with the Tribe

As described herein, the Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for the Dewey-Burdock Uranium In-Situ Recovery Site poses serious threats to the Tribe's reserved water rights, hunting and fishing rights, cultural and spiritual sites, and religious exercise in ways that implicate federal statutes and treaty rights. As further described herein, as a function of its fiduciary duty to the Tribe and as a matter of federal law, the EPA must engage in meaningful government-to-government consultation with the Tribe on the issues discussed herein and other issues that may arise.

On May 12, 2017, officials of the Cheyenne River Sioux Tribe, including myself, attended the public hearing on the Dewey-Burdock Uranium Mine in Rapid City, South Dakota. At that hearing, our representatives and other representatives of the *Oceti Sakowin* (the Great Sioux Nation) provided testimony consistent with the comments herein. Furthermore, at that hearing, the EPA's representative confirmed explicitly that the EPA does not consider any public hearing or written public comments such as these to constitute meaningful government-to-government consultation with the Tribe and that we can expect to have further contact with the EPA. In addition, Tribal Historic Preservation Officer Steve Vance received an email from you on May 18, 2017 advising that "the public comment period is different from our Tribal consultation process," and further advising that "[t]he EPA Tribal consultation process is currently in progress for Dewey-Burdock."

The Tribe looks forward to such consultation and believes that such consultation must, ***at a minimum***, encompass the following components required both by the laws cited above and by the EPA's policies and guidance:

- <u>Provide the Tribe with and explain all pertinent information concerning the impact on the Tribe's rights before consultation in a timely manner.</u> *Yankton Sioux Tribe*, 442 F. Supp. 2d at 784 (requiring agencies to provide tribes with accurate information necessary to consult before a decision is made); EPA Consultation Policy at p. 2 (requiring EPA to provide "sufficient information for tribal officials to . . . understand how to provide informed input); EPA Treaty Guidance at p. 3 ("EPA should explain the proposed action, provide any appropriate technical information that is available, and solicit input about any resource-based treaty rights."); *see also* EPA Treaty Guidance Comments at p. 5 ("For any consultation it is important that the technical aspects of the EPA action are explained.").

- <u>Coordinate with the Tribe before consultation begins, especially with development of an agreement on consultation timelines.</u> *See Yankton Sioux Tribe*, 442 F. Supp. 2d at 784 (requiring pre-decisional consultation).

- Consult only with Tribal representatives who have been authorized to engage in government-to-government consultation by the Tribal government. EPA Treaty Guidance at p. 3 ("It is important that EPA work to ensure that consultation occurs with the appropriate tribally identified officials."); *see also* Treaty Guidance Comments at p. 4 ("Participation by particular tribal officials during EPA consultations with tribes is at the discretion of the involved tribes.").

- Make every effort to conduct Tribal consultation at the seat of Tribal government, Eagle Butte, South Dakota or elsewhere on the Cheyenne River Sioux Reservation. EPA Consultation Policy at p. 4 ("EPA attempts to honor the tribal government's request with consideration of the nature of the activity, past consultation efforts, available resources, timing considerations, and all other relevant factors.").

- Ensure that federal participants in Tribal consultation have actual decision-making authority. Improving Tribal Consultation at p. 17 ("While staff-level dialogue is important, government-to-government consultations should involve the participation of the Federal agency decision-makers. . . .").

- Provide written confirmation that the agency has considered tribal comments and concerns and the agency's response, whether positive or negative. EPA Consultation Policy at p. 5 ("EPA provides feed back to the tribe(s) involved in the consultation to explain how their input was considered in the final actions. This feedback should be a formal, written communication from a senior EPA official involved to the most senior official involved in the consultation.").

- Obtain resolution of approval from the Tribe that the agency has satisfactorily consulted with the Tribe and the Tribe agrees with the agency's response to Tribal concerns in each instance. Improving Tribal Consultation at p. 18 (advising that agencies should "[s]eek to fully understand Tribal concerns, reach a consensus where possible, and when necessary, explain clearly why Tribal concerns could not be addressed").

Significantly, the EPA must be aware that consultation required under the Section 106 National Historic Preservation Act concerning cultural and spiritual resources, while important, is separate from and not sufficient to meet the United States' obligation to consult about reserved water rights, treaty rights, or other religious freedom issues.

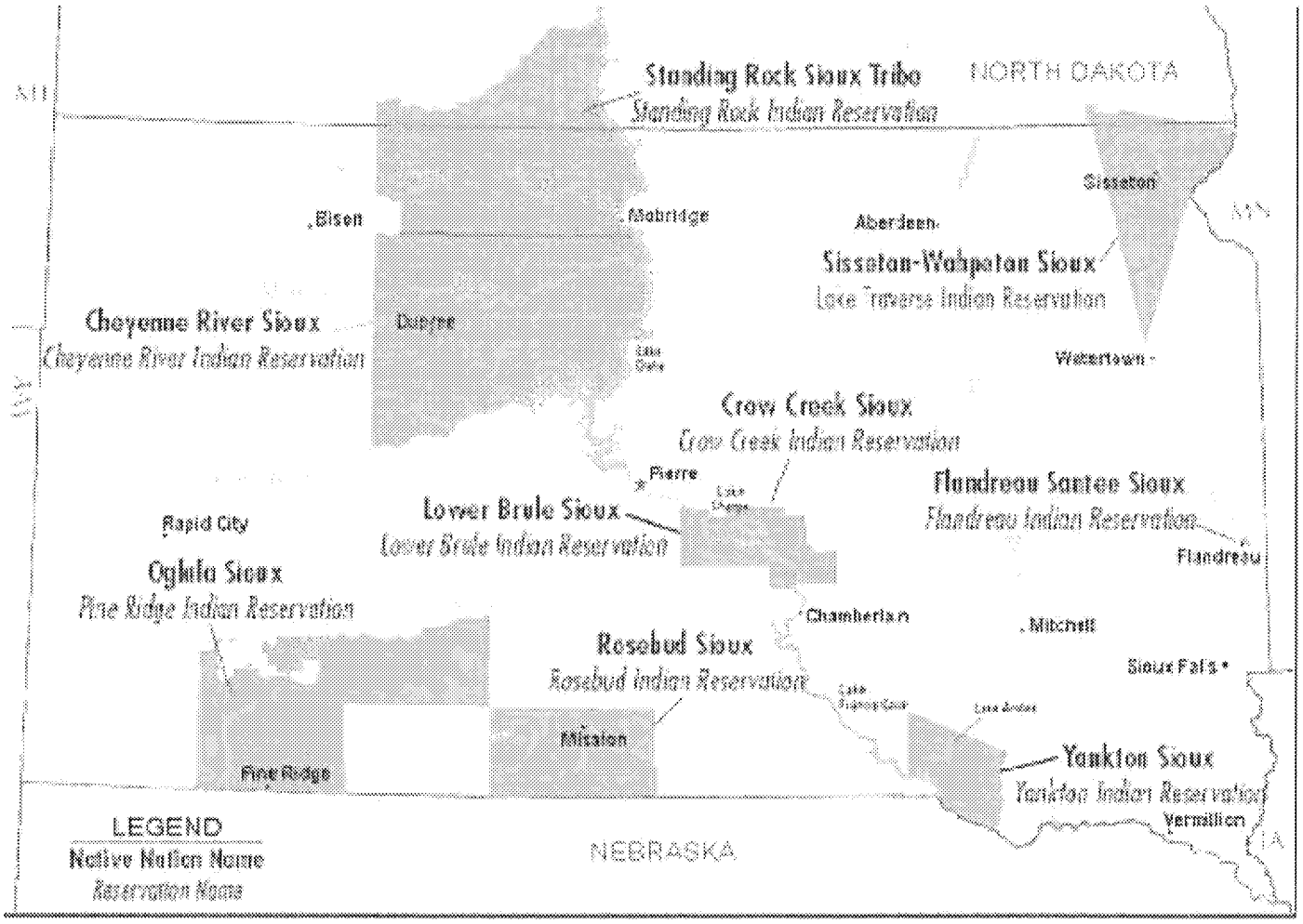
In light of the foregoing, the Cheyenne River Sioux Tribe formally requests that the EPA engage in face-to-face government-to-government consultation on the Proposed Permit. I have been designated as the Tribe's authorized representative for consultation, but I hope to secure the participation of members of the Tribal Council as well. Further, as discussed above, it is the Tribe's desire that consultation take place at our Tribal Headquarters in Eagle Butte, South Dakota.

In addition to this request for consultation, the Tribe's ***preliminary*** comments on the Proposed Permit addressing some of the legal principles and facts discussed herein has been sent to you under separate cover.

Please contact our attorney, Nicole Ducheneaux, at 402-333-4053 to arrange this consultation.

Very Truly Yours,

Harold Frazier
Chairman, Cheyenne River Sioux Tribe


Standing Rock Sioux Tribe
Standing Rock Indian Reservation
NORTH DAKOTA
Eisen
Mobridge
Aberdeen
Sisseton
Sissetan-Wahpetan Sioux
Lake Traverse Indian Reservation
Cheyenne River Sioux
Cheyenne River Indian Reservation
Dupree
Watertown
Crow Creek Sioux
Crow Creek Indian Reservation
Pierre
Flandreau Santee Sioux
Flandreau Indian Reservation
Flandreau
Rapid City
Lower Brule Sioux
Lower Brule Indian Reservation
Oglala Sioux
Pine Ridge Indian Reservation
Chamberlain
Mitchell
Sioux Falls
Rosebud Sioux
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Mission
Pine Ridge
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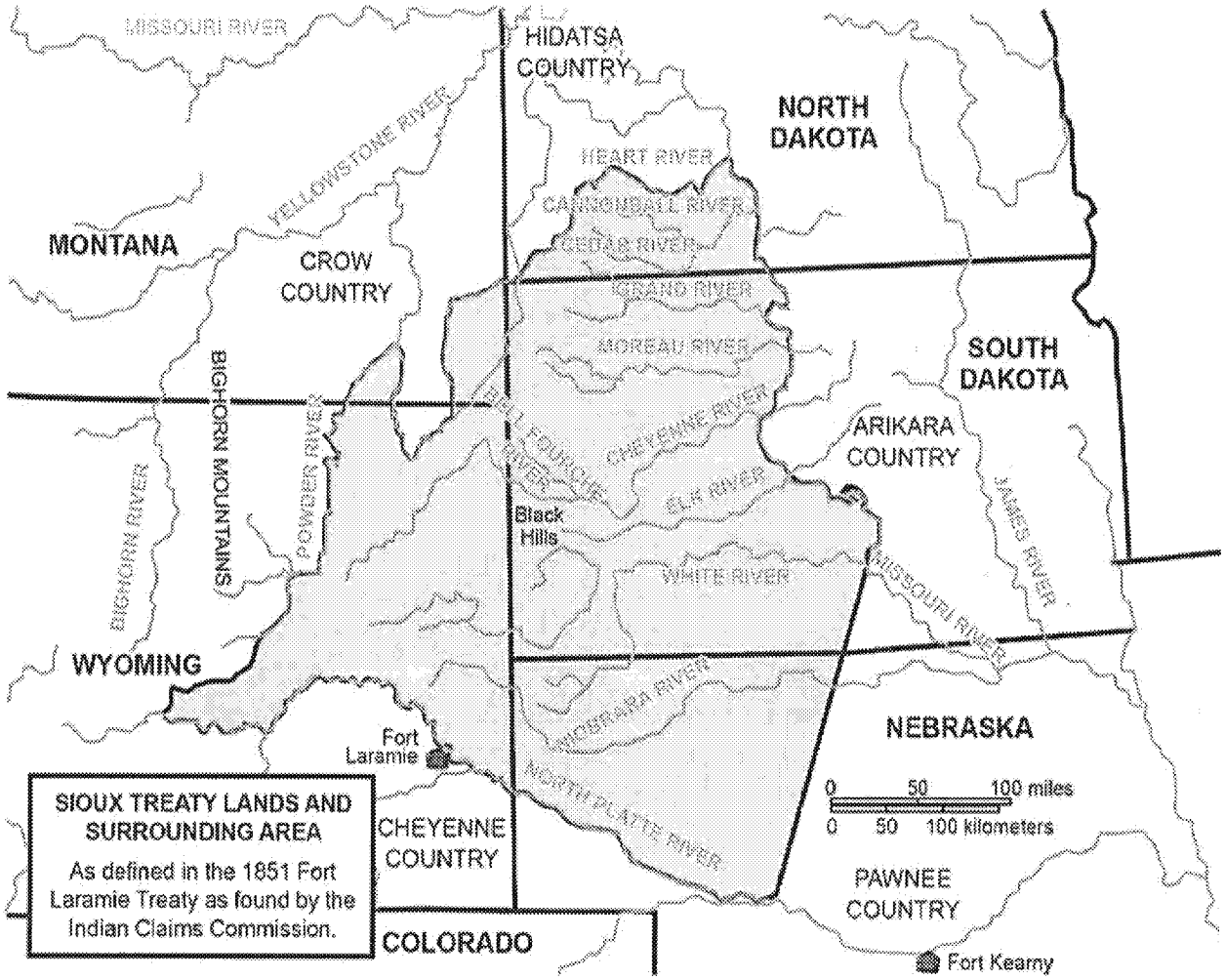
Native Nation Name
Reservation Name
NEBRASKA


MISSOURI RIVER
HIDATSA COUNTRY
NORTH DAKOTA
YELLOWSTONE RIVER
HEART RIVER
CANNONBALL RIVER
CEDAR RIVER
MONTANA
CROW COUNTRY
GRAND RIVER
MOREAU RIVER
SOUTH DAKOTA
BIGHORN MOUNTAINS
POWDER RIVER
CHEYENNE RIVER
ARIKARA COUNTRY
BIGHORN RIVER
ELK RIVER
Black Hills
WHITE RIVER
JAMES RIVER
MISSOURI RIVER
WYOMING
NIOBRARA RIVER
NEBRASKA
Fort Laramie
NORTH PLATTE RIVER
0 50 100 miles
0 50 100 kilometers
SIOUX TREATY LANDS AND SURROUNDING AREA
As defined in the 1851 Fort Laramie Treaty as found by the Indian Claims Commission.
CHEYENNE COUNTRY
PAWNEE COUNTRY
COLORADO
Fort Kearny

EPA POLICY

ON

CONSULTATION AND COORDINATION

WITH

INDIAN TRIBES

May 4, 2011

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I. Policy Statement

EPA's policy is to consult on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests. Consultation is a process of meaningful communication and coordination between EPA and tribal officials prior to EPA taking actions or implementing decisions that may affect tribes. As a process, consultation includes several methods of interaction that may occur at different levels. The appropriate level of interaction is determined by past and current practices, adjustments made through this Policy, the continuing dialogue between EPA and tribal governments, and program and regional office consultation procedures and plans.

This Policy establishes national guidelines and institutional controls for consultation across EPA. EPA program and regional offices have the primary responsibility for consulting with tribes. All program and regional office consultation plans and practices must be in accord with this Policy. This Policy seeks to strike a balance between providing sufficient guidance for purposes of achieving consistency and predictability and allowing for, and encouraging, the tailoring of consultation approaches to reflect the circumstances of each consultation situation and to accommodate the preferences of tribal governments. The consultation process is further detailed in Section V of this document.

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II. Background

To put into effect the policy statement above, EPA has developed this proposed *EPA Policy on Consultation and Coordination with Indian Tribes* (Policy). The Policy complies with the Presidential Memorandum (Memorandum) issued November 5, 2009, directing agencies to develop a plan to implement fully Executive Order 13175 (Executive Order). The Executive Order specifies that each Agency must have an accountable process to ensure meaningful and timely input by tribal officials in the development of regulatory policies that have tribal implications.

This Policy reflects the principles expressed in the *1984 EPA Policy for the Administration of Environmental Programs on Indian Reservations* (1984 Policy) for interacting with tribes. The 1984 Policy remains the cornerstone for EPA's Indian program and "assure[s] that tribal concerns and interests are considered whenever EPA's actions and/or decisions may affect" tribes (1984 Policy, p. 3, principle no. 5).

One of the primary goals of this Policy is to fully implement both the Executive Order and the 1984 Indian Policy, with the ultimate goal of strengthening the consultation, coordination, and partnership between tribal governments and EPA.

The most basic result of this full implementation is that EPA takes an expansive view of the need for consultation in line with the 1984 Policy's directive to consider tribal interests whenever EPA takes an action that "may affect" tribal interests.

The Policy is intended to be implemented using existing EPA structures to the extent possible. The use of current EPA business processes, such as the Action Development Process, National and Regional Tribal Operations Committees, and tribal partnership groups is purposeful so that consultation with tribal governments becomes a standard EPA practice and not an additional requirement.

The issuance of this Policy supports and guides the development and use of program and regional office consultation plans and practices consistent with this Policy.

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III. Definitions

A. "Indian tribe" or "tribe" means an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to the Federally Recognized Indian Tribe List Act of 1944, 25 U.S.C. 479a.

B. "Tribal official" means an elected, appointed, or designated official or employee of a tribe.

C. "Indian country" means:

1. All land within limits of any Indian reservation[1] under the jurisdiction of the United States government, notwithstanding the issuance of any patent, and, including rights-of-way running through the reservation;

2. All dependent Indian communities within the borders of the United States whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a state; and

3. All Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same.

IV. Guiding Principles

To understand both the purpose and scope of the Policy as well as the integration of the Policy, Memorandum, and Executive Order, it is helpful to list principles found in EPA's January 2010 *Plan to Develop a Tribal Consultation and Coordination Policy Implementing Executive Order 13175*:

> EPA's fundamental objective in carrying out its responsibilities in Indian country is to protect human health and the environment.
>
> EPA recognizes and works directly with federally recognized tribes as sovereign entities with primary authority and responsibility for each tribe's land and membership, and not as political subdivisions of states or other governmental units.
>
> EPA recognizes the federal government's trust responsibility, which derives from the historical relationship between the federal government and Indian tribes as expressed in certain treaties and federal Indian law.

[1] EPA's definition of "reservation" encompasses both formal reservations and "informal" reservations, i.e., trust lands set aside for Indian tribes. *See for example* Oklahoma Tax Comm'n v. Sac and Fox Nation, 508 U.S. 114, 123 (1993); 56 Fed. Reg. 64876, 64881 (1991); or 63 Fed. Reg. 7254, 7258 (1998).

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EPA ensures the close involvement of tribal governments and gives special consideration to their interests whenever EPA's actions may affect Indian country or other tribal interests.

When EPA issues involve other federal agencies, EPA carries out its consultation responsibilities jointly with those other agencies, where appropriate.

In addition, it is helpful to note the distinction between this Policy, federal environmental laws pertaining to public involvement, and Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. Under this Policy, EPA consults with federally recognized tribal governments when Agency actions and decisions may affect tribal interests. EPA also recognizes its obligations to involve the public as required by federal environmental laws. Finally, EPA recognizes the need to be responsive to the environmental justice concerns of non-federally recognized tribes, individual tribal members, tribal community-based/grassroots organizations and other indigenous stakeholders.

V. Consultation

A. ***The Consultation Process.*** To the fullest extent possible, EPA plans to use existing EPA business operations to put this Policy into effect.

Tribal officials may request consultation in addition to EPA's ability to determine what requires consultation. EPA attempts to honor the tribal government's request with consideration of the nature of the activity, past consultation efforts, available resources, timing considerations, and all other relevant factors.

Consultation at EPA consists of four phases: Identification, Notification, Input, and Follow-up:

1. **Identification Phase**: EPA identifies activities that *may be* appropriate for consultation, using the mechanisms described in section B.2, below. The identification phase should include a determination of the complexity of the activity, its potential implications for tribes, and any time and/or resource constraints relevant to the consultation process. This phase should also include an initial identification of the potentially affected tribe(s).

2. **Notification Phase**: EPA notifies the tribes of activities that may be appropriate for consultation.

Notification can occur in a number of ways depending on the nature of the activity and the number of tribes potentially affected. For example, EPA may send out a mass mailing to all tribes, may contact the tribal governments by telephone, or provide notice through other agreed upon means. EPA normally honors tribal preferences regarding the specific mode of contact.

Notification includes sufficient information for tribal officials to make an informed decision about the desire to continue with consultation and sufficient information to understand how to provide informed input.

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Notification should occur sufficiently early in the process to allow for meaningful input by the tribe(s).

3. **Input Phase:** Tribes provide input to EPA on the consultation matter. This phase may include a range of interactions including written and oral communications including exchanges of information, phone calls, meetings, and other appropriate interactions depending upon the specific circumstances involved. EPA coordinates with tribal officials during this phase to be responsive to their needs for information and to provide opportunities to provide, receive, and discuss input. During this phase, EPA considers the input regarding the activity in question. EPA may need to undertake subsequent rounds of consultation if there are significant changes in the originally-proposed activity or as new issues arise.

4. **Follow-up Phase:** EPA provides feedback to the tribes(s) involved in the consultation to explain how their input was considered in the final action. This feedback should be a formal, written communication from a senior EPA official involved to the most senior tribal official involved in the consultation.

B. *What Activities May Involve Consultation?*

1. **General Categories of Activities Appropriate for Consultation:** The broad scope of consultation contemplated by this Policy creates a large number of actions that *may* be appropriate for consultation.

The following list of EPA activity categories provides a general framework from which to begin the determination of whether any particular action or decision is appropriate for consultation. The final decision on consultation is normally made after examining the complexity of the activity, its implications for tribes, time and/or resource constraints, an initial identification of the potentially affected tribe(s), application of the mechanisms for identifying matters for consultation, described below, and interaction with tribal partnership groups and tribal governments.

The following, non-exclusive list of EPA activity categories are normally appropriate for consultation if they may affect a tribe(s):

- Regulations or rules
- Policies, guidance documents, directives
- Budget and priority planning development
- Legislative comments[2]
- Permits

[2] Legislative comments are a special case where, due to short legislative timeframes, consultation in advance of comment submission may not always be possible. Nevertheless, EPA will strive to inform tribes when it submits legislative comments on activities that may affect Indian country or other tribal governmental interests.

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- Civil enforcement and compliance monitoring actions[3]
- Response actions and emergency preparedness[4]
- State or tribal authorizations or delegations
- EPA activities in implementation of U.S. obligations under an international treaty or agreement.

2. **EPA's Mechanisms for Identifying Matters for Consultation:** The mechanisms EPA uses for identifying matters appropriate for consultation are as follows:

a. Tribal Government-Requested Consultation. Tribal officials may request consultation in addition to EPA's ability to determine what requires consultation. EPA attempts to honor the tribal government's request with consideration of the nature of the activity, past consultation efforts, available resources, timing considerations, and all other relevant factors.

b. Action Development Process (ADP). Early in the process, the lead program office assesses whether consultation is appropriate for the subject action. Its determination is available to tribes in the semiannual Regulatory Agenda as well as in the subset of rules on the Regulatory Gateway accessed through the EPA website.

This Policy is not intended to subject additional Agency actions to the ADP process for the sole purpose of a consultation analysis. Non-ADP actions are subject to consultation analysis through other mechanisms identified within the Policy.

c. National Program Offices and Regional Offices. For those actions and decisions not in the ADP process, program and regional offices also determine if consultation is appropriate under this Policy. EPA's Tribal Consultation Advisors, described below, provide assistance with that determination. Such determination includes coordination with national and/or regional tribal partnership groups.

d. National and Regional Tribal Partnership Groups. EPA meets regularly with a number of national and regional tribal partnership groups. These groups assist in the identification of matters that may be appropriate for consultation.

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[3] Primary guidance on civil enforcement matters involving tribes can be found in "Guidance on the Enforcement Priorities Outlined in the 1984 Indian Policy," and "Questions and Answers on the Tribal Enforcement Process." This guidance is intended to work with the Tribal Consultation Policy in a complementary fashion to ensure appropriate consultation with tribes on civil enforcement matters.

[4] The term "response" as defined under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) includes removals and remedial actions.

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C. *When Consultation Occurs.* Consultation should occur early enough to allow tribes the opportunity to provide meaningful input that can be considered prior to EPA deciding whether, how, or when to act on the matter under consideration. As proposals and options are developed, consultation and coordination should be continued, to ensure that the overall range of options and decisions is shared and deliberated by all concerned parties, including additions or amendments that occur later in the process.

D. *How Consultation Occurs.* There is no single formula for what constitutes appropriate consultation, and the analysis, planning, and implementation of consultation should consider all aspects of the action under consideration. In the case of national rulemaking, a series of meetings in geographically diverse areas may be appropriate. For more routine operational matters, a less formal process may be sufficient.

VI. Managing the Consultation Process

A. Roles and Responsibilities

The following roles and responsibilities have been defined to allow EPA to effectively implement this Policy. These roles and responsibilities reflect the fact that, while oversight and coordination of consultation occurs at EPA headquarters, as a practical matter, much of the actual consultation activity occurs in EPA's program and regional offices. The responsibility for initially analyzing the need for consultation and then subsequently carrying it out, resides with these offices.

1. **Designated Consultation Official:** In addition to being the EPA's National Program Manager for the EPA Tribal Program, EPA's Assistant Administrator for the Office of International and Tribal Affairs (OITA) is the EPA-Designated Consultation Official under the Executive Order. These responsibilities include coordination and implementation of tribal consultation in accordance with this Policy and Agency compliance with the 1984 Indian Policy.

The Designated Consultation Official has the authority for: (1) defining EPA actions appropriate for consultation, (2) evaluating the adequacy of that consultation, and (3) ensuring that EPA program and regional office consultation practices are consistent with this Policy.

Per the Memorandum, the Designated Consultation Official reports annually to OMB on the implementation of the Executive Order.[5] Further, the Designated Consultation Official certifies compliance with the Executive Order for applicable EPA activities. The American Indian Environmental Office (AIEO) is located within OITA and coordinates the operational details of the Policy and compiles consultation-related information for the Designated Consultation Official.

2. **Assistant Administrators:** Assistant Administrators oversee the consultation process in their respective offices including analysis for potential

[5] Report is filed annually by August 3rd.

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consultation and the consultation process. Each program office is directed to prepare a semi-annual agenda of matters appropriate for consultation and a brief summary of consultation that has occurred. The program offices provide this information to AIEO for reporting to OMB. Each office is directed to designate a Tribal Consultation Advisor.

3. **Regional Administrators**: Regional Administrators oversee the consultation process in their respective offices including analysis for potential consultation and the consultation process. Each region is directed to prepare a semi-annual agenda of matters appropriate for consultation and a brief summary of consultation that has occurred. The regions provide this information to AIEO for reporting to OMB. Each region is directed to designate a Tribal Consultation Advisor.

4. **Tribal Consultation Advisors**: Tribal Consultation Advisors (TCAs) assist in identifying matters appropriate for consultation and prepare summary information on consultation activities and provide it to AIEO. TCAs receive and provide advice within their respective program offices and regions on what actions may be appropriate for consultation. TCAs also serve as a point-of-contact for EPA staff, tribal governments, and other parties interested in the consultation process. TCAs are the in-office subject matter experts to assist staff and management in the implementation of the Policy.

B. National Consultation Meeting

OITA/AIEO may convene a periodic National Consultation Meeting to be chaired by the Designated Consultation Official to review the consultation process across the Agency.

C. Reporting

Pursuant to the Memorandum, EPA submits annual progress reports to OMB on the status of the consultation process and actions and provides any updates to this Policy.

D. EPA Senior Management Review

The Designated Consultation Official communicates regularly with the Assistant and Regional Administrators to review the consultation system, to consider any matters requiring senior management attention, and to make adjustments necessary to improve the Policy or its implementation.

EPA plans to receive ongoing feedback on the Policy from all parties to assess its effectiveness and implement improvements.

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EPA Policy on Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights

Introduction

EPA recognizes the importance of respecting tribal treaty rights and its obligation to do so. The purpose of this Guidance is to enhance EPA's consultations under the *EPA Policy on Consultation and Coordination with Indian Tribes* in situations where tribal treaty rights may be affected by a proposed EPA action. Specifically, this Guidance provides assistance on consultation with respect to EPA decisions focused on specific geographic areas when tribal treaty rights relating to natural resources may exist in, or treaty-protected resources may rely upon, those areas.[1] In these instances, during consultation with federally recognized tribes (tribes), EPA will seek information and recommendations on tribal treaty rights in accordance with this Guidance. EPA will subsequently consider all relevant information obtained to help ensure that EPA's actions do not conflict with treaty rights, and to help ensure that EPA is fully informed when it seeks to implement its programs and to further protect treaty rights and resources when it has discretion to do so.[2]

The U.S. Constitution defines treaties as part of the supreme law of the land, with the same legal force as federal statutes. Treaties are to be interpreted in accordance with the federal Indian canons of construction, a set of long-standing principles developed by courts to guide the interpretation of treaties between the U.S. government and Indian tribes.[3] As the Supreme Court has explained, treaties should be construed liberally in favor of tribes, giving effect to the treaty terms as tribes would have understood them, with ambiguous provisions interpreted for their benefit. Only Congress may abrogate Indian treaty rights, and courts will not find that abrogation has occurred absent clear evidence of congressional intent. We note that this Guidance does not create any new legal obligations for EPA or expand the authorities granted by EPA's underlying statutes, nor does it alter or diminish any existing EPA treaty responsibilities.

Determining When to Ask About Treaty Rights During Tribal Consultation

EPA consultation with tribes provides the opportunity to ask whether a proposed EPA action that is focused on a specific geographic location may affect treaty-protected rights. Because treaty rights analyses are complex, staff are expected to inquire early about treaty rights.

Certain types of EPA actions, namely those that are focused on a specific geographic area, are more likely than others to have potential implications for treaty-protected natural resources. For example, EPA review of tribal or state water quality standards as a basis for National Pollutant Discharge Elimination System permits typically focuses on a specific water body. If a treaty

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[1] This Guidance focuses on consultation in the context of treaties. EPA recognizes, however, that there are similar tribal rights in other sources of law such as federal statutes (e.g., congressionally enacted Indian land claim settlements).

[2] EPA Administrator, December 1, 2014 Memorandum, Commemorating the 30th Anniversary of the EPA Indian Policy.

[3] Minnesota v. Mille Lacs Band of Chippewa, 526 U.S. 172 (1999).

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reserves to tribes a right to fish in the water body, then EPA should consult with tribes on treaty rights, since protecting fish may involve protection of water quality in the watershed.

Another example of an action in a specific geographic area is a site-specific decision made under the Comprehensive Environmental Response, Compensation, and Liability Act, such as a Record of Decision for a site, or the potential use of Applicable or Relevant and Appropriate Requirements for a cleanup. Other examples include a site-specific landfill exemption determination under the Resource Conservation and Recovery Act or other similar types of regulatory exemptions for specific geographic areas. In each case, employing the following questions in this Guidance during consultation may inform EPA of when treaty rights are present in the defined area and may be affected by the proposed decision.

For purposes of this Guidance, the treaty rights most likely to be relevant to an EPA action are rights related to the protection or use of natural resources, or related to an environmental condition necessary to support the natural resource, that are found in treaties that are in effect. Other treaty provisions, for example those concerning tribal jurisdiction or reservation boundaries, are outside the scope of this Guidance.

EPA actions that are national in scope, and thus not within a focused geographic area, fall outside the scope of this Guidance, because EPA actions focused on specific geographic areas are the ones we believe are most likely to potentially affect specific treaty rights. Examples of such activities outside the scope of this Guidance include the development of National Ambient Air Quality Standards under the Clean Air Act or the national registration of pesticides under the Federal Insecticide, Fungicide, and Rodenticide Act.

Where tribes raise treaty rights as a basis for consultation on issues that are national in scope, or treaty rights otherwise are raised during consultation on national actions, this Guidance can assist in the treaty rights consultation discussion.

In addition, EPA staff should be aware that treaty rights issues in the context of compliance monitoring and enforcement actions should be considered when consulting with tribes pursuant to the *Guidance on the Enforcement Principles of the 1984 Indian Policy* and the *Restrictions on Communications with Outside Parties Regarding Enforcement Actions*. EPA should also act consistent with the *EPA Policy on Environmental Justice for Working with Federally Recognized Tribes and Indigenous Peoples*.

Questions to Raise During Consultation

EPA should employ the following three questions during consultations when proposing an action that may affect tribal treaty rights within a specific geographic area. These questions may also be employed when treaty rights arise in other contexts. Collaboration between program and legal staff before and during consultation is an important aspect of ensuring both that these questions are

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asked and the answers are understood. For any treaty rights discussion raised during consultation, the tribe may identify particular tribal officials to consult with EPA about treaty rights. It is important that EPA work to ensure that consultation occurs with the appropriate tribally identified officials.

(1) Do treaties exist within a specific geographic area?

This question is designed to help EPA determine when a treaty and its related resources exist within the specific geographic area of the proposed action. This question is important because tribes may possess treaty rights both inside and outside the boundaries of reservations. In some cases, EPA may already be aware of existing, relevant resource-based treaty rights in a specific geographic area; for example, when a tribe has treaty rights within the boundaries of its reservation or near its reservation. In other cases, EPA may not be aware of the full effects of the treaty rights, or EPA may find it difficult to determine when a specific geographic area has an associated treaty right. For example, some tribes in the Great Lakes area retain hunting, fishing, and gathering rights both in areas within their reservations and in areas outside their reservation boundaries, commonly referred to as ceded territories. Similarly, some tribes in the Pacific Northwest retain the right to fish in their "usual and accustomed" fishing grounds and stations both within and outside their reservation boundaries, and retained the right to hunt and gather throughout their traditional territories.

(2) What treaty rights exist in, or what treaty-protected resources rely upon, the specific geographic area?

This question is designed to help EPA understand the type of treaty rights that a tribe may retain. By asking this question, EPA can better understand the complexities that are often involved in treaty rights and better understand whether the proposed EPA action could affect those rights. Some treaties explicitly state the protected rights and resources. For example, a treaty may reserve or protect the right to "hunt," "fish," or "gather" a particular animal or plant in specific areas. Treaties also may contain necessarily implied rights. For example, an explicit treaty right to fish in a specific area may include an implied right to sufficient water quantity or water quality to ensure that fishing is possible. Similarly, an explicit treaty right to hunt, fish, or gather may include an implied right to a certain level of environmental quality to maintain the activity or a guarantee of access to the activity site.

(3) How are treaty rights potentially affected by the proposed action?

This question is designed to help EPA understand how a treaty right may be affected by the proposed action. EPA should explain the proposed action, provide any appropriate technical information that is available, and solicit input about any resource-based treaty rights. It is also appropriate to ask the tribe for any recommendations for EPA to consider to ensure a treaty right is protected.

EPA Actions That May Affect Treaty Rights

EPA's next steps typically will involve conducting legal and policy analyses in order to determine how to protect the rights. These analyses are often complex and depend upon the context and circumstances of the particular situation. Issues that may arise often involve precedent-setting questions or warrant coordination with other federal agencies. It is expected that the EPA lead office or region that engaged in the tribal consultation about the potentially affected treaty rights will coordinate with the Office of International and Tribal Affairs, the Office of General Counsel, and appropriate Offices of Regional Counsel to conduct these analyses. Although the details of how to conduct such legal and policy analyses are not addressed by this Guidance, the EPA process may warrant continued or additional consultation with tribes.

Conclusion

EPA is committed to both protecting treaty rights and improving our consultations with tribes on treaty rights. As part of its commitment, EPA will emphasize staff training and knowledge-sharing on the importance of respecting tribal treaty rights in order to better implement this Guidance. As EPA gains experience on tribal treaty rights and builds upon its prior knowledge, the Agency may modify this Guidance to meet this commitment.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

Office of
International and Tribal Affairs

February 2016

EPA Responses to Comments on EPA Policy for Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights

Introduction

In May 2011, the Environmental Protection Agency (EPA) issued the *EPA Policy for Consultation and Coordination with Indian Tribes* (Consultation Policy). This Policy describes how EPA is to consult on a government-to-government basis with federally recognized tribal governments when EPA actions and decisions may affect tribal interests. Consultation by EPA consists of four phases: Identification, Notification, Input, and Follow-up on how tribal input was considered. The attached *EPA Policy for Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights* (Guidance) complements the Consultation Policy and is designed to be used in tribal-treaty-rights discussions for certain EPA actions undergoing consultation. The Guidance does not make any changes to the principles or processes established under the Consultation Policy.

This document contains EPA's consolidated responses to the comments received from federally recognized tribes, tribal consortia, and tribal organizations during the August – November 2015 tribal consultation and outreach period for the draft Guidance. As a result of the comments received, EPA has made substantive changes to the Guidance as described in this document, as well as changes suggested by commenters that go to the overall tone of the Guidance. A copy of the final Guidance can be found at [insert URL]

Throughout the tribal consultation and outreach period, EPA used a variety of mechanisms to exchange ideas and receive suggestions for how to improve the Guidance. These mechanisms included: written input; in-person consultations; national consultation teleconference calls; informational calls with EPA's national and regional tribal operations committees; and meetings with tribal organizations such as the Northwest Indian Fisheries Commission, the Great Lakes Fish and Wildlife Commission, and the National Congress of American Indians.

This document summarizes the common issues raised during the tribal consultation and coordination period and indicates how those issues were addressed in the final Guidance. Similar comments have been consolidated and summarized for clarity and efficiency.

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RESPONSE TO COMMENTS

Comment 1 ***The Guidance should apply to more EPA actions than just those that are focused on a specific geographic area.***

Response 1 This Guidance is designed to assist in consultations on EPA actions in specific geographic areas. This approach focuses EPA efforts on consultations related to actions believed to be those most likely to potentially affect treaty rights.

Treaty rights may be important considerations in EPA actions not expressly covered by this Guidance. EPA believes the framework laid out in the Guidance may be helpful and appropriate to use in those situations. EPA has added the following language to the Guidance: "Where tribes raise treaty rights as a basis for consultation on issues that are national in scope or treaty rights otherwise are raised during consultation on national actions, this Guidance can assist in the treaty rights consultation discussion." Guidance, page 2.

This Guidance does not reflect any legal determination regarding treaty rights and the scope of EPA actions.

Comment 2 ***Guidance Question #2: "What treaty rights does the tribe believe it retains in the specific geographic area?" fails to reflect potential impacts on the environment needed to support protected treaty resources and inappropriately refers to legal obligations as tribal beliefs.***

Response 2 EPA appreciates the number of tribes that provided suggested text for rephrasing this question. EPA believes the concerns raised were well-founded and Question #2 now reads: "What treaty rights exist in, or what treaty-protected resources rely upon, the specific geographic area?" Guidance, page 3. The rephrased question also makes clear that issues related to the environmental conditions supporting treaty resources are within the scope of the Guidance. For example, where tribes have treaty-protected fishing rights, and the fish in question are migratory, the Guidance also pertains to consultations on actions that affect fish habitat in areas where migration occurs.

Comment 3 ***The Guidance should make clear that treaties between tribes and the United States are the supreme law of the land under the U.S. Constitution and that EPA must follow the federal Indian law canons of treaty construction in interpreting treaty rights.***

Response 3 EPA agrees with this comment. The following language was added to the Guidance: "The U.S. Constitution defines treaties as part of the supreme law of the land, with the same legal force as federal statutes. Treaties are to be interpreted in accordance with the federal Indian canons of construction,

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a set of long-standing principles developed by courts to guide the interpretation of treaties between the U.S. government and Indian tribes. As the Supreme Court has explained, treaties should be construed liberally in favor of tribes, giving effect to the treaty terms as tribes would have understood them, with ambiguous provisions interpreted for their benefit. Only Congress may abrogate Indian treaty rights, and courts will not find that abrogation has occurred absent clear evidence of congressional intent. We note that this Guidance does not create any new legal obligations for EPA or expand the authorities granted by EPA's underlying statutes nor does it alter or diminish any existing EPA treaty responsibilities." Guidance, page 1.

Comment 4 ***EPA should use the "Free, Prior and Informed Consent" of tribes standard as found in the United Nations Declaration on the Rights of Indigenous Peoples before taking any EPA action that may affect treaty rights.***

Response 4 EPA recognizes the importance of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and believes that EPA tribal policies support many of the principles under UNDRIP. The *EPA Policy for Consultation and Coordination with Indian Tribes* and the Guidance support consultation on a government-to-government basis when EPA-proposed actions or decisions may affect a tribe's interest, including treaty rights. The Guidance is consistent with Executive Order 13175: *Consultation and Coordination With Indian Tribal Governments* and reflects the principles expressed in the EPA *Policy for the Administration of Environmental Programs on Indian Reservations*, often referred to as the 1984 EPA Indian Policy, and the Consultation Policy.

Comment 5 ***The Guidance does not address how EPA will implement its obligation to protect treaty rights when it delegates programs to states or exercises its oversight authority for delegated programs.***

Response 5 EPA actions with respect to EPA-approved state programs vary by EPA statute and program and include both mandatory and discretionary actions. Under EPA's existing Consultation Policy, tribes may request consultation on any EPA action or decision affecting tribal interests – including actions or decisions relating to authorized or delegated programs. Consultation Policy, page 4. This Guidance would apply to (and assist with) a tribal consultation on an EPA action or decision relating to authorized or delegated programs when that action or decision is focused on a specific geographic area. The Guidance does not, however, create any new legal obligations for EPA or expand existing authorities granted by EPA's underlying statutes, nor does it alter or diminish any existing EPA treaty responsibilities.

Comment 6 ***The Guidance should include a process to resolve potential conflicts between EPA actions and tribal treaty rights.***

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Response 6 The Guidance outlines the process for consulting on how best to consider treaty rights when they may be affected by a particular EPA action or decision. As noted in the Guidance, following consultation, EPA's next step will typically involve conducting legal and policy analyses in order to determine how to proceed so that the proposed action or decision does not conflict with treaty rights, and so that EPA may appropriately consider the treaty rights in the course of its decision-making process.

Tribal governments may communicate any concerns about a specific consultation or the consultation process in general to a Tribal Consultation Advisor, the head of the program or regional office conducting the consultation (i.e., the Assistant Administrator or Regional Administrator), or to the Agency's Designated Tribal Consultation Official, Assistant Administrator for International and Tribal Affairs.

Comment 7 ***The Guidance should recognize that consultation on treaty rights should occur with particular tribal officials as designated by each individual tribe, so that the tribe can establish the appropriate team for evaluating the treaty right impacts.***

Response 7 Participation by particular tribal officials during EPA consultations with tribes is at the discretion of the involved tribes. To ensure clarity, EPA added the following language to the Guidance: "For any treaty rights discussion raised during consultation, the tribe may identify particular tribal officials to consult with EPA about treaty rights. It is important that EPA work to ensure that consultation occurs with the appropriate tribally identified officials." Guidance, page 3.

Comment 8 ***Treaty rights protections should be incorporated into a consolidated national policy document that includes the EPA Policy for Consultation and Coordination with Indian Tribes and other related EPA policy documents.***

Response 8 EPA's work with tribes is broad and ongoing. As a result, EPA has issued a number of policy documents and guidances over the years to assist in its work with tribes. EPA reads and interprets these documents harmoniously. More-recent documents inform the work under prior documents. In other words, statements regarding treaty rights found in the Guidance are incorporated into EPA's ongoing work with tribes.

Comment 9 ***The Guidance should be revised to include details on how the various components outlined will be implemented.***

Response 9 The purpose of the Guidance is to begin the conversation and consultation with appropriate tribal officials on EPA actions that may affect treaty rights. At the request of commenters, the Guidance clarifies that the treaty rights discussions may entail a series of consultation activities and that

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consultation may extend beyond the initial consultation(s) into the time when EPA is conducting its legal and policy analyses. The Guidance now reads: "Although the details of how to conduct such legal and policy analyses are not addressed by this Guidance, the EPA process may warrant continued or additional consultation with tribes." Guidance, page 4.

Comment 10 ***The Guidance should address the training needs for EPA staff. EPA staff need to learn about treaties or court decisions and have these materials readily available.***

Response 10 EPA agrees with this comment. EPA has developed, and is continuing to identify, additional tools and information to assist its staff in understanding tribal treaties and EPA's treaty rights obligations. To emphasize the importance placed on training, EPA added the following language to the Guidance: "As part of its commitment, EPA will emphasize staff training and knowledge-sharing on the importance of respecting tribal treaty rights in order to better implement this Guidance." Guidance, page 4.

Comment 11 ***The Guidance should address EPA's role in helping tribes understand the technical aspects of any proposed EPA action.***

Response 11 EPA agrees with this comment. For any consultation, it is important that the technical aspects of the EPA action are clearly explained. To address this comment, EPA added the following language regarding technical information to the Guidance: "EPA should explain the proposed action, provide any appropriate technical information that is available, and solicit input about any resource-based treaty rights." Guidance, page 3.

Comment 12 ***The Guidance should clarify that tribes may initiate a consultation request to discuss the effects of an EPA action on treaty rights.***

Response 12 Under the EPA Consultation Policy, tribes may request consultation on any issue affecting their interests. Consultation Policy, page 4. The Guidance does not change this, or any other, aspect of the Consultation Policy. The Guidance states: "These questions may also be employed when treaty rights arise in other contexts." Guidance, page 2. The phrase "in other contexts" includes instances when treaty rights are raised by tribes in any consultation that they requested.

Comment 13 ***The Guidance should discuss EPA's duty to identify other federal agencies potentially involved in the proposed EPA action or the treaty rights issue.***

Response 13 EPA agrees with this comment. If a treaty right issue involving the EPA action involves other federal agencies, EPA will coordinate with the relevant agencies. This is EPA's current practice. The Guidance acknowledges that this may occur and states: "Issues that may arise often

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involve precedent-setting questions or warrant coordination with other federal agencies." Guidance, page 4.

Comment 14 ***The Guidance should address the issue of confidentiality of the information tribes provide during any consultation on treaty rights.***

Response 14 It is important to promote a full and frank exchange of views during government-to-government consultation with tribes. These interactions may include discussions relating to issues of unique sensitivity to tribes such as cultural practices, uses of environmental resources, and locations of cultural resources. There may also be sensitivity regarding tribal relationships with surrounding states and jurisdictional issues. Under federal law, information exchanged between EPA and tribes ordinarily will not be privileged or otherwise protected from disclosure under the Freedom of Information Act.

Reference Documents

1. EPA Policy for Consultation and Coordination with Indian Tribes http://www.epa.gov/tribal/epa-policy-consultation-and-coordination-indian-tribes#policy
2. EPA Policy for Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights : http://www.epa.gov/tribal/epa-policy-consultation-and-coordination-indian-tribes-guidance-discussing-tribal-treaty
3. EPA's Tribal Consultation At-A-Glance http://www.epa.gov/tribal/tribal-consultation-glance-infographic

Improving Tribal Consultation and Tribal Involvement in Federal Infrastructure Decisions

January 2017

U.S. Department of the Interior
U.S. Department of the Army
U.S. Department of Justice

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I. Executive Summary

Over the past eight years, the Obama Administration has made historic progress to strengthen the government-to-government relationship between the United States (United States or U.S.) and Federally-recognized Indian Tribes (Tribes or Indian Tribes) and to better fulfill the United States' trust responsibility to Tribes. In addition to creation of the White House Council on Native American Affairs, restoring Tribal homelands, and settling historic disputes, this Administration has prioritized Tribal consultation as a method for considering how Federal policies and decision-making processes affect the interests of Tribes and their members. With regard to infrastructure projects, historically Federal agencies have not, as a matter of policy, sought out Tribal input or consistently worked to integrate Tribal concerns into the project approval processes; Tribal consultation is a way to rectify this by recognizing the government-to-government relationship and taking Tribal interests into account from the start.

Investment in our Nation's infrastructure has also been a priority of the Obama Administration. The lack of 21st century infrastructure is particularly apparent in Indian country. Whether it is running water, roads, housing, or broadband, Tribal communities are often the most in need. National proposals included calling for investments in a cleaner, more reliable transportation system that reduces our reliance on fossil fuels, cuts carbon pollution, and helps mitigate impacts of climate change; expanding collaboration across the public and private sectors; and calling for establishment of a National Infrastructure Bank.[1] Since 2011, the Administration has undertaken an ambitious effort to modernize the Federal Government's role in infrastructure permitting processes. Through a variety of actions, the Administration has sought to expedite the review and permitting of major infrastructure projects that will strengthen our Nation's economy, create jobs, and improve our competitiveness in the international market.

Recognizing these priorities are interlinked, on September 23, 2016, the Department of the Interior, Department of Justice, and the Department of the Army issued a joint letter to Tribal Leaders committing to a broad review and consultation with Tribes on how Federal decision-making on infrastructure and related projects can better allow for timely and meaningful Tribal input. This Report, *Improving Tribal Consultation and Tribal Involvement in Federal Infrastructure Decisions*, is the product of this government-to-government consultation and comments received from fifty-nine Tribes (and eight organizations representing Tribal interests) in October and November 2016. It reflects the start of a continuing nation-to-nation consultation that is needed to ensure that infrastructure projects are sited in a manner that lives up to the United States' obligations to Tribes.

While each Tribe's comments were unique to their respective experiences, Tribes spoke with one voice as to the need for improvement in how and when Federal agencies engage Tribes prior to authorizing or otherwise initiating Federal infrastructure decisions. Specifically, Tribes stated that Federal agencies are inconsistent in the degree to which each agency is aware of, and implements, its responsibilities to engage with Tribes as sovereigns in accordance with the

[1] As proposed, the National Infrastructure Bank would leverage public and private funds to invest in infrastructure nationwide.

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government-to-government framework, the Federal relationship, and Tribal reserved rights through treaties and other legal authorities. Even where such rights and responsibilities are explicit in law, regulation, or policy, Tribes asserted that Federal agencies often fail to fully implement them.

Along these lines, Tribes further remarked that even the best-written agency Tribal consultation policies are often poorly implemented. Tribes noted that often agencies neither treat Tribes as sovereigns nor afford Tribes the respect they would any other governmental entity—let alone treat Tribes as those to whom the United States maintains a trust responsibility or as those who hold reserved rights through treaties that granted the United States vast amounts of territory. Tribes emphasized that the spirit with which consultation is conducted is essential, Tribes need to be consulted sooner, Federal staff need better training prior to working with Tribes, and that consultation should be more consistent across agencies.

In addition to these more general comments, Tribes also identified obstacles to their meaningful participation in Federal decision-making under specific statutes, and suggested changes in the language and/or implementation of these statutes. However, in doing so, Tribes also noted that they are not universally opposed to infrastructure investments. To the contrary, roads, broadband, transmission and energy resources are important to Tribal economies and economic development. Tribes emphatically said that they want to be part of the process from the start, rather than being included only after relevant determinations have already been made or projects have already commenced. Tribes also objected to having to use the legal system as a way of making their voices heard. They noted that when infrastructure investments affect Tribal interests, these investments should also benefit Tribes so that Tribes have better access to broadband, better transportation, and cleaner, safer energy options, just like the rest of our Nation.

Based on Tribes' input, this Report articulates a set of principles that should inform agency practices in the realm of infrastructure. Among other things, this includes appropriate staffing, training, and resource allocations, as well as guidance as to how Tribal interests should be incorporated into agency decision-making processes in both formal and informal ways. These recommendations should help agencies fulfill their dual responsibilities of complying with applicable treaty and trust responsibilities and ensuring a smooth runway for infrastructure investments.

This Report does not set forth a detailed discussion of each individual agency's consultation policies and practices or make comprehensive recommendations for policy, management, or legislative action. Additional Tribal consultations must be held to fully shape such comprehensive recommendations. However, included in this Report are a handful of specific recommendations for agencies and agency actions underway. In addition, this Report recommends that each agency undertake a detailed analysis of its own Tribal consultation policies and practices, as well as relevant statutory authorities, in order to ensure that each agency's decision-making processes honor the government-to-government relationship with Tribes and continue to fulfill the Federal trust responsibility to Tribes.

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In analyzing their Tribal consultation policies and practices, agencies should examine whether the policies and practices are consistent with the recommendations of this Report. Agencies should provide a written account of their findings to the White House Council on Native American Affairs (WHCNAA)[2] and also make these findings available online no later than April 1, 2017. The WHCNAA and Federal agencies that have a role in improving the Federal infrastructure permitting processes may then review agency submissions and discuss Tribal consultation as a topic at its 2017 first quarter meeting. These agency submissions will also provide stakeholders and Congressional leaders with a sense of what statutory, regulatory, and funding barriers hinder agencies from improving Federal decision-making on infrastructure and related projects, identify next steps in improving and fully implementing robust Tribal consultation policies and practices, and inform efforts to advance infrastructure investments and agency Tribal consultation practices moving forward.

II. Purpose of Report

While the Federal Government has made great strides towards making Tribal consultation a standard part of the Federal review and decision-making process, Tribes have expressed frustration with inconsistent authorities, implementation, policies, and practices across the Federal Government and across the country with regard to consultation. In the September 23, 2016 letter to Tribal Leaders, the Departments of Interior, Justice, and the Army committed to a broad review and consultation with Tribes on how Federal decision-making on infrastructure and related projects can better allow for timely and meaningful input from Tribes (Appendix 1). A subsequent Framing Paper discussed in greater detail the type of information the Departments sought from Tribes during the consultations (Appendix 2). Specifically, Federal agencies sought feedback concerning best practices for Tribal consultation and asked for Tribal input on questions in two broad categories:

1) *Promoting Meaningful Government-to-Government Engagement within the Existing Framework.* How can Federal agencies better ensure meaningful Tribal input into infrastructure-related reviews and decisions to protect Tribal lands, resources, and treaty rights within the existing framework?

2) *Identifying Any Necessary Change to the Existing Framework.* Where and when does the current framework present barriers to meaningful consultation? What changes to the current framework would promote these goals?

In October and November 2016, Federal agencies convened a series of seven government-to-government consultation sessions and one listening session with Tribal leaders in locations around the country (Appendix 3). Concurrently, a written comment period provided an avenue for Tribes to submit written comments in addition to or in place of participating in the in-person sessions. In sum, eighty-seven written comment submissions were received and fifty-nine Tribes and eight organizations representing Tribal interests provided input on the questions

[2] The WHCNAA is tasked with improving coordination of Federal programs affecting Tribes and the use of resources available to Tribal communities.

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posed. 175 Federal staff representing sixteen Federal agencies participated in one or more of the sessions.

This Report serves several functions. First, it provides information about the existing Federal statutory, regulatory, and policy framework governing both Tribal consultation and Federal decision-making on infrastructure and related projects. Second, it serves as a record of Tribal input on this topic, summarizing both written and oral comments received during the consultations, listening session, and written comment period. Third, in order to improve both consultation and infrastructure permitting processes, this Report recommends that agencies undertake a thorough review of their consultation policies and practices, and that consultation policies be provided to the WHCNAA and made publicly available (if they are not already). The Report provides an initial Federal response to Tribal comments and recommendations along with a set of principles that should inform Tribal consultation. Finally, the Report highlights best practices gleaned from what Tribes identified as successful Tribal consultations and makes recommendations for further research, administrative, regulatory, or legislative action.

III. Overview of Key Concepts and Legal Framework

Recognizing the complexity of the historical, legal, and policy framework that informs both Tribal affairs and infrastructure issues, this section of the Report serves as a primer on key concepts and statutes relevant to both Federal Indian law and environmental and related issues governing Federal infrastructure review and permitting. This is not a comprehensive summary of all issues, but rather a starting point to ensure all readers have a foundation in some of the key legal principles in these fields.

A. Key Concepts in Federal Indian Law and Policy

Treaty Rights and Trust Responsibilities

From this Nation's founding until Congress's 1871 decision to end treaty making with Indian Tribes, the United States entered into many treaties with Tribes under the authority granted by the Treaty Clause and Indian Commerce Clause[3] in the United States Constitution. Treaties are agreements between two sovereign nations and are, along with the Constitution and Federal laws, the supreme law of the United States. These treaties not only recognize Tribal sovereign authority, but also reserve all rights not expressly granted to the United States and often include express reservations of certain rights, such as hunting and fishing, and the guarantee of goods and services such as food, education, and healthcare. Treaties were also a means by which Tribes granted to the Federal Government vast tracts of Indian land, which was used for homesteading and rights-of-way, while reserving lands for Tribes.

[3] Article I, Section 8, Clause 3 of the Constitution grants Congress the authority to "regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes." This latter clause is referred to as the "Indian Commerce Clause" and has been interpreted by courts as granting Congress plenary authority over Indian affairs.

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The Constitution provides the legal basis for the nation-to-nation relationship between the United States and all Tribes. One of the basic principles of Indian law is that the United States has a special trust relationship with all Indian Tribes. Congress has defined the trust relationship in statutes, and in some cases, has imposed fiduciary obligations on Executive branch agencies. Congress has repeatedly reaffirmed the trust relationship. *See, e.g., Indian Trust Asset Reform Act,* Sec. 101-102. Pub. L. 114-178 (June 22, 2016). This trust relationship serves as an underlying basis for Tribal consultation practices discussed throughout this Report.

Tribal Consultation

Tribal consultation is a process that aims to create effective collaboration with Tribes and inform Federal decision-makers.[4] Consultation is built upon a government-to-government exchange of information defined, in part, by meaningful dialogue based upon trust, respect, and shared responsibility.[5] In addition, this kind of consultation has a defined, agreed-upon purpose, subject, and objective. By proactively involving Tribes in the Federal decision-making process whenever Tribal interests are affected, Federal agencies will often improve the quality of their decision-making, improve outcomes for affected communities, protect Tribal interests, and reduce litigation risk.

President Obama reaffirmed the Federal commitment to Tribal consultation in his November 9, 2009 Presidential Memorandum on Tribal Consultation (Presidential Memorandum),[6] which directed agencies to fully implement the policies and directives of Executive Order 13175 (E.O. 13175),[7] Consultation and Coordination with Indian Tribal Governments, issued by President William J. Clinton on November 6, 2000. E.O. 13175 establishes policymaking criteria that promote respect for Tribal self-government and directs agencies to have an accountable process to ensure meaningful and timely input by Tribal officials in the development of regulations and policies that have Tribal implications.

For instance, E.O. 13175 and the Presidential Memorandum direct agencies to engage in Tribal consultation regarding policy decisions "that have substantial direct effects on one or more Indian [T]ribes, on the relationship between the Federal Government and Indian [T]ribes, or on the distribution of power and responsibilities between the Federal Government and Indian [T]ribes." Some agencies have issued consultation policies that require consultation regarding agency actions and decisions not specifically addressed in E.O. 13175, such as by requiring consultation for other types of agency actions, or when the effects on Tribes are more indirect or speculative. Thus, the specific circumstances under which a given agency will initiate Tribal consultation accordingly may vary on an agency-by-agency or statute-by-statute basis. However, throughout the course of the Obama Administration, at least eight Federal agencies have

[4] Secretarial Order 3317 §4(b), U.S. Department of the Interior, December 1, 2011.
[5] *Id.*
[6] https://www.whitehouse.gov/the-press-office/memorandum-tribal-consultation-signed-president
[7] https://www.federalregister.gov/documents/2000/11/09/00-29003/consultation-and-coordination-with-indian-tribal-governments

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renewed, updated, or created Tribal consultation policies in accordance with the Presidential Memorandum and E.O. 13175 (Appendix 4).

B. Current Legal Framework for Federal Infrastructure Decisions

In addition to the authorities generally governing Federal relations with Indian Tribes discussed above, there are a variety of statutes, regulations, and executive orders that govern Federal involvement in infrastructure, extractive, and other projects that may affect Tribal lands or resources. Many types of infrastructure projects require Federal funding, permits, or other authorization. For example, infrastructure projects may trigger requirements under the Clean Water Act, the Endangered Species Act, the Natural Gas Act, or other Federal statutes. Projects that are located on or cross Federal or Indian (trust or restricted) land generally require approval from the relevant land management agency, such as the U.S. Forest Service, the Bureau of Land Management, or the Bureau of Indian Affairs.

Statutes, regulations, and judicial decisions constrain the scope of an agency's review or permitting authority, including what factors and evidence the agency may consider in its review. The applicability of any particular legal authority depends on factors such as the type of the project, where it is located, its source of funding, and/or particular site-specific issues. Agencies also undertake more comprehensive planning processes that can affect infrastructure permitting processes and decisions, such as the Bureau of Land Management's Resource Management Plans or the U.S. Forest Service's Planning Rule. Conversely, some infrastructure projects, such as a privately funded project on private or state land, may not require any Federal permits or reviews. Other projects may have only limited Federal involvement focused on a specific element of the project, such as the discharge of dredged or fill material into waters of the United States, including wetlands.

When a project does require a Federal permit or authorization, the Federal agency involved may have a duty to consult with Tribal governments, depending on requirements under applicable statutes. Generally, a Federal agency will only consult with Tribes regarding the portion of an infrastructure project over which that agency has jurisdiction. For some projects, multiple Federal agencies have jurisdiction over a project, but typically each agency conducts its own consultation process. The legal framework also influences the timing of Federal review. If there is limited Federal involvement with a project, the Federal agency may not learn of a project until late in the planning and development process. All of these limitations present challenges for integrating Tribal input into project outcomes.

The following discussion provides an overview of some of the most common statutes that apply during a major infrastructure project. These topics were selected for inclusion based on the issues Tribes raised in the listening session, consultations, and written comments.

The National Environmental Policy Act and Environmental Review

The National Environmental Policy Act (NEPA) requires Federal agencies to incorporate environmental considerations into their decision-making processes. NEPA requires that prior to funding, authorizing, or implementing a given project or course of action, Federal agencies must

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assess the action's direct, indirect, and cumulative impacts on the environment. Implementing regulations direct Federal agencies to encourage and facilitate public involvement to the fullest extent possible in decisions that affect the quality of the environment. Tribes may be involved in a NEPA review through the general public participation process or, more formally, as a cooperating agency. NEPA also requires agencies to evaluate a range of reasonable alternatives when deciding whether to approve a project. Depending on the type of Federal action and its likely impacts, agencies comply with NEPA by: 1) demonstrating the reason the project fits within a categorical exclusion from review; or 2) completing either an environmental assessment or an environmental impact statement.

The National Historic Preservation Act and Historic Preservation Reviews

Section 106 of the National Historic Preservation Act (NHPA) requires Federal agencies to consider the effects of proposed Federal projects or actions on historic properties, prior to the expenditure of funds or issuance or approvals for permits or licenses, and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment. Section 106 seeks to accommodate historic preservation concerns with the needs of Federal undertakings through consultation among the Federal agency official and consulting parties in the early stages of project planning. The goal is to identify historic properties potentially affected by the proposed Federal projects or actions, assess potential effects and seek ways to avoid, minimize or mitigate any adverse effects on historic properties. Consulting parties must include State Historic Preservation Officers and Tribal Historic Preservation Officers, Indian Tribes, Native Hawaiian Organizations, local governments, and applicants, as appropriate. Specifically, Federal agencies are required to consult with any Indian Tribe that attaches religious and cultural significance to historic properties that may be affected by proposed Federal projects or actions. The agency is required to involve the public at certain points within the review process and may include consulting parties and individuals and organizations with a demonstrated interest in the project or action as additional consulting parties.

The ACHP has issued government-wide regulations as well as specific guidance regarding tribal consultation.[8] The U.S. Army Corps of Engineers (Corps) promulgated its own regulation for the protection of historic properties under NHPA, commonly known as Appendix C.[9] The Corps published Appendix C in 1980, before the ACHP promulgated its revised regulations implementing the 1992 amendments to the NHPA which include, among other things, the need to consult with Tribes when historic properties of religious or cultural importance could be affected. In order to ensure consistency with the NHPA amendments and ACHP regulations, the Corps issued an agency-wide Tribal consultation policy in 2012 and several Interim Guidance documents specific to the Corps' regulatory program that outline requirements for consulting with Tribes on Section 106 matters. These guidance documents include references to ACHP's regulations for various aspects of the consultation process. In addition, the Corps issued an agency-wide Tribal consultation policy in 2012 and a regulatory-specific Tribal consultation memorandum in 2016.

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[8] 36 C.F.R. part 800
[9] 33 C.F.R. part 325

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Native American Graves Protection and Repatriation Act

The Native American Graves Protection and Repatriation Act (NAGPRA) was passed into law in 1990. Along with its implementing regulations, NAGPRA protects Indian Tribes', Native Alaskan entities', and Native Hawaiian organizations' rights to custody of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony with which they have a relationship of cultural affiliation that are discovered on Tribal or Federal lands. NAGPRA would apply in the event that an infrastructure project being built on Federal or Tribal land encountered human remains or other cultural items that are identified as Native American.

Clean Water Act

The Clean Water Act (CWA) and its implementing regulations establish the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. One CWA provision that comes into play as part of Federal review of infrastructure projects is Section 404.

Section 404 regulates the discharge of dredged or fill material into the waters of the United States, including wetlands. It requires a Corps permit prior to entities making such a discharge unless the activity is exempted from Section 404 regulation (e.g., certain farming and forestry activities). This includes discharges of dredged or fill material into waters that may be associated with a variety of project types, including infrastructure such as energy generation and transmission, roads, rail, dams, airports, ports, or navigation. In general, no discharge of dredged or fill material may be permitted if (1) a practicable alternative exists that is less damaging to the aquatic environment or (2) the Nation's waters would be significantly degraded. EPA and the Corps have issued regulations and guidelines interpreting various aspects of the CWA.

General Mining Act of 1872 and Federal Land Policy Management Act

The General Mining Act of 1872 (Mining Act) authorizes and regulates the mining of mineral deposits on most Federal public lands.[10] The Mining Act opened "all valuable mineral deposits," such as gold, silver, copper, and uranium, in unreserved lands belonging to the United States to exploration and purchase. The 1976 Federal Land Policy and Management Act (FLPMA) and various agency regulations protect the surface resources of Federal lands during exploration and mining activities, and generally prohibit unnecessary or undue degradation of public lands. The Mining Act itself contains no environmental protection measures, but mining activities on Federal lands are subject to NEPA and other Federal, state, and local regulations for air and water quality and solid waste management.

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[10] Some lands are withdrawn from mineral entry and claims, including Indian reservations, National Parks, National Monuments, and most reclamation projects and wildlife protection areas.

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The Natural Gas Act and Energy Policy Act of 2005

The Federal Energy Regulatory Commission (FERC) reviews and permits natural gas pipelines pursuant to the Natural Gas Act and the Energy Policy Act of 2005. This permitting process generally involves three stages—pre-filing, application, and post-authorization. The pre-filing process provides opportunities for stakeholders, including Tribes, to get involved early and provide relevant views and information, promoting coordination and a shorter overall timeframe. In deciding whether to grant or deny an application, FERC considers multiple factors, including a project's potential impacts on pipeline competition, the possibility of overbuilding, potential environmental impacts, and other considerations.

Laws Applicable to Interstate Oil Pipelines

Interstate oil pipelines are reviewed and permitted primarily at the state level. The construction of an oil pipeline requires Federal authorization only if it crosses Federal land or Federally-regulated waters. If a pipeline crosses Federal land, the Federal agency responsible for managing that land (e.g., BLM) is responsible for issuing a right-of-way permit or easement. A pipeline that requires construction in Federally-regulated waters will also require permits or other approvals from the Corps.

Once a pipeline is constructed, FERC is the Federal agency responsible for regulating rates and conditions of service. FERC regulates rates and the terms and conditions of service offered by oil pipelines engaged in interstate commerce. The Pipeline and Hazardous Materials Safety Administration (PHMSA) is responsible for monitoring oil pipeline safety.

C. Federal Efforts to Improve Infrastructure Permitting

Since 2011, the Administration has undertaken an ambitious effort to modernize the Federal Government's role in the environmental review and permitting process. Through a variety of actions, the Administration has sought to expedite the review and permitting of major infrastructure projects that will strengthen our Nation's economy, create jobs, and improve U.S. competitiveness. At the same time, these review processes must improve environmental and community outcomes. Two examples of these efforts are detailed below: (1) the Fixing America's Surface Transportation (FAST) Act and the Federal Permitting Improvement Steering Council (FPISC); and (2) infrastructure permitting processes for development on Tribal lands.

FAST Act & the Federal Infrastructure Permitting Improvement Steering Council

The FAST Act was enacted on December 4, 2015. Title 41 of the FAST Act (FAST-41) created a new governance structure, set of procedures, and funding authorities designed to improve the timeliness, predictability, and transparency of the Federal environmental review and authorization process for certain infrastructure projects. FAST-41 created the FPISC, which is composed of thirteen agency Deputy Secretary-level members and chaired by an Executive Director appointed by the President.

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FAST-41 applies to two different categories of infrastructure projects: 1) projects that are subject to NEPA, likely to require a total investment of more than $200 million, and not already subject to abbreviated review procedures; and 2) projects subject to NEPA that, in the opinion of FPISC, are likely to benefit from enhanced Federal oversight and coordination. Subject to limited exceptions, infrastructure projects that fall into either of these two categories are required to develop multi-agency coordinated project plans that set out timetables for applicable environmental reviews and authorizations, and must include schedules for public and Tribal outreach and coordination. FAST-41 covered projects are not expedited; under FAST-41, agencies are expected to follow the schedules they agree to in the coordinated project plans for covered projects.

Improving Processes for Permitting and Infrastructure Development on Tribal Lands

There have also been recent efforts to improve Federal review processes for a variety of infrastructure and related activities on Tribal lands. For example, the Department of the Interior issued new regulations in 2012 that clarify the procedures for obtaining Bureau of Indian Affairs (BIA) approval of residential, business, and wind and solar lease documents, and establish deadlines for BIA to issue decisions on complete lease applications. Importantly, these regulations provide greater deference to Tribes for Tribal land leasing decisions. The Department of the Interior similarly revised its regulations for granting rights-of-way across Indian land in 2015. Another example is efforts led by the Department of Housing and Urban Development (HUD) to simplify Tribal housing development and its related infrastructure needs. After a series of Tribal information sessions, listening sessions, and formal consultation, as well as coordination among Federal agencies, a report was provided to Congress containing recommendations that HUD and its interagency partners are in the process of implementing as of the time of this Report's publication.[11]

IV. Nationwide Consultations – What Was Said

Tribal input received during this Tribal consultation has described some systemic issues with the way Federal agencies solicit and account for Tribes' input into infrastructure decisions. Additionally, some Tribes voiced concern on the effectiveness of the current framework itself. This section provides an overview of Tribes' comments and recommendations. For more detail, please see the summary of Tribal comments and recommendations at Appendix 5.[12]

A. Summary of Tribal Comments

Tribal Perspectives on Consultation

Overall, Tribes provided their views that meaningful government-to-government consultation occurs when Federal agencies and Tribes, as sovereigns, have an open dialogue to

[11] http://portal.hud.gov/hudportal/documents/huddoc?id=CoorEnvirReview.pdf

[12] Note: The views expressed in Section IV are summaries of comments received during this Tribal consultation process. These views do not necessarily represent the view of the Federal Government.

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share information early on in the process and sincerely work in partnership toward consensus on a path forward. Tribes expressed their experiences with Federal agencies treating government-to-government consultation as a "box-checking" procedural exercise, rather than an opportunity to substantively address Tribal concerns and obtain Tribal consent. Tribes repeatedly cited to the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) as authority for requiring Tribes' free, prior, and informed consent for any infrastructure-related project that may affect Tribes or treaty rights. Also, a few Tribes provided positive examples of when government-to-government consultation relating to infrastructure projects has worked well. See Appendix 6 for more details on these positive models for Tribal engagement.

Tribal Perspectives on Federal Infrastructure Projects

In the listening session, consultation sessions, and written comments, Tribes acknowledged the importance of infrastructure to Tribal economies and economic development. Conversely, many Tribes shared turning points in their histories where a specific Federally-approved infrastructure project, on which the Tribe was not adequately consulted, had devastating effects on the Tribe's community, resources, ability to engage in ceremonial and cultural practices, and their members' survival. For example, Tribes cited the construction of dams that flooded their homes; the installation of infrastructure that destroyed resources on which the Tribe depended for hunting, fishing, and gathering; and the authorization of mining activities that degraded tribal waterways. Tribes noted that these threats continue with each new infrastructure project because of a lack of adequate Tribal participation in the Federal decision-making process.

Tribes reported feeling powerless to influence the direction of infrastructure projects in the beginning stages, or to prevent the ultimate damage or destruction of their resources, cultural items, and sacred sites and landscapes that are part of their identity, culture and spirituality, and survival. Tribes also noted that once the damage or destruction has occurred, project proponents that caused the damage or destruction and the Federal agencies that approved the projects appear to bear no consequences. Tribes indicated that their insight and expertise are often overlooked despite the fact that they have a vast amount of cultural, historical, and geographical knowledge about their ancestral territory and practices. Tribes suggested that if properly utilized by the Federal government, this knowledge could help ensure that infrastructure projects are completed in a timely manner that avoids negative impacts on Tribal resources and treaty rights and reduces the risk of subsequent disagreement or litigation.

Tribes noted that the agencies' NHPA and NEPA processes provide opportunities for Tribal input, but that agencies' approaches to obtaining input are inconsistent, and that Tribes should be given a greater voice in these processes because they are uniquely situated to identify potential impacts to Tribal interests. Tribes also emphasized the need for Tribal input into projects under the FAST Act, including input on whether projects should be eligible for "fast tracking" and ensuring ongoing Tribal input through representation on the FPISC.

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Timing

Tribes stated the need to initiate consultation at the earliest possible point is of paramount importance so Federal agencies can take proper steps to mitigate impacts on Tribal interests *before a decision is made.* Tribes argued that timing is key to ensure their concerns are taken into account and addressed, thus minimizing potential delays due to disputes or litigation. Tribes suggested Federal agency leaders and staff should initiate government-to-government consultation as soon as the Federal agency is approached with a potential project affecting Tribal interests.

Scope

Tribes expressed frustration that Federal agencies' review of any particular project under NEPA and NHPA is often narrow. For example, Tribes noted a Federal agency may have jurisdiction over only a specific aspect of the project, and therefore focus its NEPA review on that specific aspect without looking at the consequences that flow from the approval of that aspect or examining the cumulative effects. Tribes also expressed concern with relying on nationwide permits and programmatic environmental assessments and environmental impact statements, which do not allow for the individualized examination of impacts to Tribal resources.

Tribal-Federal Relationship

Tribes frequently commented that Federal agency leaders and staff often treat Tribes merely as stakeholders. Tribes repeatedly emphasized that they should be regarded as sovereign governmental entities who are trust beneficiaries and holders of treaty rights.

Education & Training

Tribes stated that many Federal leaders and staff dealing with infrastructure matters lack an understanding of the trust and treaty responsibilities, how to work with Tribes effectively, Tribal histories and cultures, and Federal agency policies—all of which, in turn, affect their daily execution of agency missions. Accordingly, Tribes emphasized the need to educate Federal agency leaders and staff dealing with infrastructure matters on basic principles of the Federal Government's responsibilities to Tribes and the history of the United States' relationship with Tribes. Tribes noted that this information would assist Federal agency leaders and staff in identifying whether a given action may implicate Tribal interests, and therefore should be subject to government-to-government consultation. Likewise, such information would provide a starting point for the Federal agency leaders and staff to better understand Tribal input. In turn, Federal agencies could be better positioned to understand whether projects requiring Federal approvals may be impacting Tribes' ancestral lands that may hold human remains, cultural items, and sacred sites, or ceded lands in which Tribes have hunting, fishing, gathering, or other rights.

Resources and Tribal Capacity

During the course of the consultations, Tribes regularly cited capacity constraints as a factor in their ability to process and respond to infrastructure-related requirements and requests. Tribes asked agencies and Congress to provide funding for Tribes to increase their own capacity

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to engage in Tribal Consultation and to remunerate Tribes for costs associated with consultations, such as: providing ready access to technical expertise, attending consultations, conducting studies, and producing reports. These Tribes noted that it is important that a Tribe's technical experts participate in consultations (in addition Tribal leaders and non-Tribal experts who may be involved in any given project) because they are knowledgeable about the cultural and historical considerations important to the Tribe.

B. Tribal Recommendations

Tribes offered many recommendations for improving the consultation process. Suggestions ranged from legislative changes to various administrative actions, including, but not limited to, new or revised executive orders, new Office of Management and Budget guidance, the provision of financial assistance to Tribes, and training to Federal leaders and staff. The following subsections highlight some of the most commonly heard suggested changes to the existing legal framework for Federal infrastructure permitting.

1. The Corps should revise or repeal its Appendix C and discontinue the use of Nationwide Permits for the authorization of impacts to waters associated with pipelines and other large infrastructure projects.
2. If not discontinued, the Nationwide Permitting process should be amended to include adequate time for Tribal consultation and the assessment of Tribal impacts.
3. Particularly when authorizing impacts to waters associated with major infrastructure projects via Nationwide Permits, Federal agencies should be required to consider whether additional steps or analysis are needed to evaluate and address Tribal impacts. This consideration could include independent evaluation of impacted Tribes and/or the need for additional agency reviews under NEPA or NHPA with the Tribes as cooperating agencies to identify and resolve issues of concern.
4. FPISC should better incorporate Federal agencies' obligations and responsibilities to Tribes, and consider whether qualifications for fast-track projects should exclude projects impacting Tribal interests. FPISC should work with OMB on a policy requiring all agencies to comply with trust obligations, treaties, and consultation requirements prior to the approval of an infrastructure project affecting Tribal interests. This policy should also require demonstration that agencies obtained Tribes' free, prior, and informed consent for the project, and the establishment of a Tribal Trust Compliance Officer.
5. Federal agencies should proactively consult and coordinate early with Tribes when considering the planning of Federal projects and require free, prior, and informed consent of the Tribe (as stated in the UNDRIP) before proceeding with any project. Federal agencies should facilitate open information sharing for projects under NEPA or NHPA review.
6. Federal agencies should consider broadening the cumulative impacts analysis conducted under NEPA to capture off-reservation impacts in areas where Tribes may have sacred sites or treaty rights.

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7. Avoidance and protection should be the ultimate goal for Federal agencies, not mitigation. In the alternative, Federal agencies should consult with Tribes to identify culturally appropriate mitigation measures that fully consider the potential risks or impacts to Tribal rights and resources.

Tribes also suggested several legislative actions. These included:

1. Amend NHPA to:
    a. Increase ACHP's authority to enforce its decisions and issue penalties for Federal agencies that fail to comply with NHPA;
    b. Restrict Federal agencies' ability to permit a project if ACHP or other agencies call for additional NHPA-based reviews or consultations;
    c. Include additional cultural resources recognized by Tribes, such as floral, faunal, geological, and water locations Tribes deem significant or sacred;
    d. Include language requiring mitigation of adverse effects and avoiding sacred sites for certification by Tribes to gain project approval;
    e. Include minimum standards for information dissemination to Tribes and protection of confidential Tribal information;
    f. Provide ACHP with a specific role in resolving disputes on areas of potential effect, potential adverse effects on eligible sites, measures required to avoid or mitigate adverse effects, and similar matters;
    g. Allow signatory authority for Tribes on programmatic agreements or memoranda of understanding entered pursuant to Section 106 for off-reservation actions.
2. Amend NEPA to:
    a. Explicitly require carbon impact studies and cumulative impact studies whenever an environmental assessment (EA) or environmental impact statement (EIS) is required; and
    b. Clarify the need to conduct an EIS for crude oil pipeline construction and operation.
3. Amend or repeal the Mining Act to prohibit mining conducted on Federal lands, or require additional Federal control over mining conducted on Federal lands.
4. Amend the Clean Water Act to close loopholes that allow for pollution of treaty-protected waterways through expansive definitions of the terms "waste treatment system" and "fill material."
5. Add a requirement for "mandatory avoidance" of impacts on Tribal resources to every Federal statute that relates to infrastructure project permitting.
6. Enact new legislation to:
    a. Focus specifically on protecting Tribal resources (rather than relying on NHPA);
    b. Provide penalties or other consequences for any Federal agency that fails to engage in government-to-government consultation with a Tribe;
    c. Provide penalties or other consequences for private entities that damage or desecrate Tribal sacred sites;
    d. Strengthen Federal oversight of hydraulic fracturing activities.

We encourage Members of Congress and their staffs to reach out to Tribes in their states for more information on needed statutory changes to address the concerns raised by Tribes during this consultation process.

V. Key Principles and Recommendations

It is clear that Federal agencies can improve how they account for Tribal input in Federal infrastructure-related decisions. The Administration recognizes the need to better account for Tribal input in Federal decision-making on infrastructure projects. This goal is particularly relevant in the infrastructure context: in some circumstances, commencing infrastructure projects prior to adequate consultation may damage Tribal property, degrade Tribal territory, impact Tribal sacred sites, infringe upon Tribal treaty or other rights before the Federal Government fully understands the nature of the Tribal interests at issue, and/or result in project delays, disputes or litigation, and irreparable loss of American historical, cultural, and natural resources.

As such, this Report serves as a first step toward identifying and recommending actions and best practices that Federal agencies can implement to address concerns Tribes expressed through this consultation to improve the nation-to-nation relationship.

A. Key Principles for Consultation and Related Recommendations

A necessary underpinning of the Federal-Tribal relationship is effective communication with Tribes when Federal policies or actions may affect Tribal interests. Federal agencies can minimize subsequent disputes or litigation by broadly interpreting consultation triggers and, when in doubt, inquiring with the Tribe about its interests in a given project. Open, two-way communication respecting Tribal rights, seeking out common ground, and moving forward with consensus solutions is an essential part of the Federal-Tribal relationship. This Report articulates overarching principles that encourage effective communication with Tribes and meaningful consultation practices (Key Principles).

The Key Principles reflect Tribal feedback and should serve as a guidepost for Federal agencies to follow whenever their decisions may impact Tribes and their interests. Proactive, pre-construction consultation during infrastructure projects increases efficiency by mitigating the risk that infrastructure projects run into unforeseen problems, delays, or legal challenges down the road.

1. Act consistently with the government-to-government and trust relationship and treaty rights, and understand the historical context for Tribal interests. Actions by Federal agency leaders and staff should be consistent with Tribal sovereignty and the nation-to-nation and trust relationship between the Federal government and Tribes. Agencies, at both the leadership and staff level, play an important role in upholding that relationship. Regional and local offices of Federal agencies should understand Tribal interests and assess when a Federal action may impact a Tribe in their region, or a Tribe that has historical ties to their region. Those offices should develop expertise on the trust

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relationship, the treaty rights of Tribes in their region, and the historical context for Tribes' interests in lands outside their present reservations.

2. Establish staff-level and leadership-level relationships with Tribes. Relationships between Federal and Tribal officials can provide a foundation for effective communication and a meaningful understanding of a Tribe's concerns. Federal-Tribal relationships should be established at all levels—between leadership of agencies and Tribes, and also between staff at the local level of each government. These ongoing relationships will help to ensure that both the Tribe and Federal officials have the appropriate contacts for both staff-level discussions and formal consultation when specific projects are proposed. These relationships also offer the opportunity to assess the effectiveness of past consultations and potential changes for future consultations. These relationships provide Federal agencies the opportunity to work with the Tribe in considering development of a dispute resolution process before there is a breakdown in communication.

3. Initiate consultation at the earliest point possible, and provide sufficient information in the invitation. Federal agencies should reach out to Tribes and initiate consultation as soon as they are contemplating a Federal policy or action that may impact Tribal interests. Federal staff should already have an understanding of the Tribal interests, including the historical context, so that they can easily reach out to potentially affected Tribe(s) at the earliest possible moment. An invitation to consult is most effective when it provides Tribes with the information the Tribe needs to determine whether and to what degree its interests may be impacted. Tribes are busy governments that manage many incoming requests, so Federal agencies should provide information as clearly and succinctly as possible, and with as much advance notice as is feasible, to help facilitate Tribes' review.

4. Make good-faith efforts to obtain a response from the Tribe and be cognizant of the limits of Tribal resources. A Federal agency sometimes interprets a lack of response from a Tribe as a lack of interest in a project. However, this may instead reflect a failure to contact the appropriate person in the Tribe, that the Tribe has been deluged with similar inquiries from Federal agencies, or that the Tribal official in question is traveling, on sick leave, or otherwise out of the office, or any number of other reasons. Thus, Federal agencies should make several good-faith efforts with the Tribe through appropriate communications (e.g., emails and phone calls). Federal agencies should also be cognizant of limitations on Tribal human and financial resources. Where possible, Federal agencies should coordinate with sister agencies engaged with the same Tribe to identify efficiencies, such as co-locating meetings and consultations. Consultations should be held in Indian country, where possible.

5. Ensure Federal decision-makers actively participate. While staff-level dialogue is important, government-to-government consultations should involve the participation of the Federal agency decision-makers whenever possible to allow for on-the-spot problem-solving, dialogue, and appropriate follow up. This approach ensures everyone is in the

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room at the same time, which can prevent subsequent miscommunications and limit the need for follow up meetings to achieve consensus.

6. Seek to fully understand Tribal concerns, reach a consensus where possible, and when necessary, explain clearly why Tribal concerns could not be addressed. Tribes explained that consultations they considered "meaningful" occurred when the Federal Government took the time to understand the Tribe and its concerns about a potential Federal decision. Instead of assuming they understand the Tribe's position, Federal agencies should reach out to the Tribe to seek clarification and/or confirmation of the Tribe's views. Federal agencies should work to identify options for addressing Tribal concerns, and should be prepared to adapt to changing circumstances, contemplate creative problem solving, and exhaust every alternative to achieve mutually agreeable solutions. Agencies should explain the legal, practical, and policy constraints on their decision-making. As part of the government-to-government relationship, Federal agencies should respond in a timely manner to Tribal concerns and requests. At the end of the consultation process, Federal agencies should clearly communicate to the Tribe how the agency's ultimate decision addresses Tribal input, rather than just cataloguing the Tribe's concerns. Where the agency is unable to fully address Tribal concerns, the agency should explain its reasoning clearly.

7. Exchange information. Federal agencies should provide information about the Federal action being considered and the decision-making process to Tribes and obtain information from Tribes about Tribal interests in a given project. Where appropriate, Federal agencies should work with Tribes to protect the confidentiality of information provided to the Federal Government, and should be transparent about any limitations on their ability to protect confidentiality. Agencies should provide Tribes with key information related to a project, and should not require Tribes to submit Freedom of Information Act (FOIA) requests to obtain information about a project or action the Federal agency is considering.

8. Customize the consultation. Not all Tribes operate the same way. Each Tribe has its own customs and traditions, and some Tribes even have their own laws or protocols for Federal-Tribal consultation. Federal agencies should respect Tribal laws or protocols for Federal-Tribal consultation and work with Tribes to customize consultations and communications that respect the sovereign status of each Tribe and enhance Federal-Tribal communication. Effective consultation policies provide for local and regional diversity in working and communicating with Tribes, and allow flexibility for Federal agencies to tailor consultation to fit the needs of specific projects.

Key Principles for Consultation—Action Items:

1. Each Federal agency should undertake a thorough review of its Tribal consultation policies and practices to ensure that they reflect the Key Principles.

2. Each agency should provide a written analysis of its review to the WHCNAA and post its analysis online by April 1, 2017. The analysis should include a discussion of how its

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Tribal consultation policies and practices should be updated to reflect the Key Principles of this document.

3. Any agency finding that its consultation policies and practices are not in line with the Key Principles should develop a plan for amending the agency's governing policy, staffing, and training practices, provide the plan to the WHCNAA, post the plan online, and take other necessary actions to align its policies and practices with the Key Principles.

B. Recommendations for Actions beyond Consultation Policy Updates

Tribal feedback during the infrastructure consultations indicated that updating government-to-government consultation policies is just one step towards an improved nation-to-nation relationship. According to Tribes, the consultation policies are a secondary concern to the way in which Federal agencies implement (or fail to implement) them when Federal decisions impact Tribes and their interests. In order to begin addressing the Key Principles cited above, this Report recommends specific agency action in several areas.

Timing

Tribes raised concerns that they are either not invited to consult or are invited to participate in consultation far too late to have meaningful input in the agency decision-making process. For example, Tribes noted that their opportunity for input on a project has often come well after project proponents have selected a project site or route. To address such concerns, this Report offers the following recommendations to agencies.

Timing—Action Items:

1. Each Federal agency involved in infrastructure decision-making should use mechanisms to involve Tribes early in project planning whenever possible. This should include developing procedures that facilitate permit applicants and Tribes working together before applicants make siting decisions or other commitments that impede consideration of alternatives. Federal agencies should use programmatic, landscape-level planning mechanisms to ensure thoughtful and meaningful consultation on infrastructure projects. The Federal Communications Commission (FCC) uses an approach for such interaction that endeavors to ensure that Tribes are notified and have an opportunity to timely consult on the proposed construction of communications towers and antennas in connection with FCC-licensed services. The FCC's model is described in Appendix 6.

2. Each Federal agency involved in infrastructure decision-making should develop and implement procedures for consulting with and including Tribes as early as possible in the NEPA and NHPA processes, including pre-decisional scoping discussions with the Tribes. For instance, in 2010, the Bureau of Land Management proactively entered into a programmatic agreement under Section 106 that balanced the protection of historic properties, including an estimated 10,000 prehistoric rock art panels, with energy development. The project highlights the importance and benefits of early consultation and

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engagement in project planning of all interested parties, including Tribes. For more information, see Appendix 6. Further, Federal agencies should encourage Tribes to be cooperating agencies for any environmental impact statement.

Scope

Tribes raised concerns about ensuring that the scope of agency analysis for any particular project is broad enough to account for reasonably foreseeable consequences that will flow from the Federal approval, even if the Federal agency's jurisdiction is focused on a narrow aspect of the project. This is a complex topic that requires consideration of the specific legal authorities applicable to individual projects. However, agencies should take the following steps to help address Tribal concerns and to advance the public dialogue on these issues.

Scope—Action Items:

1. Federal agencies should work with Tribes to ensure robust indirect and cumulative impacts analysis in the NEPA documents. Indirect effects are causally related to proposals and thus important to decision making. Considering cumulative impacts provides critical context for decisions.[13] Tribal impacts are not necessarily limited to on-reservation activities. Often, off-reservation activities have the potential to impact Tribal resources and reserved rights.

2. Federal agencies should consider conducting regional analysis of their actions' potential impacts to Tribal interests, such as Tribal treaty rights or climate change impacts, associated with agency actions.

3. Congress should consider whether legislation specific to protection of Tribal resources is appropriate to ensure that Federal agencies are able to fully consider Tribal and other impacts that may flow from their approval of various aspects of infrastructure projects.

Relationship

Building stronger Federal-Tribal relationships is fundamental to better understanding Tribal concerns arising out of proposed infrastructure projects. It can also help mitigate the risk that infrastructure projects run into unforeseen problems, delays, or legal challenges down the road. In response to Tribal comments and recommendations relating to this issue, this Report offers several recommended actions to agencies for strengthening relationships with Tribes.

Relationship—Action Items:

1. Agencies should communicate and work with Tribes to identify areas of concern on an ongoing, non-project specific basis. This ongoing consultation activity would allow local agency decision-makers to know in advance when their decisions will impact Tribal

[13] *See* 40 C.F.R. §§ 1508.7, 1508.8(b).

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interests. Two good examples for agencies to consider in establishing relationships with Tribes include the Statement of Relationship between the U.S. Fish and Wildlife Service and the Gila River Indian Community, and the Memorandum of Understanding between the U.S. Department of Agriculture and the Great Lakes Fish and Wildlife Commission. Appendix 6 describes both of these partnerships in greater detail.

2. Permitting agencies should proactively work with Tribes and become familiar with Tribal interests and concerns. Permitting agencies should also review their procedures and regulations to determine where there are barriers to earlier and more meaningful Tribal involvement, and amend those authorities to address deficiencies. North Dakota Department of Transportation's work with Tribes and the establishment of the Tribal Consultation Committee described in Appendix 6 provides a good model for Federal agencies to consider.

Education & Training

While the Federal Government has developed some training (*see* "Working Effectively with Tribal Governments" and "Native American Sacred Sites and the Federal Government"), a need for additional training is apparent. Increased educational and training opportunities for Federal agency staffs that focus on working with and understanding Tribal governments and communities will increase Federal agencies' ability to effectively consult with Tribes. Such steps will also increase the likelihood that Tribal input received during consultation on infrastructure projects has a meaningful impact. This Report identifies several education and training steps for agency implementation.

Education & Training—Action Items:

1. Prioritize and make robust training available for all agency staff who may be involved in programs, technical assistance, and decision-making that could impact Tribes. For example, the Corps' Albuquerque District modified its standard practice to recognize Tribal expertise in the geographic area. A new standard practice includes providing culturally sensitive and academically based training to key staff, which uses both Federal and Tribal staff as instructors. See Appendix 6 for more details on this successful partnership. Agencies should also consider developing, with regional and central office staff, expertise on Tribes and Indian law or, at a minimum, have formal arrangements in place that enable agencies to access this expertise when needed. This action can help ensure that even agency staff without training or expertise can readily access agency experts on Tribal issues.

2. Each Federal agency should evaluate its existing education and training practices to ensure staff have an appropriate understanding of basic Indian law and policy, treaty rights, and the Federal-Tribal relationship.

3. WHCNAA should work with agencies to ensure that appropriate education and training opportunities are made available to Federal employees whose work may impact Tribes. For example, a Federal agency could open certain education and training opportunities to

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Federal employees from sister agencies and share information about upcoming trainings dates via the WHCNAA.

4. FPISC should ensure that it has staff with expertise on Tribal issues who can help ensure that Tribal rights are understood and protected by all FPISC agencies. Such steps might include identifying a primary point of contact for FPISC staff who is experienced in Tribal consultation. This individual could be responsible for working with agencies to ensure Tribal rights are considered in infrastructure development on Indian lands, or lands where Indian Tribes hold natural, historic, cultural, or spiritual resources.

Integrating Tribal Input into Existing Processes

Tribes highlighted a need to reform agency processes for integrating Tribal input into Federal decision-making. In response, this Report offers several steps to agencies for incorporating Tribal input into agency decision-making, with special attention paid to the fact that even off-reservation projects can impact Tribes, such as when their ancestral homelands and ceded territories are affected, or when a project could degrade waterways, reserved water rights, or hunting and fishing resources to which Tribes have rights.

Integrating Tribal Input into Existing Processes—Action Items:

1. Agencies should review their own internal clearance processes to ensure Departmental review processes take Tribal interests into account. For example, the internal review process at the U.S. Department of Agriculture requires that the Office of Tribal Relations, in addition to the Office of Civil Rights, Office of General Counsel, Office of Budget and Policy Analysis, etc. review major rules, notices, and other policy actions that sub-agencies intend to publish before they are provided to the Secretary's office for final review and decision.

2. Federal agencies should use the CEQ and ACHP guidance document, "NEPA and NHPA: A Handbook for Integrating NEPA and Section 106" (March 2013), to improve integration of Tribal concerns into the NEPA and NHPA process. Federal agencies should also refer to CEQ's guidance on Non-Federal Cooperating Agencies for information on including Tribes as cooperating agencies.[14] In that document, CEQ emphasizes that before the scoping process, agencies should identify Tribal governments that may have "special expertise" that may aid in the preparation of the environmental impact statement. Tribes should be solicited to act as cooperating agencies due to their special expertise regarding on-reservation impacts, off-reservation impacts, off-reservation treaty, former treaty, and aboriginal areas. Tribes also provide important input on the development of mitigation measures to ensure these measures are acceptable and culturally appropriate. When a Tribe does not have the resources to be a cooperating

[14] Council on Environmental Quality, "Memorandum for Heads of Federal Departments and Agencies: Designation of Non-Federal Agencies to be Cooperating Agencies in Implementing the Procedural Requirements of NEPA," July 28, 1999.

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agency, Federal agencies should continue discussions with the Tribe and provide them adequate information to enable them to engage in the NEPA process.

3. Federal agencies should research resources and how methods could be established to make it easier for those agencies to determine which Tribal governments might be impacted by a particular Federal undertaking. Such resources and methods could then help the lead Federal agency to work with the project proponent and develop a notice to the appropriate Tribal governments that would: 1) notify them of the proposed project; 2) identify the area(s) of concern for the project; 3) provide a timeframe for Tribal input or request for consultation; and 4) conduct a meaningful and respectful Tribal consultation. Federal agencies should also establish methods to ensure agency accountability for the consideration, and possible integration of Tribal input into agency decisions.

4. When looking at decision-making processes, agencies should consider early and robust Tribal involvement to prevent subsequent delays in permitting and project development resulting from Tribal objections or lawsuits. For example, FPISC could better define how it will engage with Tribes, consistent with FAST-41 requirements. FAST-41 states that the FPISC "shall meet not less frequently than annually with groups or individuals representing State, Tribal, and local governments that are engaged in the infrastructure permitting process."[15] FPISC should work with Tribes in advance of these meetings to identify ways to make these interactions most productive and, based on what is learned, develop a clear framework for regular engagement going forward.

5. The Interagency Working Group on Environmental Justice[16] should consider preparing guidance on how to properly analyze infrastructure-related environmental justice impacts on Tribal communities.

Resources & Tribal Capacity

Tribes noted that their own capacity to consult with multiple Federal agencies can be a barrier to participating in meaningful consultation. Additionally, Federal agencies recognize the limits of their own ability to meaningfully consult with 567 federally recognized Tribes in a coordinated, thoughtful, and consistent manner. This Report recommends continued discussion, research, and consultation on how to address these challenges of capacity, resources, and bandwidth.

[15] 42 U.S.C. § 4370m-1(c)(2)(C).

[16] The Interagency Working Group on Environmental Justice facilitates the active involvement of all Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations and low-income populations.

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Resources & Tribal Capacity—Action Items:

1. Agencies, OMB, and Congress should look for ways to help Tribes increase their capacity to participate in meaningful consultation. This support could come in the form of new funding streams, training and technical support to Tribes, structures for coordinating consultation across geographies or agencies, and beyond.

2. Agencies, OMB, and Congress should consider committing resources to helping Tribes and Tribal Historic Preservation Officers (TPHOs) fully implement their responsibilities under NHPA Section 106.

3. Agencies should endeavor to consult with Tribes on Tribal homelands or at a location identified by the Tribe.

4. Agencies, OMB, Congress, Tribes, and stakeholders should work to organize and coordinate Tribal consultation practices, procedures, and schedules across agencies in order to reduce the burden on Tribes associated with the need to consult with several different Federal entities.

Specific Agency Actions Underway

Tribes repeatedly raised several specific policy issues throughout the consultation on Federal infrastructure decisions. This Report responds to them here with specific actions agencies are taking to address them.

1. Appendix C. The Army Corps of Engineers will update its Appendix C (33 C.F.R. 325) in 2017 in response to extensive Tribal comments calling for Appendix C's rescission or revision. (*See* "Federal Consultation with Tribes Regarding Infrastructure Decision-Making," transcript taken November 17, 2016, Rapid City, South Dakota, p. 34, lines 7-10, statement of Assistant Secretary of the Army Civil Works Jo-Ellen Darcy, committing to "improve" Appendix C).

2. Tribal input under NHPA Section 106. Since so many of the issues raised in the consultation sessions were related to the NHPA Section 106 process, the Advisory Council on Historic Preservation will be releasing in early 2017 a detailed report that outlines specific ACHP responses and recommendations for other agency actions to improve Tribal input in the Section 106 review of infrastructure projects.

3. Sacred Sites Protection. The Departments of the Army, Interior, Agriculture, and Energy, and the Advisory Council on Historic Preservation, signatories to the Memorandum of Understanding on Interagency Collaboration and Coordination for the Protection of Indian Sacred Sites, will integrate the findings and tribal recommendations in this report into their work under the MOU.

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C. Next Steps for Federal Agencies

To promote interagency accountability for the recommendations made in this Report and to provide structure for ongoing interagency focus on how to improve the Federal infrastructure permitting process, Federal agencies should engage with the WHCNAA and Tribes.

Each of the agencies responsible for infrastructure projects should designate senior career staff representatives to be the primary points-of-contact for coordinating their respective agencies' responses to the Report. These representatives should coordinate with the WHCNAA Executive Director to provide regular updates on the progress of responding to and/or implementing the recommendations. The WHCNAA Executive Director plans to provide a briefing to the WHCNAA Chair on agency efforts to respond to the recommendations included in this Report. The WHCNAA Chair may then discuss the ongoing progress and accomplishments of the agencies with Cabinet members and other WHCNAA members at the first WHCNAA principals meetings of 2017, which is expected to occur no later than Spring 2017.[17]

The WHCNAA Executive Director also plans to also coordinate with the White House Office of Public Engagement and Intergovernmental Affairs and the White House Domestic Policy Council on a Federal-Tribal summit where the outcomes of the recommendations will be discussed with Tribal leaders. This discussion could take place at the annual White House Tribal Nations Conference. Ongoing engagement and communications with Tribal leaders on the interagency progress of the Report will be crucial to ensuring that this Report results in sustainable improvements to the Federal infrastructure permitting process.

VI. Conclusion

Tribes experience both benefits and adverse effects from infrastructure projects. Through meaningful government-to-government consultation regarding Federal decisions on these projects, Federal agencies can often maximize the benefits and minimize the adverse effects on Tribes and Tribal communities. Meaningful consultation that takes Tribal interests into account early in the project planning and Federal decision making process can also reduce the likelihood that infrastructure projects encounter unexpected delays that stem from unforeseen disputes and minimize potential delays due to disputes or litigation. This Report encourages Federal agencies to take short-term actions to improve their consultation policies and practices. In the longer term, agencies should work independently and through the WHCNAA to identify and address statutory, regulatory, and policy barriers to soliciting and addressing Tribal input. Through these continued efforts, the Federal Government can improve Federal decision-making processes that affect Tribal lands, resources, and treaty rights to ensure that those decisions are fully consistent with our obligations to Tribes.

[17] Per Executive Order 13647, WHCNAA principals meet at least three times per year.

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Appendix 1. Dear Tribal Leader Letter

OCT 11 2016

Dear Tribal Leader:

On September 23, 2016, the Departments of the Interior, Justice, and Army, invited you to consult on how, prospectively, Federal decisionmaking on infrastructure projects can better allow for timely and meaningful tribal input. In that letter, we provided some general information on planned locations for the consultation sessions and committed to providing a framing paper with additional detail.

With this letter, we are providing:

- An updated detailed schedule which includes an additional consultation session.
- The framing paper providing background and questions for your consideration.

This information is also available at:

- http://www.bia.gov/WhoWeAre/AS-IA/ORM/TribalInput/index.htm.

As a reminder, if you would like to provide written input, please send it by email to: consultation@bia.gov or by mail to: Office of the Assistant Secretary – Indian Affairs, Office of Regulatory Affairs & Collaborative Action, 1849 C Street, NW, MS 3642,* Washington, DC 20240. We will consider all written correspondence received by Friday, November 30, 2016.

We look forward to your feedback as to how our Agencies, and the Federal Government as a whole, can improve Federal decisionmaking processes that affect tribal lands, resources, and treaty rights to ensure that those decisions are fully consistent with our obligations to tribal nations.

Sincerely,

Lawrence S. Roberts
Principal Deputy Assistant
Secretary – Indian Affairs

Enclosures

*Please note the updated mail stop (MS) number

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Appendix 2. Framing Paper

FEDERAL CONSULTATION WITH TRIBES REGARDING INFRASTRUCTURE DECISION-MAKING

FRAMING PAPER

FALL 2016

As discussed in the September 23, 2016, consultation invitation you received, Federal agencies have committed to broad review and consultation on how, prospectively, Federal decision-making on infrastructure projects can better allow for timely and meaningful Tribal input from Federally recognized Tribes. The invitation letter identified two broad questions of particular interest to Federal agencies. Building on those two questions, Federal agencies are interested to learn best practices for Tribal consultation and to ask questions in two broad categories:

1) *Promoting Meaningful Government-to-Government Engagement within the Existing Framework.* How can Federal agencies better ensure meaningful Tribal input into infrastructure-related reviews and decisions, to protect Tribal lands, resources, and treaty rights within the existing framework? This category of questions includes topics related to how a Federal agency implements existing policies and procedures, staff training and expertise, how an agency approaches Tribal consultation, and what can be done to promote Tribal capacity to participate in timely and meaningful consultation.

2) *Identifying Any Necessary Change to the Existing Framework.* Where and when does the current framework present barriers to meaningful consultation? What changes to the current framework would promote these goals? This category of questions includes potential change to regulations, policies, and procedures, as well as statutory changes that would increase timely and meaningful consultation.

These questions are meant to serve as a reference point for participants and are not intended to limit the conversation. We have also included additional questions for your input below, following the background information on the existing framework.

This consultation will focus on how to ensure timely and meaningful Tribal input on future Federal decisions on infrastructure and infrastructure-related projects that have Tribal implications. While infrastructure is difficult to define, for purposes of this consultation, infrastructure projects include, but are not limited to, the examples listed in the text box in the background section.

Background

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Infrastructure projects have grown in scope and complexity over time, as reflected in the increase in number and variety of existing laws and regulations that address infrastructure-related processes. Infrastructure is difficult to define because it encompasses a wide array of physical assets. For example, infrastructure projects include, but are not limited to, the examples listed in the text box on the right.

Examples of Infrastructure:

- Surface transportation, including highway, rail, and transit projects
- Airport capital improvement projects
- Ports and waterways
- Water resource projects
- Renewable energy generation
- Electricity transmission
- Storm-water infrastructure
- Broadband internet
- Oil or gas pipelines

The Federal Government often plays a role in reviewing these infrastructure projects. There are Federal statutes, regulations and Executive Orders that govern Federal review of infrastructure-related projects or potential impacts of infrastructure;[18] together, these create a framework that provides designated Federal agencies with the authority and responsibility to review particular aspects of the infrastructure or its impacts.

For example, statutes such as the Native American Graves Protection and Repatriation Act, the National Historic Preservation Act, and the Archeological Resources Protection Act of 1979 contain provisions addressing Tribal input into Federal decision-making under certain circumstances, such as when there will be excavation of cultural items. In addition to the statutes, Federal agencies may also have implementing regulations or guidance that assist with interpreting the relevant statute. In addition to those more specific requirements, there are also Presidential Executive Orders that direct Federal agencies to develop policies and best practices for working with Tribal governments. For example, the Executive Order on Consultation and Coordination with Indian Tribal Governments requires Federal agencies to have consultation policies in place to ensure meaningful and timely input by Tribal officials in the development of Federal policies that have Tribal implications.[19] And under the Executive Order for Improving Performance of Federal Permitting and Review of Infrastructure Projects, Federal agencies are responsible for including best practices for enhancing Federal, Tribal, and State government

[18] The Federal Environmental Review & Authorization Inventory chart, which describes many applicable rules and regulations as well as review requirements, is available at: https://www.permits.performance.gov/tools/federal-environmental-review-and-authorization-inventory. This website also provides background on the Federal "Permitting Dashboard" for certain Federal infrastructure projects.

[19] See the following webpage for a list of consultation policy examples: https://www.whitehouse.gov/sites/default/files/federal_agency_tribal_consultation_resources_updated.pdf

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coordination on permitting and review processes and engaging early in the infrastructure permitting or review process.[20]

These laws and policies are part of the existing framework for Tribal input. Additional tools that are part of the legal framework are described more fully in Attachment A. We are interested in Tribes' thoughts both on ways to work within this existing framework and ways the framework might be improved.

Promoting Meaningful Government-to-Government Engagement within the Existing Framework

One of the purposes of this consultation is to obtain Tribal input on how the Federal government can more consistently, effectively, and meaningfully engage with Tribal governments on infrastructure-related projects. The existing framework imposes certain requirements and limitations on the Federal role in infrastructure decisions. For example, for certain projects, a Federal agency may only have authority to address a specific aspect of a larger infrastructure project (e.g., approving a right-of-way or a dredge-and-fill permit). In some cases, Federal agencies may not learn of the project until late in the infrastructure development process.

Within the existing framework both Federal agencies and Tribes have considerable discretionary authority as a result of variation in agency regulations and policies. Different agency structures, mission priorities, staffing, resources, cultures, and relationships with Tribes result in Federal agencies taking different approaches when implementing consultation. Despite this variation, both Federal agencies and Tribes have demonstrated the capacity to successfully engage in consultation. For example, the development of the landscape-level Desert Renewable Energy Conservation Plan (DRECP) was a deliberate attempt by numerous Federal agencies to meaningfully engage with Tribes. The DRECP is designed to conserve and manage plant and wildlife communities in the desert regions of California while facilitating the timely permitting of compatible renewable energy projects.

Federal agencies heavily engaged Tribes affected by the DRECP. For instance, prior to formal consultation, the agencies held two summits to address longstanding concerns Tribes had on impacts to traditional use areas and increasing development of energy resources. The agencies then held formal consultation over a three-year period and included extensive outreach and coordination, numerous technical meetings, meetings where Tribes were engaged in creating maps to incorporate into the DRECP, and individual meetings with 40 Federally recognized Tribes. Federal agencies also held conferences and workshops and ensured Tribes were provided with information, maps, presentations, access to executive-level Federal management, funding sources, and other specialized services. Not only did these meetings solicit Tribal input and incorporate Tribal issues into future development planning in the DRECP, the targeted outreach

[20] Executive Order 13604 on Improving Performance of Federal Permitting and Review of Infrastructure Projects, March 22, 2012.

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led to the exchange of information and discussion of concerns that shaped the actual development of the DRECP.

It is our hope that this consultation on infrastructure decision-making will include discussion of other examples of effective Tribal engagement, and that together we might identify underlying principles common to all meaningful consultations that are achievable within the current statutory framework. Some of these principles may include: 1) accountability for Federal agencies to identify potential impacts on Tribes, 2) providing timely and complete notice to Tribes, and 3) working collaboratively with Tribes to address their concerns or mitigate effects. Among other questions presented, this consultation seeks additional examples of projects that Tribes view as models for successful, meaningful consultations.

To help identify common principles for meaningful Tribal input into Federal infrastructure-related decision making and opportunities for building both Tribal and Federal capacity, we are interested in Tribes' views on the following questions:

- What are examples of consultations on infrastructure projects that you consider to be meaningful? Why did you consider these consultations to be meaningful?
- What factors do you consider when determining whether a consultation on an infrastructure project is meaningful? What should agencies take into account when determining whether or not a consultation is meaningful? What are examples of collaboration (other than formal consultation) that you have found to be useful? Why did you consider these collaborations to be meaningful?
- Are there specific agencies that you find to be particularly good at consultation and what is it about how these agencies go about consultation that makes it stand out?
- What can Federal agencies do to better support Tribes' ability to provide input into infrastructure decisions? What are examples of good practices that enable Tribes to provide their views and input early in the development process or prior to Federal review of an infrastructure project?
- What steps can Federal agencies take to ensure that Federal and non-Federal parties engage meaningfully with Tribes without overwhelming Tribes' resources?

Identifying Any Necessary Change to the Existing Framework

We are also interested in Tribes' views on whether changes to the existing framework – whether to regulations, agency policies, statutes, or other legal requirements – are necessary to ensure meaningful Tribal input into infrastructure-related reviews and decisions.

In considering whether and how changes to the existing framework could result in more successful Tribal consultation, we are particularly interested in Tribes' thoughts on the following questions:

- What are good examples of existing agency policies and regulations that other Federal agencies should consider replicating?

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- Does the existing framework afford ample opportunity for Tribal input? If not, what additional opportunities should there be and what would this look like?
- When and where do you currently encounter obstacles to meaningful Tribal engagement that could be addressed through changes to regulation, agency policies, or statute? What are these obstacles and what changes would best address them?

Federal agencies understand that Tribes receive many notices for consultation and requests for input from numerous Federal agencies on various projects. We recognize the cost of participating in this consultation and appreciate your willingness to participate in these discussions and offer candid feedback. As stated earlier, the discussions are not limited to the questions presented here. We welcome any input relevant to the broader topic, and this framing paper and the questions may evolve over the course of the consultation based on Tribal input.

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Attachment A
Legal Framework For Tribal Input

- Executive Order 13175, Consultation and Coordination With Indian Tribal Governments (November 6, 2000) – E.O. 13175 requires Federal agencies to have an accountable process to ensure meaningful and timely input by Tribal officials in the development of Federal policies that have tribal implications. President Obama reinforced this Executive Order in a November 5, 2009 Memorandum entitled "Tribal Consultation." President Obama's memorandum stated his Administration's commitment to "regular and meaningful consultation and collaboration with [T]ribal officials on policy decisions that have [T]ribal implications..."

- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations (February 11, 1994) – E.O. 12098 requires Federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental impacts of their actions in minority and low-income populations. Each Federal agency responsibility set forth under the order applies equally to Native American programs. In addition, the Department of the Interior, in coordination with the Interagency Working Group established under the E.O, and after consultation with Tribal leaders, coordinates steps taken under the order that address Federally-recognized Tribes.

- Executive Order 13604, Improving Performance of Federal Permitting and Review of Infrastructure Projects (March 22, 2012) – E.O. 13604 directs that Federal permitting and review processes must provide a transparent, consistent, and predictable path for both project sponsors and affected communities . . . . [Federal permitting and review processes] must rely upon early and active consultation with State, local, and Tribal governments to avoid conflicts or duplication of effort, resolve concerns, and allow for concurrent rather than sequential reviews.

- Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. §§ 3001 *et seq.* – If there will be excavation of cultural items, including human remains and objects of cultural patrimony from Federal lands, the Federal agency must consult with the appropriate Tribes prior to excavation or removal after inadvertent discovery. If the excavation will occur on "Native American or Native Hawaiian Lands" then NAGPRA requires the consent of the Tribe or Native Hawaiian organization.

- National Historic Preservation Act (NHPA), 16 U.S.C. §§ 470 *et seq.* – If an activity could affect historic properties (e.g., properties that are eligible for or included in the National Register of Historic Places), then the Federal agency must engage in "Section 106 review" (as distinguished from a government-to-government consultation) with Tribes that may attach religious and cultural significance to historic properties.

- Archeological Resources Protection Act of 1979 (ARPA), 16 U.S.C. §§ 470aa–470mm – ARPA requires Federal agencies to consult with Tribes before permitting archeological excavations on Tribal lands.

National Environmental Policy Act (NEPA) 42 U.S.C. §§ 4321–4347 – NEPA procedures require public involvement including coordination with Tribes. This coordination should not be confused with a Federal agency's responsibility to engage in government-to-government consultation with Tribes. CEQ guidance encourages more active solicitation of Tribal governments for participation as cooperating agencies in NEPA documents

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Appendix 3. Consultation Session Locations and Federal Attendees

10/11/2016	10/25/2016	10/27/2016	11/02/2016
Phoenix, Arizona	**Seattle, Washington**	**Albuquerque, New Mexico**	**Billings, Montana**
Listening Session	**Tribal Consultation**	**Tribal Consultation**	**Tribal Consultation**
Department of the Interior (DOI): Office of the Secretary, Assistant Secretary for Indian Affairs (ASIA), Bureau of Indian Affairs (BIA), Officer of the Solicitor (SOL), Bureau of Land Management (BLM), Office of Regulatory Affairs (ORA) **Department of Justice** (DOJ): Office of Tribal Justice (OTJ), Environment and Natural Resources Division (ENRD) **U.S. Army**: Assistant Secretary for Civil Works (ASACW), Army Corps of Engineers (USACE) **Department of Agriculture** (USDA): Office of Tribal Relations, Rural Development (RD), Natural Resources Conservation Service (NRCS)	**DOI**: ASIA, SOL, BLM DOJ: OTJ **Army**: ASACW, USACE **USDA**: NRCS, RD **Department of Energy** (DOE): Tribal Liaison **Advisory Council on Historic Preservation** (ACHP) **Department of Commerce** (DOC): National Oceanic and Atmospheric Administration (NOAA) **USDA**: Forest Service (FS)	**DOI**: ASIA, SOL, BLM, Fish and Wildlife Service (FWS) **DOJ**: OTJ **Army**: ASACW, USACE ACHP **USDA**: NRCS, RD **Federal Energy Regulatory Commission** (FERC) **DOE**: Tribal Liaison	**DOI**: BIA, ASIA, BLM **DOJ**: OTJ **Army**: ASACW, USACE ACHP **USDA**: FS **Federal Infrastructure Permitting Improvement Steering Council** (FPISC) **DOE**: Western Area Power Administration **Department of Transportation** (DOT): Office of the Assistant Secretary for Tribal Government Affairs **Federal Aviation Administration** (FAA)
11/10/2016	**11/15/2016**	**11/17/2016**	**11/21/2016**
Old Town, Maine	**Minneapolis, Minnesota**	**Rapid City, South Dakota**	**Teleconference**

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Tribal Consultation	Tribal Consultation	Tribal Consultation	Tribal Consultation
DOI: SOL, ORA **DOJ:** OTJ **Army:** ASACW, USACE **ACHP** **USDA:** NRCS, FS **FPISC** **DOE:** Office of the Chief Operating Officer (COO) **DOT:** Office of the Assistant Secretary for Tribal Government Affairs	**DOI:** ASIA, SOL, BLM, FWS, ORA **DOJ:** OTJ **Army:** ASACW, USACE **ACHP** **USDA:** FS, NRCS, RD **DOE:** Office of Energy Policy and Systems Analysis **FPISC** **FAA** **DOT:** Office of the Assistant Secretary for Tribal Government Affairs **Environmental Protection Agency (EPA):** Office of Tribal and International Affairs	**DOI:** ASIA, SOL, BLM, National Parks Service (NPS) **DOJ:** OTJ **Army:** ASACW, USACE **ACHP** **USDA:** FS, NRCS, RD **FPISC** **DOE:** Office of Energy Policy and Systems Analysis **FAA** **DOT:** Office of the Secretary of Transportation, Tribal Transportation Program	**DOI:** ASIA, SOL, FS **DOJ:** OTJ, ENRD **Army:** ASACW, USACE **ACHP** **USDA:** NRCS, Office of Tribal Relations **DOT:** Office of the Assistant Secretary for Tribal Government Affairs

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Appendix 4. Agency Consultation Policies and Related Guidance

U.S. Department of Agriculture

Point of Contact: Office of Tribal Relations
Email: tribal.relations@osec.usda.gov
Phone: (202) 205-2249

Consultation Policies:
Agency-wide Policy: Departmental Regulation 1350-002: Tribal Consultation, Coordination, and Collaboration
Animal Plant Health Inspection Service: Consultation with Elected Leaders of Federally Recognized Indian Tribes
Forest Service: FSM 1500 – External Relations, Chapter 1560 – State, Tribal, County, and Local Agencies; Public and Private Organizations
FSH 1509.13 – American Indian and Alaska Native Relations Handbook, Chapter 10 – Consultation with Indian Tribes and Alaska Native Corporations
Natural Resources Conservation Service: GM_410_405 Part 405 – American Indians and Alaska Natives

U.S. Department of Commerce

Point of Contact: Office of the Secretary of Commerce/OLIA
Phone: (202) 482-3663

Consultation Policies:
Agency-wide Policy: Tribal Consultation and Coordination Policy of the U.S. Department of Commerce
National Oceanic and Atmospheric Administration: Procedures for Government-to-Government Consultation With Federally Recognized Indian Tribes and Alaska Native Corporations
U.S. Census Bureau: Handbook for Consultation with Federally-Recognized Indian Tribes American and Alaska Native Policy of the U.S. Census Bureau

U.S. Department of Defense

Point of Contact: A. Joseph (Joe) Sarcinella, Senior Advisor and Liaison for Native American Affairs to the Office of the Secretary of Defense
Email: andrew.j.sarcinella.civ@mail.mil
Phone: (571) 372-6890
Point of Contact: Charles (Chip) Smith, Assistant for Environment, Tribal & Regulatory Affairs, Office of the Assistant Secretary of the Army (Civil Works)
Email: charles.r.smith567.civ@mail.mil
Phone: (703) 693-3655
Point of Contact: (Army Corps of Engineers): Lisa Morales, Senior Tribal Liaison USACE Headquarters.
Email: Lisa.T.Morales@usace.army.mil
Phone: (202) 761-7664

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Consultation Policies:
DoD and the Military Departments: www.denix.osd.mil/na/policy
DoD Department of Defense Instruction 4710.02: DoD Interactions With Federally-Recognized Tribes (2006); 4710.03: Consultation Policy With Native Hawaiian Organizations (2011)
Army: American Indian and Alaska Native Policy (2012)
Marine Corps: Marine Corps. Order 5090: Section 2
Navy: SECNAV Instruction 11010.14A: Department of the Navy Policy for Consultation With Federally-Recognized Indian Tribes (2005)
Air Force: Air Force Instruction 90-2002: Air Force Interactions With Federally-Recognized Tribes (2014)
U.S. Army Corps of Engineers: USACE Tribal Consultation Policy

U.S. Department of Education
Point of Contact: Ron Lessard, Chief of Staff, White House Initiative on American Indian and Alaska Native Education
Consultation Policies:
http://www2.ed.gov/about/offices/list/oese/oie/tribalpolicyfinal.pdf

U.S. Department of Energy
Point of Contact: Chris Deschene, Director, Office of Indian Energy
Email: chris.deschene@hq.doe.gov
Phone: (202) 586-1272

Consultation Policies
Agency-wide Policy: U.S. Department of Energy American Indian and Alaska Native Tribal Government Policy
Bonneville Power Administration: BPA Tribal Policy

U.S. Department of Health and Human Services
Point of Contact: Stacey Ecoffey, Principal Advisor for Tribal Affairs
Email: consultation@hhs.gov
Phone: (202) 690-6060

Consultation Policies
Agency-wide Policy: U.S. Department of Health and Human Services Tribal Consultation Policy
Administration for Children and Families: Administration for Children and Families Tribal Consultation Policy
Agency for Healthcare Research and Quality: AHRQ Tribal Consultation Policy
Centers for Disease Control and Prevention / Agency for Toxic Substances and Disease Registry: CDC/ATSDR Tribal Consultation Policy
Centers for Medicare and Medicaid Services: Centers for Medicare and Medicaid Services Tribal Consultation Policy
Health Resources & Services Administration: HRSA Tribal Consultation Policy

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Indian Health Service: Indian Health Service Tribal Consultation Policy
National Institutes of Health: National Institutes of Health Guidance on the Implementation of the HHS Tribal Consultation Policy

U.S. Department of Homeland Security

Point of Contact: David Munro, Director of Tribal Affairs
Email: david.munro@hq.dhs.gov
Phone: (202) 447-4239

Consultation Policies

Agency-wide Policy: Department of Homeland Security Tribal Consultation Policy
Federal Emergency Management Agency (FEMA): FEMA Tribal Consultation Policy
FEMA: Tribal Policy

U.S. Department of Housing and Urban Development

Point of Contact: Rodger Boyd, Deputy Assistant Secretary for Native American Programs
Email: Rodger.J.Boyd@hud.gov
Phone: (202) 402-3326

Consultation Policies

Agency-wide Policy: Government-to-Government Tribal Consultation Policy

U.S. Department of the Interior

Point of Contact: Miles Janssen, Senior Counselor to the Assistant Secretary-Indian Affairs
Email: Consultation@bia.gov
Phone: (202) 208-7163

Consultation Policies

Agency-wide Policy: Department of the Interior Policy on Consultation with Indian Tribes
Bureau of Indian Affairs: Bureau of Indian Affairs Government-to-Government Consultation Policy
Bureau of Land Management: Tribal Consultation Under Cultural Resources
Bureau of Ocean Energy Management: Bureau of Ocean Energy Management Tribal Consultation Guidance
Bureau of Reclamation: Protocol Guidelines: Consulting with Indian Tribal Governments
National Park Service: Management Policies 2006 (Section 1.11, Page 19)
Office of Surface Mining Reclamation and Enforcement: Tribal Consultation and Protection of Tribal Trust Resources
U.S. Fish and Wildlife Service: Tribal Consultation Handbook
U.S. Geological Survey: Policy on Employee Responsibility Towards American Indians and Alaska Natives

U.S. Department of Justice

Point of Contact: Tracy Toulou, Director, Office of Tribal Justice
Email: OTJ@usdoj.gov
Phone: (202) 514-8812

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Consultation Policies
Agency-wide Policy: Department of Justice Policy Statement on Tribal Consultation
Attorney General Guidelines Stating Principles for Working with Federally Recognized Indian Tribes

U.S. Department of Labor
Point of Contact: Jeremy Bishop, Senior Legislative Assistant/Principal Advisor for Tribal Affairs
Email: bishop.jeremy@dol.gov
Phone: (202) 693-4600

Consultation Policies
Agency-wide Policy: Tribal Consultation Policy

U.S. Department of State
Email: TribalConsultation@state.gov

Arctic Council Chairmanship
Roberta Burns, Office of the Special Representative for the Arctic
BurnsRR@state.gov - +1 (202) 647-1009

Erin S. Robertson, Bureau of Oceans, Environment and Science
RobertsonES@state.gov - +1 (202) 485-2874

Columbia River Treaty
Kirsten Selinger, Bureau of Western Hemisphere Affairs
SelingerKB@state.gov - +1 (202) 647-2256

Democracy, Human Rights, Labor
Lynn M. Sicade, Bureau of Democracy, Human Rights, Labor
SicadeLM@state.gov - +1 (202) 647 2362

International Development and Assistance
Brian J. Keane, U.S. Agency for International Development
bkeane@usaid.gov - +1 (202) 712-0712, +1 (202) 712-0712

International Whaling Commission
Elizabeth Phelps, Bureau of Oceans, Environment and Science
PhelpsE@state.gov - +1 (202) 647-4935

Legal issues
James L. Bischoff, Office of the Legal Advisor
BischoffJL@state.gov - + 1 (202) 647 2197

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Recovery of Native American Cultural Property
Allison R. Davis, Bureau of Educational and Cultural Affairs
DavisAR@state.gov - +1 (202) 632-6305

Transboundary Infrastructure, Climate Change and Sustainability
Jack Jackson Jr., Bureau of Oceans, Environment and Science (Please note that I will be leaving my post on January 20, 2017)
JacksonJ3@state.gov - +1 (202) 647 8309

UN World Conference on Indigenous Peoples
Linda Lum – Bureau of International Organizations
LumLL@state.gov - +1 (202) 663 1632
Laure Phipps – Mission to the United Nations
PhippsLL@state.gov - +1 (212) 415-4204

Western Hemisphere Affairs
Zakiya Carr Johnson, Bureau of Western Hemisphere Affairs
CarrJohnsonZS@state.gov - +1 (202) 736-7409

U.S. Department of Transportation

Point of Contact: Deputy Assistant Secretary for Tribal Government Affairs
Email: tribalconsultation@dot.gov
Phone: (202) 366-4573

Consultation Policies
Agency-wide Policy: U.S. Department of Transportation Tribal Consultation Plan
Federal Aviation Administration: American Indian and Alaska Native Tribal Consultation Policy and Procedures
Federal Highway Administration: U.S. Code Title 23—Highways (Section 135(e)(2) and (f)(2)(c)

U.S. Department of Treasury

Point of Contact: Beverly Ortega Babers, Deputy Assistant Secretary for Management & Budget and Point of Contact for Tribal Consultation
William Norton, Senior Advisor for Tribal Affairs (william.norton@treasury.gov)
Email: tribal.consult@treasury.gov
Phone: (202) 622-2200

Consultation Policies
Agency-wide Policy: Department of Treasury Notice of Interim on Tribal Policy

U.S. Department of Veterans Affairs

Point of Contact: Stephanie Birdwell, Director, Office of Tribal Government Relations
Email: StephanieElaine.Birdwell@va.gov
Phone: (202) 461-7400

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Consultation Policies
Agency-wide Policy: Department of Veterans Affairs Tribal Consultation Policy

Environmental Protection Agency
Point of Contact: Tribal Consultation Opportunities

Consultation Policies
Agency-wide Policy: EPA Policy on Consultation and Coordination with Indian Tribes

Small Business Administration
Point of Contact: David Sanborn, Assistant Administrator, Office of Native American Affairs
Email: David.Sanborn@sba.gov
Phone: (202) 401-1580

Consultation Policies
Agency-wide Policy: U.S. Small Business Administration Tribal Consultation Policy

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INDEPENDENT AGENCIES AND GOVERNMENT CORPORATIONS

1. **Advisory Council on Historic Preservation**
   Point of Contact: Valerie Hauser, Director, Office of Native American Affairs
   Email: vhauser@achp.gov
   Phone: 202-517-0194

   Consultation Policies
   Consultation and Coordination with Indian Tribal Governments
   Policy Statement Regarding the ACHP's Relationships with Indian Tribes

2. **Federal Communications Commission**
   Point of Contact:
   Email:
   Phone:

   Consultation Policies
   Statement of Policy on Establishing a Government-to-Government Relationship with Indian Tribes

3. **Federal Energy Regulatory Commission**
   Point of Contact:
   Email:
   Phone:

   Consultation Policies
   Tribal Policy Statement

4. **General Services Administration**
   Point of Contact:
   Email:
   Phone:

   Consultation Policies
   GSA Policy Toward Native American and Alaska Native Tribes

5. **National Indian Gaming Commission**
   Point of Contact:
   Email:
   Phone:

   Consultation Policies
   National Indian Gaming Commission Policy on Consultation with Indian Tribes

6. **Social Security Administration**
   Point of Contact: Nancy Berryhill, Deputy Commissioner, Office of Operations

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Email: Nancy.berryhill@ssa.gov
Phone: (410) 965-3145

Consultation Policies:
Social Security Administration Current Process for Consultation and Coordination with Indian Tribal Governments

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Appendix 5. Detailed Summary of Tribal Input

This section of the Report provides a summary record of comments received via the seven Tribal consultation sessions, listening session, and in the eighty-seven written comments received. These comments reflect the input of fifty-nine Tribes and eight organizations representing Tribal interests. This section organizes the input received into seven broad categories: 1) Tribal Consultation; 2) the National Historic Preservation Act (NHPA) and Section 106; 3) the National Environmental Policy Act (NEPA); 4) FAST Act and the Federal Infrastructure Permitting Improvement Steering Council (FPISC); 5) Mining and Hydraulic Fracturing; 6) Treaty Rights in Infrastructure Determinations; and 6) United Nations Declaration on the Rights of Indigenous Peoples. This record of what Tribes said is not Federal endorsement of the comments received or recommendations provided. See Section V of the Report for the analysis and commentary from the Federal Government on Tribal comments.

A. Tribal Consultation

As noted above, Tribes provided many oral and written comments as a part of the Infrastructure consultations Federal agencies hosted throughout the country. Many Tribes asserted that Tribal consultation is not only required by policy, but required by Federal law, including treaties, which are the supreme law of the land. A few Tribes also advised that, beyond being required by law, meaningful Tribal consultation makes practical sense—specifically, by avoiding late and costly Tribal objections that can lead to administrative appeal, litigation, or public protest. A summary of comments provided that are specific to Tribal consultation is provided below.

1. Need for Improvements, Generally

Tribes uniformly agreed that government-to-government consultations require necessary improvements regarding when and how Federal agencies consult with Tribes. A few Tribes noted that the existing legal framework could be adequate if Federal agencies were to consistently implement consultation requirements in a manner that meets the spirit of "meaningful consultation." (Specifics on what Tribes view as necessary for meaningful consultation are summarized in the following subsections.) Tribes stated they regularly experience inconsistencies in Federal agencies' consultation policies and the implementation of such consultation policies, with some Federal agencies violating their own consultation policies. A few Tribes also noted that some Federal agencies have claimed they are not required to establish their own Tribal consultation policies because they are independent agencies.

Summary of Tribal Recommendations

- Establish a document –a new statute (to last through Administration changes), Executive Order 13175 amendment, a new executive order, OMB guidance, and/or a nationwide programmatic agreement— to:
    - Establish minimum standards for the development and implementation of consultation policies for all Federal agencies:

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        - With one definition of government-to-government consultation, but with the flexibility to allow consultation to occur in a manner that fits the uniqueness of each Tribe,
        - That requires early consultation, among decision-makers, providing for Federal agencies to proactively address and incorporate Tribal concerns and interests into their decisions through free, prior and informed consent (see specifics in comment summaries below);
    - Direct Federal agencies to implement twelve principles and best practices for infrastructure permitting that impacts Tribes;
    - Require each Federal agency to draft an "Indian Trust Impact Statement" when an infrastructure project is identified, to assess the Federal trust responsibility in the project, assess any harm or threat to Tribal nor native trust lands, assess any impact to cultural and other resources, including water, and document any consultation and any consent or opposition by Tribes;
    - Hold agencies accountable for failing to adhere to consultation requirements and provide enforceable remedies for failure to meaningfully consult (e.g., penalties, a right of action to seek judicial review of consultation);
    - Ensure the protection and confidentiality of Tribal information shared for the purposes of protecting Tribal interests; and
    - Reaffirm that Tribes' status, separate from public entities or stakeholders, as having "standing" and required to be engaged at the onset of exploration and throughout the process for any lands impacted by infrastructure proposals, whether governmental or privately held.
- Establish a position to oversee and assist with consultation, such as:
    - A position within the White House to oversee all Tribal consultation across all Federal agencies;
    - A "Designated Consultation Officer" on a regional level to maintain maps of Tribal interests and contacts in the area, work with each Tribe to develop written protocols for consultation at the outset of any proposal, maintain a log of interactions with Tribes, and provide Tribes with requested information within five days; and
    - Full-time Tribal liaisons who are Native American and dedicated to developing relationships with Tribes and assisting in the consultation process.
- Elevate the WHCNAA to the "White House Council on Native Nations" co-chaired by the Vice President and Secretary of the Interior, and empower it to resolve policy differences among Federal agencies regarding the application of laws that affect Tribal rights, as a mechanism to resolve differences.

2. Trigger for Consultation Identifying the Appropriate Tribes with which to Consult

Several Tribes noted that Federal agencies reach out to Tribes for consultation only if the Tribe's present-day land holdings are impacted; a practice that ignores a Tribe's connections, ties, and the rights they have in ancestral homelands and ceded territories. Many Tribes maintain connections, ties, and rights beyond their present day reservations and land holdings. Federal legislation and policy resulted in mass relocation and removal of many Tribes from their ancestral territories where sacred, archeological, and cultural items and sites remain.

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Additionally, several Tribes negotiated treaties with the Federal Government to maintain their rights in ceded territory (e.g., to hunt, fish, gather). A project that affects a Tribe's ancestral homelands or ceded territories may therefore affect the Tribe's treaty rights, sacred sites, and other areas of importance to the Tribes. Moreover, such projects or Federal actions that affect Tribal ancestral homelands may be near or several states away from a Tribe's present day reservation.

Summary of Tribal Recommendations

With regard to what actions Federal agencies must consult on, Tribes recommended:

- Require consultation not just on the Federal Government's own projects, but also when the Federal Government comments on and has a role in reviewing projects, even where the approval process is primarily occurring at the state level (e.g., Sandpiper).
- Adopt a clear and unambiguous policy for identifying which Tribes the Federal agency needs to consult on a particular project, and err on the side of caution by including a Tribe when in doubt.
- Consult and notify Tribes as to Federal projects that affect not only reservation lands but also:
    - Areas within a Tribe's ancestral territory that may not be encompassed within reservation boundaries;
    - Resources, especially water, to which a Tribe may have a treaty right or property interest;
    - State or national historic sites;
    - Areas commonly, historically significant to Tribes; and
    - Cultural landmarks with historic significance to the Tribes.

To help agencies notify and consult all affected Tribes in a timely and accurate manner, Tribes recommended Federal agencies do the following to better identify the territories that each treaty governs, the present-day Tribes that were signatories to each treaty, the ancestral homelands of each Tribe:

- Work with Tribes to map Tribal lands (historical and current) in the area of infrastructure development based on self-identification by Tribes, to facilitate early and effective communication (similar to FCC's confidential, nationwide communication system to expedite infrastructure development while protecting areas of traditional and cultural significance to Tribes).
- Revise existing consultation policy to include research that identifies Tribes' existing land holdings and their treaty and ancestral territory as documented in the historical and archeological records.
- Establish a register of individual Tribes and their associated ancestral migratory territories.

3. Timing of Tribal Consultation

Many Tribes stated that, often by the time a Federal agency engages with Tribes, it is too late for the consultation to be meaningful because the agency has already determined the decision it will reach. Tribes noted that once crucial project components have already been

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developed or implemented, Tribal consultation is little more than public notice and comment. One Tribe stated that it feels like an afterthought when Tribes are consulted just weeks before the intended action takes effect because it also appears no time has been left to adjust laws in response to Tribal concerns or suggestions.

Tribes emphasized that early consultation (during the initial planning or pre-licensing phase of the project) is necessary to adequately identify properties of interest to the Tribe and assess the potential impact of the undertaking on the Tribe, Tribal land, and Tribal resources. Tribes noted that failing to include them in the in the planning process, or to assess potential impacts to environmental, historical and ceremonial sites, often results in those sites being destroyed.

A few Tribes noted that state and local agencies are consulted at early stages of a proposal, and asserted that Tribes should be afforded the same respect. Tribes stated that they should be consulted months in advance of new policy or law taking effect, not weeks, because Tribes need time to research, investigate, or prepare responses to the proposal like any other affected agency.

Summary of Tribal Recommendations

- Require Federal agencies to consult with Tribes "early," meaning—
  - When the agency becomes aware of a proposed project requiring Federal approval;
  - When a project is identified, before engaging non-government actors;
  - In the pre-licensing phase; and
  - When setting infrastructure development priorities.
- Impose a specific timeframe on Federal agencies to initiate, such as within ten days of receiving a request, application, or other notification that triggers a consultation requirement.

4. Invitation to Tribes to Consult

A few Tribes noted the importance of providing timely notice to a Tribe of consultation. One Tribe stated that two or three weeks' advance notice is not sufficient due to Tribal leaders' schedules. A few Tribes took issue with the form of inviting Tribes to consultation, stating that Dear Tribal Leader letters are generic.

Summary of Tribal Recommendations

- Provide sufficient advance notice (one Tribe specified more than thirty days, on Tribe said ninety days is preferred), that:
  - Includes sufficient detail about the potential scope, purpose, and location of the entire project a for a Tribe to evaluate and determine whether it has an interest in consultation; and
  - Expressly states that affected Tribes have the right to request consultation before the agency takes any significant Federal action or decision and outline a proposed schedule for how consideration of the project will proceed.
- With regard to the form of the invitation, Federal agencies should:

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    - Determine each Tribe's preferred method of communication (or come to an agreement on the method) and correspond with each Tribe accordingly;
    - Follow up after the initial notice by email or phone calls (or both) to ensure receipt, confirm the Tribe would like to actively consult, and determine next steps; and
    - Provide notification via USPS, electronic, and telephone contact.
- With regard to written correspondence on infrastructure issues, Federal agencies should:
    - Address correspondence to both the governing body of the Tribe and the THPO; and
    - Make sure Tribal contact information is correct on notices and check at least annually with Tribes for updated information.
- Federal agencies should coordinate with the Tribe on consultation timelines and understand that consultation is ongoing (notification is not a proxy for consultation).

5. Addressing Tribal Input

Many Tribes stated that Federal agencies often treat consultation as a procedural "check-the-box" exercise, in which Federal agencies come to the consultation with their minds already made up and ignore Tribal input. A few Tribes recounted that they have been in consultation sessions in which the Federal agency will listen and agree with the Tribe, but then proceed without accounting for the Tribe's concerns. One Tribe noted the awkward position in which Tribes are placed under current practices: if the Tribe meets with the agency, the agency can claim they consulted regardless of what the Tribe wants, but if the Tribe does not meet with the agency, the agency will push forward with their plans anyway. Another Tribe described current consultation practice as a "one-way street" of communication and an affront to Tribal sovereignty and directly impeding the functioning of Tribal government.

A Tribe noted that one Federal agency in particular will solicit comments then proceed without any indication of how the agency considered the comments or incorporated them into the decision. One Tribe stated that each Tribe has a story about consulting with agencies that do not act on the information Tribes give them, that Tribes spend time and limited resources consulting and then nothing happens, and the project moves forward as if the Tribes did not consult at all. Tribes stated that, in contrast to these current practices, meaningful consultation is a substantive exercise in which the Federal agencies and Tribes comprehensively review the proposal and work together to ensure the ultimate decision protects Tribal interests. Tribes stated that meaningful consultation requires a dialogue between Federal and Tribal partners with a goal of reaching consent, or work toward a compromise.

Summary of Tribal Recommendations

Tribes recommended open discussions and joint deliberations between Federal agency and Tribal partners on a potential project affecting Tribes and emphasized that Tribes must be able to influence the decision made. The recommendations on the extent of the influence varied somewhat:

- Most Tribes recommended requiring free, prior, informed consent, in accordance with the United Nations Declaration on the Rights of Ingenious People (UNDRIP), particularly

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Articles 11 and 32, so that Federal agencies must obtain the concurrence of the affected Tribe before it takes any action that would negatively impact (or irreparably damage) the affected Tribes traditional lands, waters, treaty rights, resources, cultures, and ways of life.

- One Tribe recommended requiring Federal agencies to "give effect to the maximum extent possible" to the views of the affected Tribes.

Tribes also recommended that Federal agencies be required to:

- Issue a "Statement of Potential Tribal Impacts" that addresses how Tribes could be impacted in any notice on an infrastructure project - both on reservation and off-reservation, to ensure that each agency certifies, before the process starts, that it has evaluated how a project might impact Tribal interests.
- Articulate in writing why the free, prior, and informed consent of a Tribe affected by a proposal or policy was not obtained, including a detailed statement of the efforts made by the agency to obtain that consent and the statutory basis for failing to adhere to the Tribes' position.
- Review of any action in the absence of Tribal consent by a Trust Responsibility Compliance Officer (the Secretary of the Interior for projects permitted by other agencies and the Managing Director of CEQ for Interior-permitted projects).
- Treat substantive Tribal input on a proposal for infrastructure as they would the input of any other governmental entity with a jurisdictional nexus to the project.

6. Manner in which Consultation is Conducted

A few Tribes stated that consultations conducted by letter, teleconference, or webinar are not meaningful consultations. One Tribe stated that consultation should occur face-to-face and between Tribal and Federal leadership, unless there are extraordinary circumstances and the Tribe has approved another method. One Tribe recounted that a Federal agency advised them to submit comments during the comment period "like everybody else," even though the Tribe had submitted letters and/or met with Federal officials as part of a consultation.

Summary of Tribal Recommendations

- Provide Federal agencies with adequate time for negotiations with a Tribe relating to how Tribal concerns will be addressed, mitigated, and/or resolved and find a common ground that upholds the Federal trust responsibility.
- Federal agencies should:
    - Adhere to the Tribe's protocols for consultation if the Tribe has adopted its own;
    - Engage in face-to-face meetings;
    - Make every effort to meet in the Tribe's territory;
    - Regularly consult with Tribes (e.g., quarterly);
    - Work with the Tribe to bring in a mutually agreed-upon mediator, consultants or interpreters, as needed;
    - Allow adequate time for the Tribe conduct its own studies and assessments; and
    - Continue consultation until project completion, not just until the 'consultation window' is over; and
    - Work to build relationships with Tribes and treat them as partners

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7. Who Participates in the Consultation

Tribes generally viewed the requirement for government-to-government consultation under Executive Order 13175 as separate and apart from the requirement for consultation with a Tribe (usually with the Tribal Historic Preservation Officer) under Section 106 of the National Historic Preservation Act. Some Tribes noted that Federal agencies sometimes send staff with no discretion to make decisions, rather than decision-makers, to government-to-government consultation. These Tribes emphasized that the decision-maker must participate in the consultation for the government-to-government consultation to be meaningful.

Several Tribes also asserted that Federal agencies cannot legally, and should not attempt to, delegate their obligation to consult to the state (even if the state is carrying out a Federal program), project proponents, their legal team, or consultants.

Summary of Tribal Recommendations

- Require consultation be conducted directly between Tribes and Federal agencies (not to any delegate).
- Consult only with Tribal representatives (governing bodies, councils) who have been authorized to engage in government-to-government consultation by the Tribal government.
- Ensure that Federal participants have actual decision-making authority.
- Work with the Tribe to designate or identify appropriate persons to engage in consultations, such as Treaty Councils or other respected/influential Tribal members to participate in consultation.
- Allow for input from multiple levels, from formal consultation with elected Tribal officials (government-to-government consultation) to less formal, more technical meetings with Tribal staff that are working to understand the project and impacts on the Tribe (e.g., NHPA Section 106 consultation).

8. Federal Agency Staff Understanding

Tribes complained about the lack of understanding among some Federal agency staff, specifically regarding the sovereign status of Tribes and the unique legal relationship the Federal Government has with Tribes (both government-to-government and trustee-beneficiary). For example, Federal agency personnel sometimes group Tribes in with other stakeholders, rather than on a government-to-government basis. Tribes noted that Federal decision makers must come to understand that it is in the national interest to uphold the promises that the U.S. made in treaties, and to exercise discretion consistent with the duties of a trustee to Tribes in every decision that impacts Tribal interests.

Tribes stated that Federal agency staff also lack knowledge in Tribal histories and cultures. For example, one Tribe stated that Federal agency staff need training and an understanding of their Tribal citizens' deep bond to the lands and waters of the Missouri River to provide the basis for understanding who the Tribe is and what Tribal citizens value, as a context

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for really hearing what they are saying. Tribes also stated that Federal agency staff need training in their own Tribal consultation policies and how to implement them.

Summary of Tribal Recommendations

- Require training for Federal staff and leadership on:
  - Tribes;
  - Treaty rights;
  - Tribal lands;
  - Federal trust responsibility;
  - Unique relationship between the U.S. and Tribes;
  - Federal Indian law;
  - Federal policy of Tribal self-determination and self-governance;
  - Consultation obligations;
  - U.S.'s historical treatment of Tribes and how policies resulted in Tribes having rights and interests in off-reservation areas;
  - Tribal perspectives on the importance of the trust responsibility and how agency decisions have impacted Tribal rights in the past;
  - Vast differences among Tribal cultures;
  - Specific information about the particular Tribes in the Federal agency staff's region; and
  - How Federal staff should conduct themselves when meeting with Tribal leaders.
- Include Tribes in the development of any training materials or be offered by Tribes.
- Require an exam similar to the Foreign Service exam for Federal staff working with Tribes to ensure cultural competency.
- Require Federal agency Tribal liaisons to be Native American and be located in all regions, rather than just in DC.

9. Tribal Capacity for Consultation

Many Tribes noted that they do not have the funding or resources to participate in all consultation requests from Federal agencies. A Tribe noted that Tribes must pay to send their representatives to consultations regarding outside threats to their treaty rights and cultural resources, while those valuable resources could have been used to address other important matters.

A few Tribes stated that they are unable to respond to consultation requests simply because of their limited capacity, but advised that Federal agencies should not take a non-response or temporary delay in response to be lack of interest.

Summary of Tribal Recommendations

- Provide Federal funding, or funding from the entity requesting the agency action, for Tribal representatives to travel to consultation meeting sites.
- Promote cooperation, participation and efficiency by combining consultation on common jurisdiction and topics.
- Make more resources available to Tribes to develop the capacity to meet consultation needs in the form of grant funding, capacity-building equipment, manpower, technical

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assistance, or other resources, so that the Tribes may engage the U.S. in a meaningful way.

- Do not assume that a non-response from a Tribe indicates a lack of interest; instead, additional follow up with the Tribe should be required to ensure the Tribe is uninterested in the project or Federal action.

10. Information Sharing in Consultation

Several Tribes noted that one of the purposes of consultation is for the Federal agency to obtain information from the Tribe, and that currently, agencies are not using Tribal expertise and data. These Tribes note that Tribes' unique knowledge could inform Federal decisions, and provide context, information, and perspectives to support informed decisions, including, but not limited to, knowledge about ancestral lands, treaty rights, and traditional areas of cultural and spiritual importance. However, Tribes also noted that they are expected to share their sacred sites and most culturally sensitive areas to the project proponents that may be considered adversaries threatening the sites, and that this contravenes Tribes' religious beliefs.

Tribes stated that Federal agencies sometimes withhold information from Tribes and require them to request access to information through the Freedom of Information Act (FOIA), rather than sharing the information as part of consultation. Tribes recounted Federal agency staff taking weeks and months to provide information needed for the Tribe to prepare for meetings, track progress, or meaningfully consult. Once Tribes receive the information, they are sometimes denied the time necessary to digest the information and provide meaningful responses.

Summary of Tribal Recommendations

- Notify Tribes early (at the outset) of the precise nature of the proposal (not after applications are deemed 100% complete) to ensure cultural and religious sites are properly identified and not disturbed by applicants (see, also, summary of comments on timing of consultation).
- Use Tribal expertise and knowledge.
- Require Federal agencies to develop protocols to ensure Tribal information is kept confidential.
- Consult with Tribes on how to mitigate any damage done to sites.
- Address Tribes' questions about the process and requests for clarification in writing with sufficient detail without requiring "queuing" or typical FOIA procedures.
- Place project reviews on hold until Tribes receive information relevant and central to their decision-making process.
- Provide Tribes with sufficient time to review information (e.g., a minimum of sixty days) and honor Tribes' requests for more time.

11. Accountability for Consulting

Many Tribes noted that Federal agencies bear no consequence for failing to consult with Tribes [and that the private companies bear no consequence for the resulting destruction of

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sacred sites]. A few Tribes noted that while some agencies have consultation policies in place, Federal agency staff habitually violate the policies with no consequences.
(See, also, summary of comments on Tribal input, above, for accountability on how Federal agencies consider input provided by Tribes).

Summary of Tribal Recommendations

- Require penalties for Federal staff that fail to consult.
- Suspend an agency that fails to consult and make another agency the lead.
- Suspend an agency's funding if it fails to consult.
- Tribes must have the opportunity to regularly review and provide comments on the efficacy of existing policies. Policies must be amended and improved at the request of Tribes.
- Require all agencies, including independent agencies, to comply with consultation policies.
- Add oversight from the White House.
- Federal agencies should take enforcement action (work stoppage, withdrawal of permit, legal action) against private entities or government contractors harming Tribal resources.
- Prevent Federal agencies from moving forward with infrastructure projects when another Federal agency (e.g., EPA, DOI, or ACHP) calls for additional review or consultation.

B. National Historic Preservation Act and Section 106

Throughout the meetings and in the written comments, Tribal leaders and representatives identified many key issues related to the National Historic Preservation Act (NHPA) and the Section 106 regulations of that Act. A primary issue for Tribes is that Section 106 is a *process* and does not provide for—or in any way ensure protection of—Tribal resources (or non-Tribal resources).

Consultation with Tribes is not appropriately defined in the NHPA or Section 106 regulations and has been historically used as a procedural box-checking action. Tribes noted numerous times that "check the box" was a common approach to the Section 106 process by Federal agencies. Tribes also noted that the NHPA fails to address treaty rights (along with other laws applicable to Native Americans). Section 106, requiring a form of domestic consultation, does not require the Federal Government to obtain consent before taking Federal action, and consultation and consent should be required when actions affect treaty lands or resources. Issues related to treaties are discussed in a later section in this Appendix.

Tribes noted that the most problematic projects reviewed under the NHPA involve extractive industries (such as oil, natural gas and mining). Tribes also noted that in too many cases, National Environmental Policy Act (NEPA) reviews are completed without including Section 106 review of cultural resources. They also addressed the issue of the Army Corps of Engineers' (ACE) Nationwide Permit 12, which Tribes assert often circumvents Section 106 of the NHPA.

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1. Inconsistent Implementation of Section 106 of the NHPA and Delegation of Responsibilities

A common concern that Tribes noted is that Section 106, although a Federal law applicable throughout the U.S. and territories, is carried out inconsistently by Federal agencies, most notably the Army Corps of Engineers. Tribes noted inconsistent application leads to their inability to protect historic properties and traditional cultural properties (TCPs) and to have "meaningful consultation." Different interpretations and definitions result in diminished ability to have input on effects to important places impacted by the entire project.

Many Tribes also noted that a requirement for consensus agreement is needed, rather than the less clearly defined consultation currently in the Section 106 regulations. Other inconsistencies that Tribes noted include:

- While Tribal Historic Preservation Offices (THPOs) are mandated to follow Section 106 procedures closely (such as responding to Federal agencies within established timeframes and having the same status as State Historic Preservation Offices (SHPOs) only on Tribal lands), Federal agencies have different interpretations in what falls within an Area of Potential Effect and assume leeway in implementation of Section 106.
- Federal agencies delegate much of the work under Section 106 to private companies that should be performed by Federal agencies, or a neutral entity, if delegated at all.
- Delegation of the authority to perform and enforce certain Section 106 reviews to states is a problem.

Tribes also noted that the ability for Federal agencies, under the ACHP's regulations, to promulgate individual agency regulations for compliance with Section 106 without Congressional authority, makes such regulations illegal. Programmatic agreements (regarding terms and conditions agreed upon to resolve potential adverse effects of a Federal agency program, complex undertaking or other situations) under Section 106 were also an issue noted by Tribes, due to the common practice of deferring much of the Section 106 review process under these agreements, including consultation. Tribes stated that if programmatic agreements exist, Tribal consultation is still needed.

Many Tribes noted that too many Federal agency representatives they work with have little to no knowledge of Native American histories, cultures or protocols, in addition to lack of adequate knowledge of agency regulations and policies or Section 106 regulations.

Summary of Tribal Recommendations:

- Federal agencies should work with Tribes in the same manner they do with states and local governments.
- Tribes should be involved in the development of nationwide permits and programmatic agreements, ensuring their interests are taken into consideration in the *development* of these broad agreements designed to streamline review processes.
- Better training of Federal staff in their own agency policies and guidelines, as well as of handbooks, Federal law and National Register bulletins, could result in better and more consistent consultation practices government wide.

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- Develop a nationwide centralized mapping system (similar to the one used by the Federal Communications Commission, or FCC) to facilitate better inter-agency efforts based on Tribal identification of sacred sites, places of importance, and Tribal territories at the regional level.
- Learn from the FCC model for the development of Nationwide Programmatic Agreements, these documents involve:
    - Early notification to Tribes regarding proposed cell tower sites;
    - Voluntary Tribal-industry cooperation to address Tribal concerns;
    - Recognition of the appropriateness of industry paying fees to Tribes for their special expertise in the consultation process (as they would with any other consultant).
- Affirmation of the FCC's ultimate obligation to consult with Tribes as requested or necessary.
- Implementing a requirement for ongoing consultation under programmatic agreements, including for mines and dams, and allowing for unexpected or unknown impacts and staged project development would also be useful.

2. Army Corps of Engineers' Consultation Practices and Appendix C

Tribes universally expressed concerns with Appendix C, a Corps regulation governing compliance with the NHPA. In numerous meetings and letters, Tribes called for repeal of Appendix C, noting that the Corps' application of Appendix C does not fulfill the agency's responsibility under the NHPA and is not in compliance with Section 106.

According to Tribes, the Corps' use of Appendix C has been at the heart of many consultation problems, for a number of reasons. A primary concern noted was that Appendix C has not been revised to reflect the 1992 amendments to the NHPA that make Tribal consultation mandatory. Under Appendix C, Tribes *may* be consulted as part of project reviews. Furthermore, the Tribes noted that Appendix C was never approved by the ACHP, which has repeatedly expressed its view that Appendix C is not in compliance with Section 106, and that using Appendix C does not fulfill the Corps' responsibilities under Section 106. Agencies that wish to substitute their own procedures for the Section 106 regulations must receive approval from the ACHP because it is the only agency with congressional authority to issue regulations implementing Section 106. Several Tribes also noted that the Corps' 2005 and 2007 "interim guidance" regarding compliance with the NHPA is insufficient.

Numerous Tribes commented that the NHPA (and Section 106) is more expansive and comprehensive than Appendix C in the identification and consideration of historic properties, including those significant to Tribes. Additional problems with Appendix C that Tribes noted were that it results in disputed findings, uses a narrow definition of "undertaking" and of Area of Potential Effects, results in a lack of input from Tribes, does protect confidential information, and does not address unanticipated discoveries, as required in Section 106.

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Numerous Tribes also raised the issue of the Corps' Nationwide Permit General Conditions.[21] Tribes stated that in their experience, for non-Federal permittees, these General Conditions leave the responsibility of identifying historic properties in the project area to permit applicants. Tribes also noted lack of public notices for projects under these general conditions as a problem.

Summary of Tribal Recommendations:

- Repeal of Army Corps of Engineers current historic preservation compliance processes, "Appendix C."
- Improve how Section 106 is administered, including eliminating Appendix C.
- Amend "Appendix C" to be consistent with 1992 and later Section 106 revisions.
- Eliminate or modify the Corps' Nationwide Permit approach.

3. Timing of Consultations and Involvement of Appropriate Representatives

A number of Tribes remarked that too often with infrastructure projects, Section 106 consultation is delayed until late in the environmental review process, after project plans have nearly been finalized and not always as a separate review for historic and cultural resources. At that late juncture, Tribal input becomes a simple "check the box" exercise rather than the meaningful and substantive process that Federal law intends. According to the Tribes, this puts Tribes in a situation where they are seen as obstacles to overcome and put on the defensive, rather than as partners in projects.

Lack of timeliness is due, in part, to the fact that current consultation policies do not adequately define when consultation should begin.[22] Tribal governments—at the leadership level—need to be consulted earlier in project review processes to adequately identify historic properties and assess potential impacts of undertakings, just as Federal agencies consult regularly with states, cities and local municipal governments on similar projects. Tribal governments must be extended the same respect and government-to-government consultation.

Contacting Tribes at the mitigation phase, which is often defined as archaeological excavation, is too late. Once an area is disturbed, it cannot be restored, moved or replicated in another place. Therefore, it is incorrect to think that mitigation could later occur through the Section 106 process once an area has been disturbed.

Summary of Tribal Recommendations:

- Begin consultations with high level Federal decision-makers, and continue to involve them at appropriate points throughout the process.

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[21] http://www.nap.usace.army.mil/Portals/39/docs/regulatory/nwp/NWP%20General%20conditions%20(2012).pdf

[22] The Section 106 regulations state that Federal agencies need to identify the appropriate SHPO and/or THPO (when on Tribal lands) and initiate consultation with the appropriate officer or officers as one of the first steps in the process. Agency consultation policies, however, may not be as clear.

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- Consultation should occur at the Tribal leadership level and on Tribal lands whenever possible.
- Include Tribal governments and leaders during the pre-licensing phase of the process would ensure more comprehensive identification of historic properties and assessment of potential impact of undertakings.
- Require permitting agencies to initiate consultation within a specific timeframe (such as ten days) of receiving a request, application or other notification.
- Extend the current thirty day comment period once notified of a project, giving Tribes more time to respond in an informed manner.
- Notification does not equal consultation; agencies must ensure that consultation efforts extend beyond "Dear Tribal Leaders" letters mailed to Tribes who may be interested in projects, and include phone calls, emails and better outreach.
- ACHP regulations (Section 106) should control/supersede any other agency's regulations in conflict with the ACHP regulations.

4. Lack of Authority and Effectiveness of Section 106, Lack of Accountability or Consequences

Tribes repeatedly expressed concern that "Section 106 has no teeth." They noted that ACHP's recommendations are often ignored. They noted that currently, the ACHP is "advisory" in nature, and Federal agencies bear no consequence for failure to consult or comply with Section 106. In general, Tribes noted that stricter penalties are needed and agencies need to be accountable for non-compliance with Section 106.

Summary of Tribal Recommendations:

- Increase ACHP authority to enforce its decisions and/or penalties on Federal agencies for non-compliance with Section 106 (such as those existing in NAGPRA).
- Restrict agencies' ability to permit a project if ACHP (and/or other agencies) call for additional reviews or consultations.

5. Signatory Authority of Tribes on Section 106 Agreement Documents

A related issue regarding authority that Tribes raised is the need for Tribes to have signatory authority on all Section 106 agreements where historic properties of importance to Tribes may be adversely affected, including off Tribal lands.

Summary of Tribal Recommendations:

- Provide Tribes with full signatory status requiring agreement with MOUs/MOAs involving projects affecting sites and places of importance to them.
- Require agencies to enter into programmatic agreements with Tribes under the NHPA, and early in the consultation process for major infrastructure projects.

6. Lack of Tribal Involvement in and a Tribally-Directed Section 106 Process

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Tribes noted that the Section 106 process is driven by archeologists and their values rather than by Tribes and their knowledge and concerns. Tribes are constantly told by archeologists that places and objects that are sacred or important are not within the Section 106 process (defined as historic properties eligible for or listed on the National Register). This leads to a focus on excavation (data recovery) as the most common form of mitigation and a lack of understanding that cultural resources do not equal archaeological sites. A related issue noted is that consultation is not taught in colleges and classrooms (where archaeologists are trained), but archeologist are intimately involved in the review process.

Tribes also noted that differences exist between what SHPOs consider eligible for the National Register and what Tribes and THPOs consider eligible. Additionally, the Secretary of the Interior standards for professionals working on cultural resources projects ignores knowledge of Tribes, as does National Register criteria, supporting the idea that archeologists are stewards of Native American pasts instead of Tribes, whose expertise is repeatedly dismissed or ignored. Tribal comments noted that the framework upon which the NHPA was built was not meant to incorporate Tribal sources of information and accommodate Tribal values.

Summary of Tribal Recommendations

- Historic properties should be identified in a culturally-sensitive manner, directed by the culture itself and at the Tribal level since each Tribe is unique.
- Incorporate Tribal views on identification and significance into the Section 106 process, including consultations with THPOs and/or Tribes on historical territories (ancestral lands off of modern-day Tribal lands).
- Treat Tribal Historic Preservation Officers with equal authority to others in the Section 106 process.
- Conduct cultural resource surveys with Tribal members and in compliance with Tribal standards.
- Make changes to the NHPA or craft new legislation focused specifically on Tribal resources.
- Modify the NHPA to include additional cultural resources recognized by Tribes, such as floral, faunal, geological and water locations recognized as significant and often sacred to Tribes.

7. Inadequate Funding and Capacity for Full Tribal Implementation of NHPA and Section 106

Tribes consistently noted that there is inadequate funding to support the current work of THPOs and to have Tribal monitors present at archaeological sites and ground-disturbing activities. Tribes noted that without adequate resources Tribes cannot fully participate in consultations or the Section 106 process to identify, protect and preserve historic properties.

Summary of Tribal Recommendations:

- Prompt industry to pay fees to Tribes for their special expertise in the consultation process (as they would with any other consultant).
- Develop maps that make it more clear when consultation may be necessary, e.g., FCC Model.

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8. Confidentiality and Information Sharing in the Section 106 Process

Several Tribes noted confidentiality and sharing of information in the Section 106 process as areas of concern. Tribes noted that while Section 304 of the NHPA provides a framework for protecting confidentiality, in practice many agencies seem reluctant to follow this framework. Some Tribes noted that clearer guidance regarding confidentiality of information shared is needed and, in general, expressed concern over keeping confidential information regarding sacred sites and other significant places.

Conversely, Tribes also expressed frustration with Federal agencies not providing Tribes with access to information they have on project areas that agencies willingly share with SHPOs and others. According to Tribes, this is an inappropriate invoking of Section 304 (of the NHPA) to keep information about sites from Tribes.

Summary of Tribal Recommendations:

- Modify the NHPA to include some minimum information dissemination standards.
- Provide clear guidance regarding confidentiality of information to agencies.
- Ensure Tribes have access to the same information as SHPOs and others.

9. Sacred Sites

Throughout the meetings and in the letters submitted, Tribes provided a number of examples demonstrating their concern over the disregard for and desecration of sacred sites. These included a substantial list of specific sites Tribes feel have been desecrated and/or threatened by Federal agency actions. Concerns regarding sacred sites fell into a few categories: lack of consequences or accountability, general disregard for sacred sites, different understandings of what sacred sites are, and lack of a landscape-level approach in project reviews.

10. Lack of Consequences or Accountability, and a General Disregard for Sacred Sites

A number of Tribes expressed that both Federal agencies and private companies bear no consequence for allowing destruction of sacred sites, specifically noting that the Corps' Appendix C has led to the destruction of sacred sites. Current practices of the Department of Interior (DOI) also ignore the rights of Tribes regarding ancestral territory and protection of sacred sites (and associated burials and associated funerary objects). The Tribes pointed out that the United States has trust and treaty obligations to protect Tribal lands, waters and sacred places, and that "usual privileges of occupancy" noted in ceded lands include the right to access and maintain traditional sacred sites, among other things. Tribes stated that Executive Order 13007 and the current interagency Memorandum of Understanding (MOU) on sacred sites[23] exist, but are not adequate protection.

[23] http://www.achp.gov/docs/SacredSites-MOU_121205.pdf

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Summary of Tribal Recommendations:

- Repeal Appendix C.
- Require agencies issuing permits for infrastructure projects affecting Tribal lands, waters or sacred places to demonstrate Tribal trust and treaty compliance.
- Insert "mandatory avoidance" in every Federal law that deals with infrastructure projects.
- Require regulatory reviews to also include a sacred sites review.

11. Differing Understandings of what Sacred Sites are and Landscape-level Approach

Another issue Tribes raised is different understandings between Tribes and Federal agencies about what sacred sites. For example, there is a lack of understanding that cultural resources are not equal to archaeological sites (as noted above), and incorrect assumptions that data recovery is the only mitigation option. Tribes noted that data recovery can destroy the sacredness of a place or some of the characteristics of a place that make it significant because data recovery in and of itself is destructive. Additionally, Tribes stated that sacred sites include land, air and water, which all need to be considered.

A Tribe noted that the definition of "sacred site" in EO 13007 is insufficient because sacred sites should not be narrowly defined vis-a-vis Federal land, but rather vis-a-vis Federal undertakings. The issue of larger TCPs and landscape-level sacred sites not being recognized or acknowledged was also raised.

Summary of Tribal Recommendations:

- Increase training for Federal agency staff on Sacred Sites and places that hold religious and cultural significance for Tribes.
- Create a new definition, or broaden the current definition(s) of Sacred Site (as defined in EO 13007).

12. Overlapping Section 106 Concerns: Confidentiality, Delegation of Authority, Lack of Funding

Several issues related to sacred sites specifically mentioned by Tribes overlap with specific Section 106 concerns. One is information regarding sacred sites being kept confidential. And the lack of understanding of "meaningful consultation" results in a "check the box" approach that threatens sacred ancestral territory (among other things).

One example provided is that Menominee sacred sites are greatly threatened, such as places or origin, burial and mound sites, ceremonial dance rings, and village sites, as a direct result of delegation of Federal authority to states, and subsequent non-inclusion of Tribes not in the state but with ancestral lands in that area. The issue of removed Tribes not always being included in consultations was mentioned several times in the meetings and letters.

Additionally, it was noted that the Corps claims it has no budget for review of sacred, cultural and historical sites (along the route of pipelines, for example) and instead defers this task to pipeline companies, which are biased in their reviews because it is not in their best interest to

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identify sites that Tribes would want avoided. Related to confidentiality concerns, revealing information about sacred sites to outsiders and adversaries is required in circumstances where non-Federal parties are engaged in the consultation process.

Summary of Tribal Recommendations:

- Amend the NHPA to include language requiring mitigation of adverse effects and avoiding sacred sites to gain project approval, which would be certified by Tribes.
- Create maps, such as the FCC has done, to prompt consultation and protect Tribal sacred places.

13. Additional General Recommendations, Solutions and Best Practices Related to NHPA and Section 106

In addition to these general and specific issues and solutions noted by Tribes related to the NHPA, Section 106 and Sacred Sites noted above, a number of general recommendations and potential solutions to improve Section 106 and the NHPA were offered, including:

- Build trust between THPOs, those doing NHPA work and higher officials.
- Improve understanding of cumulative effects and indirect effects--and in a landscape context--in assessment of effects are needed; adding a dedicated paragraph or document on this would be helpful.
- Clarify consultation requirements through an Executive Order, including consultation requirements under the NHPA (and other statutes).
- Use legislation (versus Executive Orders) to fix the foundation of the NHPA.
- Include in Section 106 an inadvertent discovery plan that works for all involved.
- Amend NHPA to provide ACHP with a specific role in resolving disputes regarding the Area of Potential Effect, potential adverse effects on eligible sites, measures required to avoid or mitigate adverse effects, and similar matters.
- Require Land-managing Federal agencies to use their authority under NHPA Section 110 to manage historic properties on Federal lands that hold religious and cultural importance for Tribes in consultation with Tribes, through a type of co-management.
- Expand NHPA Section 106 consultation to include long-term project operations and ongoing maintenance with ground disturbance occurring after projects are completed and allow permitting agencies to impose these obligations on project proponents. Involve and consult with Tribes during the pre-licensing phase to ensure that cultural and religious sites are properly identified and not disturbed by applicants, with confidential information protected.
- Identify historic properties in a culturally relevant manner directed by culture (the Tribes) itself. Require all Federal agencies to make a reasonable and good faith effort to identify historic properties, including consulting with Tribes directly to identify and assess adverse effects through historic properties.

C. The National Environmental Policy Act

Tribes identified a number of problems that impact or shortcut the NEPA review process. First, the Federal Government tends to look at projects in a segmented way. The larger picture

beyond the immediate project area should always be part of any evaluation associated with major proposed developments. An example of where the failure to look at the larger picture creates a problem is the review for crude oil pipelines. The crude oil pipeline review is done in a segmented way, never looking at cumulative impacts of the project as a whole. For example, in the Dakota Access Pipeline review, four different states, three separate districts of the Army Corps of Engineers, and the Fish and Wildlife Service each looked at different parts of the project, but did not coordinate the impacts to Tribes.

In addition to the segmentation of the review causing problems, programmatic EAs and EISs and nationwide permits allow the Federal Government to shortcut the NEPA process and the Tribes pointed out the fact that even small projects have cumulative impacts. When the agencies take the approach that their jurisdiction is only over a small area of any given project (the permit area), this ignores the direct and indirect effects on cultural resources, traditional cultural property, and tangible resources that will occur later on because of the permit approval. Tribes also identified a number of problems with the NEPA documents (draft EISs or draft EAs) provided to them for review. Project proposals or draft NEPA documents often lack specific assessments that are necessary to review project impacts. The reports may not have important impact assessments and in many cases make statements that assessments will be completed in the future. However, the documents do not note when or with what other permitting process this future action will be completed. The prepared documents that Tribes have to review are also highly limited in scope. They do not fully evaluate interdependent activities associated with the proposed actions, or do not fully evaluate all potential effects of a proposed action, leading to inaccurate and incomplete project evaluation. The Tribes are concerned that this limited scope inappropriately biases project review towards project proponents.

Finally, as part of the NEPA review Federal agencies are required to implement the environmental justice requirements of the Executive Order No. 12898. The agencies have a mandate to engage Tribes on the issue of environmental justice (EJ). They are supposed to consider alternatives that would avoid disproportionate and adverse effects on minority Tribal populations and the Tribes do not believe this is happening with the current NEPA review processes. EJ is often applied in name only and Tribal communities are still placed at risk. Part of the problem is that some of the tools and techniques used to evaluate EJ concerns seem designed to address urban settings and don't apply to reservations or rural settings. A half-mile buffer zone may make sense in evaluating the environmental impact for a highway in a city, but it makes no sense to say that a half-mile buffer protects a Tribe in a rural area.

Summary of Tribal Recommendations:

- Prohibit nationwide permits for crude oil pipelines and require a full EIS on all crude oil pipelines that cross aboriginal, historic treaty or reservation lands.
- Create and require regional EAs and EISs, not nationwide ones.
- Legislation should clarify the need for an EIS for crude oil pipelines.
- The existing EO on environmental justice should provide a way to address some problems. CEQ, EPA, and Interior could join together to issue appropriate guidance for all Federal agencies on environmental justice principles for Indian tribes.

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- Agencies should follow their own environmental justice policies and use their discretion to deny any projects adversely impacting cultural resources when there is no way to mitigate those environmental justice impacts.
- Agencies should be required to carry out carbon impact studies in EA or EIS documents.
- NEPA should be amended to explicitly require carbon impact studies as part of the analysis and documentation whenever an EA or EIS is required under terms of any agency's NEPA processes and procedures.
- The Federal Government or the project proponent should fund cumulative impact studies for Tribes.

D. FAST Act and the Federal Infrastructure Permitting Improvement Steering Council (FPISC)

A number of Tribes noted that the recently-passed FAST Act creates an opportunity for FPISC and OMB to include Tribes in efforts to improve Federal permitting processes. Some Tribes offered specific recommendations to accomplish this goal, in particular: (1) including Tribes or a Tribal trust compliance officer on FPISC; and (2) revising the FAST Act process to fully integrate Tribes in the streamlined process in the same way as states and local governments. Some Tribes pointed out that prior Administration materials on improvements to infrastructure permitting in part call out Tribes and Tribal interests expressly, but many Tribes commented that implementation of these efforts have not in practice included Tribes effectively nor recognized the Federal trust responsibility for Tribal lands, resources, and sacred places. Two Tribes also noted that entities have abused expedited procedures governing maintenance, finding ways to expand existing infrastructure under the guise of performing maintenance.

Similarly, several Tribes voiced concern that the "piecemeal" approach to permitting projects has weakened important protections for Tribes with respect to large-scale infrastructure projects. One Tribe noted that the Office of Management and Budget (OMB) has stated that OMB is not subject to consultation requirements, but that should not be the case given OMB's involvement on FPISC as well as OMB's important role in financial and policy-related activity across the executive branch, including the development of infrastructure-related policy.

Summary of Tribal Recommendations

- The qualifications for fast-track projects need to be narrower; any project that adversely impacts Tribes or Tribal interests should automatically disqualify for fast-tracking, or any project that requires consultation should not qualify for fast-tracking.
- The use of fast-tracking should be reviewed regularly to ensure appropriateness. Tribes should give informed consent on projects before projects can qualify for FAST Act permitting improvement procedures. The "piecemeal" approach to permitting large-scale projects needs to be better regulated or eliminated.
- FPISC should consult with Tribes about FPISC's role relative to individual agencies in the permitting process and also about how FPISC will operate. This will ensure that Tribes have information as permitting evolves and can thus provide recommendations about how to include Tribes in the FAST Act process.
- FPISC should develop and recommend to OMB guidance that includes the following:

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- All agencies issuing permits for infrastructure affecting Tribal lands, waters, or sacred places must demonstrate compliance with trust obligations, treaties, and consultation requirements and demonstrate informed consent;
- Establishment of a Tribal Trust Compliance Officer on FPISC. The duties of this position should include:
  - Working with impacted Tribes to identify concerns,
  - Building a process, or making better use of an existing process, to ensure Tribal concerns are addressed and resolved by Federal agencies in coordination with the impacted Tribes at the policy level and also on specific projects,
  - Coordinating with Federal agencies to ensure Tribal rights are understood and protected by all agencies involved in permitting discussions and reviews and to adjust timelines for completion of reviews if additional time is needed to resolve Tribal concerns, and
  - Working with agencies to support greater Tribal control over infrastructure development on Indian lands, or lands where Indian Tribes hold natural, cultural or spiritual resources;
- Provision of full and early participation by Tribes in "purpose and need" permitting discussions;
- Recognition of Tribal sovereignty and the role of treaty rights in permitting projects;
- Environmental justice protections;
- Greater Tribal control over infrastructure development on Indian lands, or lands where Tribes hold natural, cultural, or spiritual resources, including ceded territories;
- Institutionalization of best practices, including:
  - Early, adequate notice and ongoing information sharing,
  - Consultation in early planning stages,
  - Tribal involvement in mapping efforts,
  - Funding Tribal participation at all stages of permitting processes; and
  - Inclusion of impact statements that evaluate concerns identified by the Tribes and treaty and trust obligations.

- There should be annual, biannual, or quarterly meetings between Federal agencies and Tribal leadership to build the trust relationship, discuss upcoming projects, and address Tribal concerns.
- OMB should follow executive branch consultation requirements.

E. Mining and Hydraulic Fracturing

Many Tribes criticized the Mining Act and asserted that it is not appropriate for private companies to use public land for their financial benefit, without the consideration of alternate values such as preservation of lands and landscapes, the environmental effects of resource depletion or impacts on cultural areas. Tribes asserted that both Tribal and non-Tribal communities often share these concerns. As one Tribe expressed it, consumer demand for new technology like smaller phones leads to big open pit mines at or near cultural areas, without the consideration of the damage done to cultural properties or sacred sites. A Tribe commented that

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when mining surveys are conducted on Tribal land or near Tribal communities, Tribes should at least be notified. Another Tribe expressed the view that, in reality, land belongs to a Tribe only until resources are found there, and then the government finds a way to take it away.

Many Tribes commented on the adverse environmental impacts of mining. One Tribe noted that mining can put treaty rights at risk if the mining activity pollutes land or waters where a Tribe holds treaty rights. The Tribes mentioned water pollution most frequently. Several Tribes complained about two loopholes in Clean Water Act (CWA) regulations promulgated by the Army Corps of Engineers and the EPA that they assert allow mines to pollute clean water. The first is a 2002 revision of regulations to expand the definition of "fill material" under section 404 to include contaminated mine tailings, exempting these tailings from CWA rules. The second is a regulation that allows mine developers to designate natural lakes, rivers, streams, and wetlands as "waste treatment systems" exempt from the CWA. Tribes also noted that when a mine destroys a wetland in an area where a Tribe has treaty rights, the wetland mitigation does not always occur in an area where the Tribe has treaty rights, thus diminishing the protection of the treaty resource.

Tribes also questioned whether the EPA or state environmental agencies were performing adequate water quality monitoring, or putting too much trust in self-reporting by companies. Tribes further expressed concerns about spills, and the resulting disruption of ecosystems. Tribes were particularly concerned about pollution from uranium, and the risks of exposure to radioactive materials. One Tribe expressed a view that one agency is biased in favor of uranium mining interests. Although there was not a specific emphasis on air quality in the Tribes' comments, the general concerns about the ways mining activities affect the environment appear to include concerns about air quality. Tribes also expressed concerns that agencies do not consider Tribal interests seriously in the consultation process for environmental permitting relating to mining activities.

Some Tribes expressed concern about the effects of fracking activity on Indian lands, culture, and environment; these were largely similar to concerns expressed in the context of mining. A Tribe commented that the government monitors fracking activities only for immediate environmental impacts, even though they might have long-term impacts as well. Tribes specifically expressed concern that the reinjection of the water contaminates fresh water. A Tribe also asserted that directional drilling affects total dissolved solids in nearby rivers. Tribes also commented that fracking increases the chances of earthquakes. One Tribe expressed concern that fracking wells emit methane gas.

Summary of Tribal Recommendations:

- Repeal or reform the Mining Act, to disallow mining conducted on Federal lands, or allow more government control over mining conducted on Federal lands.
- Close Clean Water Act loopholes through statutory and/or regulatory change.
- Improve enforcement of existing environmental laws.
- Strengthen governmental oversight of fracking activities through legislative action or through Federal or state agency regulation.
- Consider both immediate and long-term impacts of fracking in decision-making.

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F. Treaty Rights in Infrastructure Determinations

The overarching theme that Tribes emphasized with regard to Tribal treaty rights was that, absent the consent of the affected Tribe(s), the United States should not authorize any infrastructure project that would negatively impact Tribal treaty rights, sacred sites, or ancestral lands. Tribes emphasized that Federal agencies often treated consultation on treaty rights as a "box to be checked" rather than a meaningful and substantive dialogue between two sovereigns, and voiced their concern that the United States often delegated consultation and decision-making authority on infrastructure projects to state or local governments or private parties.

Tribes were also very concerned with a number of Federal infrastructure permitting processes that they felt undermined Tribal treaty rights and allowed for the pollution of Tribal lands. In particular, multiple Tribes requested that the Corps withdraw Appendix C. These Tribes argued that the Corps implemented Appendix C without congressional authorization or the required approval from the Advisory Council on Historic Preservation, and that Appendix C ignores or contradicts ACHP's regulations implementing the NHPA. Tribes similarly opposed the use of Nationwide Permits to authorize major infrastructure projects (particularly oil pipelines), which Tribes did not believe sufficiently safeguarded treaty rights.

Other comments suggested withdrawing expansive regulatory definitions under the Clean Water Act that allow for the pollution of waterways upstream from Tribal treaty-protected waters. Numerous additional comments were received requesting that Federal agencies provide employees with training about Indian law and the trust responsibility generally as well as region-specific Tribes, lands, and treaties.

Summary of Tribal Recommendations

- Condition Federal infrastructure projects negatively impacting Tribal treaty rights, trust lands, sacred sites, or ancestral lands on the consent of the affected Tribe(s).
- Withdraw 33 C.F.R. Part 325 Appendix C.
- Do not issue Nationwide Permits for activities that can negatively impact Tribal treaty rights.
- Close loopholes in the Clean Water Act that allow for pollution of treaty-protected waterways through expansive definitions of the terms "waste treatment system" and "fill material."
- If an infrastructure project affects tribal treaty rights, the United States must not delegate consultation, permitting, or other decision-making authority to state or local governments or private individuals or corporations.
- Provide Federal agency staff training on Federal Indian law, the treaty system, and the trust responsibility, with staff in specific regions receiving additional training for regional treaties and Tribal rights.

G. United Nations Declaration on the Rights of Indigenous People

A core issue identified during the course of the consultations is the manner in which the Federal Government engages the Tribes in consultation. One of the recurring sub-issues in this

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area is the lack of established, government-wide protocols governing the consultation process. In many instances, commenters pointed to the principles set forth in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). In 2010, the United States announced its support for the UNDRIP. The UNDRIP provides for consultation and cooperation in good faith with indigenous peoples to obtain their free, prior, and informed consent, through representatives of the Tribe's choosing, before adopting legislative or administrative measures that may affect them. Additionally, the UNDRIP states that where a project affects Tribal lands or territories, the government should provide effective mechanisms for redress, as well as for appropriate measures to mitigate adverse environmental, economic, social, cultural or spiritual impacts.

Summary of Tribal Recommendations:

- Many Tribes referenced the UNDRIP as a good starting point and ready standard that Federal agencies could adopt.
- Some Tribes called on Federal agencies to adopt the UNDRIP principles.
- Some Tribes suggested the existing Executive Order and Presidential Memorandum on consultation be revised to reflect the UNDRIP principles.

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Appendix 6. Positive Examples and Innovations that are Working for Tribes and Federal Partners Alike

Through the consultation sessions held across the country and the numerous written comments received, Tribes made note of several examples of agencies, staff, and policies that they like. A few that were mentioned more than once are noted below. They are intended to service as positive examples of steps agencies can take to innovate and change the way they do business, train and manage staff, and think about working with Tribes to the mutual benefit of Tribes, Federal partners, and often other stakeholders too.

A Statement of Relationship that Facilitates Fish & Wildlife Service Consideration of Ecological, Historical, and Cultural Knowledge at the Department of Interior

Recognizing the value of traditional ecological knowledge to the Tribal and Federal land management decision-making process, the Fish and Wildlife Service created a process by which the Gila River Indian Community is encouraged to inform and advise the Fish and Wildlife Service Region about the spiritual and cultural significance of their natural resources and the types of projects that may concern Tribes or impact their resources. This process better enables the Fish and Wildlife Service to incorporate the Gila River Indian Community's historical, ecological, and cultural knowledge into the Federal decision-making process.

The document that facilitates this partnership is a 2016 Statement of Relationship (SOR) between the Southwest Region of the U.S. Fish and Wildlife Service and the Gila River Indian Community in Arizona. The document is intended to promote communication, support a formal consultation process, and strengthen the government-to-government relationship between the Tribe and the Region.

The SOR also establishes protocols for formal communications. These guidelines encourage open discussion to facilitate proactive, cooperative efforts between Tribes and the Federal Government, and include ways to protect sensitive information. Finally, the SOR also facilitates coordination between the Tribe and the Region when there is a request for technical, biological or economic assistance. The text of the SOR can be found on page 72 and 73 of the following document: https://www.fws.gov/mountain-prairie/tribal/documents/Tribal_Consultation_Guide_Apr_2013.pdf

Planting Seeds of Understanding for more Productive Future in the Albuquerque District of the Army Corps of Engineers within the Department of Defense

Tribes manage about eighty percent of the land in the middle Rio Grande Valley. Much of the Army Corps' Albuquerque District overlaps with this area, which includes trust lands, Tribally-owned lands, and aboriginal lands of Tribes. Recognizing the importance of having significant Tribal expertise on staff in the region and modifying their standard procedures to take Tribal interests into account, the Albuquerque District has made the following standard practice—and has received high praise from some Tribes in the region:

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- A full-time Tribal Liaison enhances cross-cultural communication by ensuring that Tribal perspectives and values are considered early and often
- Key Corps staff receive both academically-based and culturally-based training using both government staff and Tribal members as instructors; also partner with Pueblo de Cochiti on "immersion" training where participants live and learn at the pueblo for a work week
- New Commanders visit reservations early in their tenure and then regularly to establish and nurture a leadership relationship; staff do the same to ensure day-to-day activities are well coordinated and done in partnership with Tribes
- Tribal and Corps staff brief each other during annual partnership meetings, where they discuss successes and concerns, and plan for future activities---awareness is key to engagement, no surprises, and efficient workload management
- Tribal and Corps staff routinely create programmatic agreements (Federal agencies and Tribes co-sign)
- Corps "culture" includes the expectation that lands and resources are co-managed. Examples of co-management include the management of the natural resources in and around Lake de Cochiti in New Mexico. Other examples of co-management in other regions include a fish hatchery on the Columbia River with the Nez Perce, and wildlife management on the Missouri River with several Sioux Tribes and the Three Affiliated Tribes.

Modeling a Cooperative Relationship with Eleven Great Lakes Tribes and the Forest Service at the Department of Agriculture 1999 Tribal MOU Eastern Area

In the Great Lakes region, a Memorandum of Understanding (MOU) governs the relationship between the USDA Forest Service and eleven Lake Superior Ojibwe Tribes who are members of the Great Lakes Indian Fish and Wildlife Commission (GLIFWC).
This MOU emerged in the 1990s, stemming from shared concerns among both Tribes and the Forest Service about the exercise of treaty rights in ceded lands within National Forests. Forgoing a legal battle, Tribal and Federal governmental bodies elected to negotiate a framework by which those rights would be acknowledged, interpreted, and treaty rights implemented.
In 1999, after six years of consultation, GLIFWC member Tribes ratified an MOU along with three entities of the Forest Service: the Forest Service's Eastern Region, the Law Enforcement and Investigation Branch, and the Northern Research Station. The MOU encompasses ceded lands in the Chequamegon-Nicolet National Forest in Wisconsin and the Ottawa, Hiawatha and Huron-Manistee National Forests in Michigan. The MOU articulates the Forest Service's recognition of Tribal treaty rights, Tribal sovereignty and the capacity to self-regulate Tribal resources and their use. It acknowledges the Forest Service's role in fulfilling the Federal Government's trust responsibilities and treaty obligations.

The MOU codifies a true government-to-government relationship and establishes a framework for collaboration based on consistent and timely communication and Tribal participation in National Forest decision-making. The MOU also outlines shared goals of protecting, managing and enhancing ecosystems that support natural and culturally relevant forest resources. It also provides a broad framework for a consensus-based consultation process where Tribes have input into decisions affecting the abundance, distribution of, and access to National Forest resources. Although Tribal governments who are signatory to the MOU and the

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Forest Service do not always agree, it has been instrumental in providing a forum in which they can interact as co-managers in order to resolve disagreements and coordinate activities.

Further, the MOU lays out a set of mutually agreeable regulations for the exercise of treaty gathering rights and makes clear the fact that Tribes themselves have the right and responsibility to enforce regulations. The citation for the MOU, as amended in 2012, is at the bottom of this page.[24]

Creating a System for Tribal Engagement through the Tower Construction Notification System (TCNS) at the Federal Communications Commission

The Federal Communications Commission (FCC) developed the Tower Construction Notification System (TCNS) to ensure that all potentially interested Tribes have an opportunity to comment, through the Section 106 process, on the proposed construction of communications towers and antennas in connection with FCC-licensed services.

This system was created in response to national interest in building significant wireless communications infrastructure networks, including cellular towers. The FCC recognized that it needed a process that would ensure that this infrastructure could be built in a timely manner while preserving properties of historical, cultural, religious, and ecological significance to Tribes. The program was designed to ensure FCC permit applicants have a reliable, timely way to get Tribal input and address Tribal concerns as they construct networks and that Tribes have the ability to participate in assessing and mitigating any effects that construction may have. To start, the FCC asked each Tribe to identify its geographic area of interest. With this as the foundation, the FCC created TCNS, a voluntary notice and engagement system.

Through TCNS, as part of proposing an FCC-regulated communications infrastructure project, the project sponsor uses an FCC-created electronic platform to provide potentially affected Tribes with the location and project details of each project. To ensure confidentiality of site and project information, project proponents can view only their own projects, and Tribes can view only projects within their geographic areas of interest.

At the FCC, only the Federal Preservation Officer (FPO) and Deputy, along with a few staff members, may view all TCNS records and correspondence. TCNS supports two-way communication, but Tribes also have the option of responding outside TCNS, either to the project proponent or to the FCC.

The FCC does not consider the use of TCNS by project proponents as consultation with the Tribes. Rather, TCNS is a tool through which Tribes and the FCC can determine whether or not consultation is necessary. In most cases, Tribes do not request consultation, and no

[24] https://urldefense.proofpoint.com/v2/url?u=http-3A__www.fs.fed.us_spf_tribalrelations_documents_agreements_mou-5Famd2012wAppendixes.pdf&d=DgIFAg&c=y0h0omCe0jAUGr4gAQ02Fw&r=PQMViBrsxINUKzfj8Dxda7GxMHMewl2EiYDwYE6k_DM&m=V-_pwtBNcoaqmJ6j9wD_jhrESVHcN2MZ-xzDwElLSWY&s=X1UlyRLAH2tTHG0jM9M0dzgU3RlVBr5iSvZ7OQ4UCJg&e=

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consultation is needed, either because the proposed project raises no concerns or because the Tribe and the project proponent are able to agree on measures that address any concerns (for example, moving the project location or monitoring during ground disturbance). The Tribe's historic preservation staff or Tribal Historic Preservation Officer may ask the FCC's FPO to become directly involved in any Section 106 review. The Tribe may also request formal consultation between FCC management and the Tribal leadership.

Every Tribe has self-identified in TCNS a geographic area of interest based on the Tribe's understanding of its own history and traditions. These areas of interest are typically designated by county or state. Project proponents enter into TCNS the locations of their proposed constructions and other relevant information. On a weekly basis, TCNS sends notices to the Tribes (and the relevant State Historic Preservation Officer) listing all new proposed projects within their geographic areas of interest. At the same time, TCNS provides the project proponents with a list of the Tribes notified for each of their projects. The TCNS weekly notices also inform the project proponents of information that some Tribes have indicated they require in order to complete their reviews through the Section 106 process.

Tribes are encouraged to inform the project proponent whether or not they have concerns about a proposed construction within thirty days of notice. After thirty days, if a project proponent believes that the Tribe has not responded in a timely fashion, it may, after demonstrating active efforts at contact, refer the matter to the FCC staff. The FCC will review the record and make its own effort to engage the Tribe. Depending on the circumstances, the FCC may authorize the project to continue. Project proponents may also refer on a similar basis cases where communication from the Tribe has ceased after an initial response. In general, under the FCC's process, most cases where a Tribe has entirely failed to respond can be resolved within approximately sixty days after submission to TCNS. Under the FCC's rules, unless every Tribe contacted has confirmed it has no further concerns about effects on historic properties, the proponent cannot construct without specific authorization from the FCC. More information on TCNS can be found here: http://wireless.fcc.gov/outreach/index.htm?job=tower_notification.

Model Cooperation among Tribes, the North Dakota State Department of Transportation and the Federal Highway Administration (FHWA) at the Department of Transportation

For the U.S. Highway 2 project in 2000-2001, Tribal elders in the North Dakota area and State DOT archaeologists worked together in the field to identify and avoid sensitive sites, providing a model to address Tribal concerns in future highway projects, and in 2008, North Dakota Department of Transportation employed Tribal monitors in the field with archaeologists. The subsequent NW Williston Bypass project expanded the inclusion of Tribal monitors and employed fifteen Tribal members to identify stone features, delineate site boundaries, plot GPS points, prepare feature drawings, and other tasks.

As part of this process, between 2004 and 2006 a Tribal Consultation Committee (TCC) was developed, initially comprised of eight Tribes (now expanded to 19). The Tribes have drafted a Programmatic Agreement providing efficiencies and opportunities for early Tribal engagement by bringing potential issues to the TCC in advance of the planning and development process for transportation projects, thereby avoiding problems before they are created. This project created a process to fully and efficiently resolve issues where Tribal heritage is

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threatened by transportation project planning and development. More information can be found at: http://www.achp.gov/docs/Section106SuccessStory_TCC.pdf

Balancing protection of historic properties and energy development in the Nine Mile Canyon through the Bureau of Land Management (BLM) at the Department of Interior

In the early 2000s, energy exploration began in the Nine Mile Canyon area of Utah. Increasing industrial activity and diesel-fueled trucks caused increased erosion of an estimated 10,000 prehistoric rock art panels etched or painted on the walls of the 45-mile canyon. In 2005, the Bureau of Land Management (BLM) released a proposal for an 800-well natural gas development that would dramatically increase traffic and potentially transform some of the area into an industrial zone.

Consultation centered on protecting historic properties, especially the fragile rock art, and resulted in a 2010 Programmatic Agreement that created a blueprint for safeguarding historic properties while allowing energy development to proceed. The Section 106 process balanced protection of historic properties with energy development. The project provides an example of how industry and preservationists can be partner and underscores that consultation must engage all interested parties at the earliest stages of project planning. More information can be found at: http://www.achp.gov/docs/Section106SuccessStoryNineMilev4.pdf

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submitted by Bryce In the Woods 5/8/17

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DISTRICT 4
James L. Pearman
Kevin Keckler
Merrie Miller
Mark J. Knight

DISTRICT 5
Ryman LeBeau
Raymond Uses The Knife
Robert Chasing Hawk, Sr.
Derek Bartlett

DISTRICT 6
Tuffy Thompson
Wade Tater Ward

TRIBAL MEMORANDUM

DATE : 05/08/17

TO : SUPERINTENDENT, Cheyenne River Agency

FROM : Ev Ann White Feather, Tribal Secretary EvAnn White Feather

SUBJECT : Resolution No. 145-2017-CR: The Cheyenne River Sioux Tribe continues to be firmly opposed to the construction of any and all uranium mines that would cross the land, waterways, and aquifers reserved by the United States of America for the Tribe in the 1851 Treaty of Fort Laramie and contains the provision.

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Transmitted herewith are an original and two (2) copies of Resolution No. 145-2017-CR which was duly adopted by the Cheyenne River Sioux Tribal Council during its Regular Session held on May 4, 2017.

EWF/kr

Cc: Chairman
Treasurer
Administrative Officer
Tribal Comptroller
Central Records
Committee Secretary
District Officers (6)
File/2

The blue represents the thunderclouds above the world where live the thunder birds who control the four winds. The rainbow is for the Cheyenne River Sioux people who are keepers of the Most Sacred Calf Pipe, a gift from the White Buffalo Calf Maiden. The eagle feathers at th e edges of the rim of the world represent the spotted eagle who is the protector of all Lakota. The two pipes fused together are for unity. One pipe is for the Lakota, the other for all the other Indian Nations. The yellow hoops represent the Sacred Hoop, which shall not be broken. The Sacred Calf Pipe Bu ndle in red represents Wakan Tanka – The Great Mystery. All the colors of the Lakota are visible. The red, yellow, black and white represent the fo ur major races. The blue is for heaven and the green for Mother Earth.

RESOLUTION NO. 145-2017-CR

WHEREAS, the Cheyenne River Sioux Tribe of South Dakota is an unincorporated Tribe of Indians, having accepted the provisions of the Act of June 18, 1934 (48 Stat. 984); and

WHEREAS, the Tribe, in order to establish its Tribal organization; to conserve its Tribal property; to develop its common resources; and to promote the general welfare of its people, has ordained and established a Constitution and By-Laws; and

WHEREAS, the Tribe will fight any and all threats to Grandmother Earth; and

WHEREAS, access to clean, pure water is an essential part of the Lakota way of life, and has been revered in both traditional, cultural, and religious practices for thousands of years; and

WHEREAS, the general welfare, health, and sustainability of the Tribe depends on the protection of clean water, air, and soil; and

WHEREAS, the Tribe understands the value and need to protect our water and environmental resources from a cultural perspective and a practical perspective; and

WHEREAS, the preservation and protection of our cultural and spiritual resources mandated by the natural laws of every Indigenous Nation and are of the utmost importance of our continued existence as sovereign Nations; and

WHEREAS, the proposed Dewey-Burdock Uranium Mine will be sited in the Black Hills which is a sacred place to the Lakota people; and

WHEREAS, the proposed Dewey-Burdock Uranium Mine will threaten sites of historical and cultural importance; and

WHEREAS, thousands of abandoned uranium mines across Indian Country have directly affected the health and well-being of indigenous peoples; and

WHEREAS, abandoned uranium mines are scattered throughout South Dakota. These mines have contaminated the water, air, and soil; and

WHEREAS, that decades of uranium mining on other tribal lands has left many drinking water sources contaminated with high levels of radiation and demonstrates the danger that uranium mines pose to the environment and the resources upon which we rely; and

WHEREAS, studies have shown that the health effects of uranium mining and radiation poisoning include a strong linkage to lung cancer, along with higher instances of all cancer, impaired kidney function and other severe health impacts; and

WHEREAS, that the proposed Dewey-Burdock Uranium Mine will be operating on or near the Inyan Kara Aquifer, the Minnelusa Aquifer, and other aquifers in the area which provide water for human use, livestock use, irrigation, among other uses, and which contain reserved water rights of the Tribe; and

WHEREAS, the Powertech company intends to inject waste from the mining process below known drinking water sources. Some experts agree that this process will likely contaminate groundwater; and

WHEREAS, that the in situ mining process proposed by the Powertech company is a water intensive process and is planned in area that is very dry. The request to pump 4,000 gallons of water a minute or more will use a lot of water in an already dry area; and

WHEREAS, any uranium mining that occurs on or near tribal lands will have negative and potentially irreversible impacts upon the sacred water sources of the Tribe and would cause harm to the Tribe's economy and environment; and

WHEREAS, the Tribe is a signatory in the 1851 Treaty of Fort Laramie and such Treaty serves as a binding, bi-lateral agreement with the United States, reserving certain territory to the Tribe, and which has never been abrogated; and

WHEREAS, the 1851 Treaty of Fort Laramie provides a basis for the United States' trust responsibility to the Tribe; and

WHEREAS, *Winters v. United States* recognized water rights for Tribes, specifically when Tribal Reservations were created, and that Tribes are entitled to enough water for which the reservation was established; and

WEHREAS, the Tribe opposed any uranium mine that would be sited on or near the reserved territories of the 1851 Treaty of Fort Laramie, including uranium mines that would contaminate waterbodies, rivers, aquifers, air, and soil; and

WHEREAS, the Sovereign Nation of the Cheyenne River Sioux Tribe will not now or ever allow any government or private party to deny us our right to preserve and protect what we hold sacred; now

THEREFORE BE IT RESOLVED, the Cheyenne River Sioux Tribe continues to be firmly opposed to the construction of any and all uranium mines that would cross the lands, waterways, and aquifers reserved by the United States of America for the Tribe in the 1851 Treaty of Fort Laramie; and

BE IT FINALLY RESOLVED, that nothing in this resolution diminishes, divests, alters, or otherwise affects any inherent, treaty, statutory or other rights of the Cheyenne River Sioux Tribe over the activities described herein. The Cheyenne River Sioux Tribe expressly retains all rights and authority over the activity described herein, including but not limited to legislative, regulatory, adjudicatory, and taxing powers.

RESOLUTION NO. 145-2017-CR
Page Three:

CERTIFICATION

I, the undersigned, as Secretary of the Cheyenne River Sioux Tribe, certify that the Tribal Council is composed of fifteen (15) members, of whom 13, constituting a quorum, were present at a meeting duly and regularly called, noticed, convened and held this 4th day of May 2017, Regular Session; and that the foregoing resolution was duly adopted at such meeting by a roll call vote of 12 yes, 1 no, 0 abstaining, 1 absent, and 1 not voting (Vice-Chairman).

Ev Ann White Feather, Secretary
Cheyenne River Sioux Tribe

CHAIRMAN
Harold C. Frazier

SECRETARY
EvAnn White Feather

TREASURER
Benita Clark

VICE-CHAIRMAN
Robert Chasing Hawk

CHEYENNE RIVER SIOUX TRIBE

P.O. Box 590
Eagle Butte, South Dakota 57625
Phone: (605) 964-4155
Fax: (605) 964-4151

TRIBAL COUNCIL MEMBERS

DISTRICT 1
Bernita In the Woods
Bryce In the Woods

DISTRICT 2
Theodore Knife, Jr.

DISTRICT 3
Edward Widow
John Kessler

DISTRICT 4
Jim Pearman
Kevin Keckler
Merrie Miller-White Bull
Mark Knight

DISTRICT 5
Ryman LeBeau
Raymond Uses The Knife
Robert Chasing Hawk
Derek Bartlett

DISTRICT 6
Tuffy Thompson
Wade "Tater" Ward

June 19, 2017

VIA FEDERAL EXPRESS AND EMAIL
Tracking No: 779436263542

United States Environmental Protection Agency
Ms. Valois Shea
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80202-1129

Re: *Cheyenne River Sioux Tribe Comments in Response to* ***U.S. Environmental Protection Agency Region 8 Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for Dewey-Burdock Uranium In-Situ Recovery Site***

Dear Ms. Shea:

As the Chairman of the Cheyenne River Sioux Tribe ("Tribe"), I am contacting the U.S. Environmental Protection Agency ("EPA") to submit the Tribe's official comments on the EPA's Region 8 Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for Dewey-Burdock Uranium In-Situ Recovery Site.

The Cheyenne River Sioux Reservation is located wholly within the exterior boundaries of the State of South Dakota. (A map showing the location of the Tribe's Reservation is enclosed herewith.) However, our rights and trust resources extend beyond our Reservation borders as a

The blue represents the thunderclouds above the world where live the thunder birds who control the four winds. The rainbow is for the Cheyenne River Sioux people who are keepers of the Most Sacred Calf Pipe, a gift from the White Buffalo Calf Maiden. The eagle feathers at the edges of the rim of the world represent the spotted eagle who is the protector of all Lakota. The two pipes fused together are for unity. One pipe is for the Lakota, the other for all the other Indian Nations. The yellow hoops represent the Sacred Hoop, which shall not be broken. The Sacred Calf Pipe Bundle in red represents Wakan Tanka – The Great Mystery. All the colors of the Lakota are visible. The red, yellow, black and white represent the four major races. The blue is for heaven and the green for Mother Earth.

matter of federal law, and they are rights for which the United States owes us a fiduciary duty. Therefore, the purpose of these comments is to insist that the EPA must act as a fiduciary by both consulting with the Tribe on any impact to those rights and by protecting those rights from harm.

Please note that these comments do not satisfy the EPA's consultation obligation to the Tribe. Moreover, they should be considered a ***preliminary*** statement of some of the Tribe's concerns regarding the Dewey-Burdock Mine. The Tribe cannot fully assess its concerns until it has had an opportunity to engage in meaningful government-to-government consultation on these issues as described more fully herein.

The Tribe's Rights and Trust Resources in the vicinity of the Dewey-Burdock Uranium Mine

- Reserved water rights: The Tribe enjoys reserved water rights in the Missouri River Basin as well as related groundwater in an amount sufficient to fulfill the purposes of the Reservation. *See Winters v. United States*, 207 U.S. 564 (1908); *Arizona v. California*, 373 U.S. 546, 600 (1963). These reserved water rights are a trust resource for which the United States owes a fiduciary duty. These rights are a function of the Tribe's extant treaty rights. *See Treaty of Fort Laramie with the Sioux, Etc.*, 11 Stat. 749 (Sep. 17, 1851); *Treaty with the Sioux – Brule, Oglala, Mniconjou, Yanktonai, Hunkpapa, Blackfeet, Cuthead, Two Kettle, Sans Arc, and Santee*, 15 Stat. 635 (Apr. 29, 1868). The Tribe retains reserved water rights in off-Reservation waterways in the Missouri River Basin as well as groundwater and aquifers outside its Reservation.

- Hunting and fishing rights: The Tribe enjoys hunting and fishing rights in Lake Oahe, the reservoir of the Missouri River that are subject to the United States' trust duty. The rights are a function of the Tribe's extant treaty rights and have been preserved by Congress. *See Treaty of Fort Laramie with the Sioux, Etc.*, 11 Stat. 749 (Sep. 17, 1851); *Treaty with the Sioux – Brule, Oglala, Mniconjou, Yanktonai, Hunkpapa, Blackfeet, Cuthead, Two Kettle, Sans Arc, and Santee*, 15 Stat. 635 (Apr. 29, 1868); Act of Sep. 3, 1954, Pub. L. 83-776, 68 Stat. 1191. Numerous off-Reservation tributaries, aquifers, and other bodies of water belong to the Lake Oahe hydrologic system and consequently will impact the Tribe's retained hunting and fishing rights in Lake Oahe.

- Historic, spiritual, and cultural resources: There are numerous sites of historic, spiritual, and cultural significance to the Tribe throughout the Tribe's large aboriginal territory, but especially within the boundaries of the lands reserved to the Tribe in the *Treaty of Fort Laramie with the Sioux, Etc.*, 11 Stat. 749 (Sep. 17, 1851). The Black Hills of South Dakota constitute among the most sacred lands to the Lakota people from time immemorial. We call the Black Hills *Wamaka Og'naka I'Cante* or "the heart of everything that is." It is called this because the Black Hills contain the most important religious sites of the Lakota people, including the site where Lakota people believe that our people emerged onto this

earth, and sites where the Lakota people have performed annual religious ceremonies and pilgrimages since before recorded history and through today. In addition, the Lakota people lived, hunted, buried our dead, and performed our religious sacraments, including *inipi* (sweatlodge), *hanbleca* (vision questing), and other rites throughout our long history in the region. We still use the Black Hills in this way. In light of our long and rich history in this region, as well as our use and occupation of this area through the present day, there are untold sites of historical, cultural, and spiritual significance throughout the Black Hills that require careful consideration. Furthermore, the Tribe's reserved water rights themselves constitute a spiritual and cultural resource in light of the primary role that water plays in Lakota religious sacraments, which require environmentally and ritually pure water. (A map showing the Tribe's 1851 territory is enclosed herewith.)

United States Trust Duty

The United States has a two-fold trust duty to the Tribe. Courts have long recognized the "existence of a general trust relationship between the United States and the Indian people." *United States v. Mitchell*, 463 U.S. 206, 225 (1983). The courts are clear that "any Federal government action is subject to the United States' fiduciary responsibilities toward the Indian tribes." *Nance v. EPA*, 645 F.2d 701, 711 (9th Cir. 1981) (emphasis in original) (citing *Seminole Nation v. United States*, 316 U.S. 268, 297 (1942)).

Secondly, the federal government has a specific trust duty to protect the rights reserved in the 1851 and 1868 Fort Laramie Treaties. The Tribe was a party to the 1851 and 1868 Fort Laramie Treaties, which reserved land and water to the Tribe in order to fulfill the purpose of the Reservation to provide for self-sufficiency. *See Winters v. United States*, 207 U.S. 564 (1908). The reserved water right recognized in the *Winters* doctrine, and reserved for the Tribe, includes the right to clean, safe water. *See, e.g., United States v. Gila River Irrigation Dist.*, 920 F. Supp. 1444, 1448 (D. Ariz. 1996). Likewise, the Tribe has retained its right to hunt, fish, and gather on the Reservation and in Lake Oahe. Act of September 3, 1954, Pub. L. 83-766, 68 Stat. 1191; *South Dakota v. Bourland*, 508 U.S. 679, 697 (1993) (noting that Congress explicitly has reserved the Cheyenne River Sioux Tribe's original treaty rights, including the right to hunt and fish, on Lake Oahe); *see also United States v. Dion*, 476 U.S. 734, 738 (1986) ("Indians enjoy exclusive treaty rights to hunt and fish on lands reserved to them . . . ."). The Tribe's water rights include a right to water that is sufficient in amount and quality to support hunting and fishing rights. *United States v. Adair*, 723 F.2d 1394, 1409, 1411 (9th Cir. 1983). As a result of the federal government's trust responsibilities to the Tribe, the United States Environmental Protection Agency ("EPA") must ensure that such trust resources are preserved in any activity that may impact the Tribe's rights, including the Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for Dewey-Burdock Uranium In-Situ Recovery Site.

The United States Must Consult on the Tribe's Rights and Has a Duty to Protect Them

The United States and the EPA's trust relationship does not only extend to the affirmative obligations to protect tribal rights and trust resources, but the United States must also engage in

meaningful pre-decisional consultation on projects that will affect the Tribe's treaty rights and trust resources. Executive Order 13175, Consultation and Coordination with Indian Tribal Governments (Nov. 6, 2000); EPA Policy for the Administration of Environmental Programs on Indian Reservations (Nov. 8, 1984); EPA Policy on Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights (Feb. 2016).

"In carrying out its treaty obligations with the Indian tribes, the Government is something more than a mere contracting party." *Seminole Nation v. United States*, 316 U.S. 286, 296-67 (1942). Instead, "it has charged itself with moral obligations of the highest responsibility and trust." *Id.* Pursuant to its trust duty, agencies are required to "consult with Indian tribes in the decision-making process to avoid adverse effects on treaty resources." *Klamath Tribes v. United States*, No. 10-2130, 1996 WL 924509 (D. Or. Oct. 2, 1996) (quoting *Lac Courte Oreille Band of Indians v. Wisconsin*, 668 F. Supp. 133, 140 (W.D. Wis. 1987); *Ctr. for Biological Diversity v. Salazar*, No. 10-2130, 2011 WL 60000497, at *11 (D. Ariz. Nov. 30, 2011). It is not a discretionary duty. *Ctr. for Biological Diversity*, at *11.

The duty to consult is binding on an agency when the agency has announced a consultation policy, and the Tribes have come to rely on that policy. *Yankton Sioux Tribe v. Kempthorne*, 442 F. Supp. 2d 774, 784 (D. S.D. 2006); *see also Oglala Sioux Tribe v. Andrus*, 603 F.2d 707 (8th Cir. 1979); *Lower Brule Sioux Tribe v. Deer*, 911 F. Supp. 395 (D. S.D. 1995); *Albuquerque Indian Rights v. Lujan*, 930 F.2d 49, 58 (D.C. Cir. 1991); *Indian Educators Fed'n Local 4524 of Am. Fed'n of Teachers, AFL-CIO v. Kempthorne*, 541 F. Supp. 2d 257, 264-65 (D. D.C. 2008). At a minimum, this requires that the agency give fair notice of its intentions, which requires, "telling the truth and keeping promises." *Yankton Sioux Tribe*, 442 F. Supp. 2d at 784 (citing *Lower Brule Tribe*, 911 F. Supp. at 399). An agency's failure to provide tribes with accurate information necessary to meaningfully consult before a decision is made is agency failure to meet its consultation obligation. *Id.* at 785; *see also Cheyenne River Sioux Tribe v. Jewell*, No. 3:15-03072, 2016 WL 4625672 (D. S.D. Sep. 6, 2016). ***Reviewing a Tribe's comments submitted in conjunction with an agency's general invitation for public comments is not sufficient to meet this obligation.***

The EPA has explicitly adopted and expounded on a consultation policy consistent with federal law recited herein as set forth in the following: (1) the EPA Policy on Consultation and Coordination with Indian Tribes, dated May 4, 2011; (2) the EPA Policy on Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights, dated February 2016; and (3) the EPA Responses to Comments on EPA Policy for Consultation and Coordination with Indian Tribes: Guidance for Discussing Tribal Treaty Rights. In addition, the EPA has communicated both orally and in writing with officials of the Cheyenne River Sioux Tribe, including myself, to advise that the EPA intends to conduct proper, in-person government-to-government consultation on the Dewey-Burdock Uranium Mine.

Importantly, the EPA's consultation policies commit the EPA to provide further information to the Tribe concerning the effect of the Dewey-Burdock Uranium Mine on our resources, to consult pre-decisionally, to honor the Tribe's requests concerning substantive and logistical details of consultation, to involve EPA decision makers in the consultation process, to

provide written consultation feedback, and to seek to fully understand and reach a consensus with the Tribe.

The federal government has further obligations to tribes under the National Historic Preservation Act ("NHPA") and the Religious Freedom Restoration Act ("RFRA"). The NHPA was enacted to preserve historic resources in the midst of modern projects and requires agencies to fully consider the effects of its actions on historic, cultural, and sacred sites. Section 106 of the NHPA requires that prior to issuance of any federal funding, permit, or license, agencies must take into consideration the effects of that "undertaking" on historic properties. 54 U.S.C. § 306108; 36 C.F.R. § 800.1. The Section 106 process also requires consultation between agencies and Indian Tribes on federally-funded or authorized "undertakings" that could affect sites that are on, or could be eligible for, listing in the National Register, including sites that are culturally significant to Indian Tribes. 54 U.S.C. § 302706. An agency official must "ensure" that the process provides Tribes with "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties . . . articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." 36 C.F.R. § 800.2(c)(ii)(A). This requirement imposes on agencies a "reasonable and good faith effort" by agencies to consult with Tribes in a "manner respectful of tribal sovereignty." *Id.* 36 C.F.R. § 800.2(c)(2)(ii)(B); *see also id.* § 800.3(f) (any Tribe that "requests in writing to be a consulting party shall be one").

Under RFRA, the "Government shall not substantially burden a person's exercise of religion" unless the Government "demonstrates that application of the burden to the person—(1) is in furtherance of a compelling governmental interest; and (2) is the least restrictive means of furthering that compelling governmental interest." 42 U.S.C. § 2000bb-1(b). Tribal religious practices are significantly tied to oral tradition, ancestral lands, and natural resources.

Significantly, the EPA along with several other departments of the United States Federal Government, entered into a Memorandum of Understanding on Interagency Coordination and Collaboration for the Protection of Indian Sacred Sites on September 23, 2016. The Memorandum acknowledges that federal agencies hold in trust many culturally important sites held sacred by Indian tribes, and federal agencies are responsible for analyzing the potential effects of agency projects carried out, funded, or permitted on historic properties of traditional cultural and religious importance to Indian tribes including sacred sites. Additionally, international law, treaties, and jurisprudence has repeatedly affirmed the right of Free Prior Informed Consent. *See Declaration on the Rights of Indigenous People*, art. 10, United Nations (Mar. 2008). The purpose of Free Prior Informed Consent ("FPIC") is to establish bottom up participation and consultation of an Indigenous population prior to the beginning of a development on ancestral land or using resources within the Indigenous population's territory. *Id.*

Tribe's Requests Concerning the Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for Dewey-Burdock Uranium In-Situ Recovery Site

1. The Dewey-Burdock Uranium In Situ Recovery Site Poses a Serious Threat to Tribal Rights that the EPA Must Thoroughly Evaluate

The Dewey-Burdock Uranium Mine is proposed to be sited within the Tribe's 1851 territory and in areas that impact aquifers and tributaries that affect Cheyenne River Sioux Reservation lands and waters. As such, the Dewey-Burdock Uranium Mine will have serious impacts on (a) the Tribe's treaty rights and reserved water rights, (b) the Tribe's cultural resources; and (c) the Tribe's religious exercise, as set forth in further detail below.

a. The Dewey-Burdock Uranium Mine Poses a Serious Threat to the Tribe's Treaty Rights and Reserved Water Rights

The proposed Dewey-Burdock Uranium Mine is proposed to be sited in areas that affect aquifers, watersheds, and tributaries that are hydrologically connected to the waters that affect Cheyenne River Sioux Reservation lands and waters. These lands and waters have been guaranteed to us by Treaty, and the United States must act as our fiduciary in protecting them as a matter of federal law as set forth above.

In 2005, when a drought threatened the Tribe's only source of drinking water, which is drawn from an intake project at the confluence of the Cheyenne River and the Missouri River at Lake Oahe, the U.S. Army Corps of Engineers determined that a loss of this water source would devastate our Tribe. As a consequence, we are vigilant in our monitoring and stewardship of our waters. The Cheyenne River, the waterway that gives our Reservation its name, constitutes the southern border of our Reservation and flows into the Missouri River (Lake Oahe) at precisely the place where the United States has built the water intake that serves our entire Reservation. The Cheyenne River also flows through the Black Hills very close to the site of the proposed Dewey-Burdock Uranium Mine. Other historical uranium mines and other metal mines have been sited near the Cheyenne River in the Black Hills.

The Tribe has collected water samples over many years from the Cheyenne River in an effort to protect the health, safety, and welfare of our people. These samples show levels of 16-32 pCiPl (Pico liter series per liter) in the Cheyenne River. This demonstrates that past uranium mining has, and future uranium mining will, migrate out of the resources and will not be contained. We have also seen high levels of radiation on the Moreau River, another tributary of the Missouri River, caused from past uranium mining upstream. In light of these facts, the Cheyenne River Sioux Tribe strongly opposes any and all current, new, or ongoing uranium mining projects in lands and waters that affect our Reservation.

The current analyses of the Dewey-Burdock Uranium Mine specifically identifies the Cheyenne River and its tributaries as an area that will be affected by the Dewey-Burdock Uranium Mine. Significantly, however, the current analyses conspicuously do not address the impacts of the mining activity on the Cheyenne River Sioux Tribe. There is no risk data concerning human

health impact of the Dewey-Burdock Uranium Mine on the Cheyenne River Sioux people as it relates to the aquifers, watersheds, or tributaries that feed our Reservation. There is no analysis of impacts to fish and wildlife on our Reservation and in Lake Oahe, to which we have rights embodied in both Treaty and federal statute. There is also no analysis of impacts upon plants that we rely upon for food and medicine.

Furthermore, the Preliminary Economic Assessment related to this project notes uncertainty in whether the Dewey-Burdock Mine is even economically viable. This is a grave concern to the Tribe for two reasons. First, it raises the concern that the project proponents will not have the financial resources to provide contingency funds for future remediation or if the project proponent will even maintain responsibility for such activities.

In light of its fiduciary duty to the Cheyenne River Sioux Tribe, until the EPA has thoroughly evaluated the above impacts to the Tribe, any authorizations of the instant uranium mine violates federal law and would be arbitrary and capricious.

b. The Dewey-Burdock Uranium Mine Poses a Serious Threat to the Tribe's Cultural Resources

The site of the proposed Dewey-Burdock Uranium Mine is within the Tribe's 1851 territory. Specifically it is in the vicinity of the Black Hills, among the most sacred sites to the Lakota people. Our people lived in this area, hunted in this area, and made religious pilgrimages in this area from time immemorial. Our Tribal Historic Preservation Officer advises that the site of the proposed mine has the potential to contain numerous sites of cultural and spiritual significance. While it is our understanding that some efforts have been made to identify cultural resources in the project area, the EPA has not consulted with the Tribe pursuant to the National Historic Preservation Act.

c. The Dewey Burdock Uranium Mine Poses a Serious Threat to the Tribe's Religious Exercise

Water is an essential aspect of the Lakota religion. It figures prominently in our theology as the origin of our creation as Lakota people and as a key aspect of how we became who we are today. In addition, water is a key component of many of our religious ceremonies. While many or our religious sacraments require either water or ritual deprivation thereof, water is an essential component of one of our most important religious sacraments, the *inipi* ceremony or sweatlodge. Importantly, this sacrament requires that we use only water that is both environmentally and ritually pure. As noted above, the Tribe has very limited access to water on the Reservation and relies solely on water drawn from the confluence of the Cheyenne River and the Missouri River at Lake Oahe for its drinking water and which represents reserved water rights of the Tribe. Upstream contamination of these waters in which the Tribe owns reserved water rights has the very serious potential to affect the Tribe's and its members' religious exercise in violation of the Religious Freedom Restoration Act.

2. The EPA must engage in meaningful government-to-government consultation with the Tribe

As described herein, the Underground Injection Control Draft Area Permit and Proposed Aquifer Exemption decision for the Dewey-Burdock Uranium In-Situ Recovery Site poses serious threats to the Tribe's reserved water rights, hunting and fishing rights, cultural and spiritual sites, and religious exercise in ways that implicate federal statutes and treaty rights. As further described herein, as a function of its fiduciary duty to the Tribe and as a matter of federal law, the EPA must engage in meaningful government-to-government consultation with the Tribe on the issues discussed herein and other issues that may arise.

On May 12, 2017, officials of the Cheyenne River Sioux Tribe, including myself, attended the public hearing on the Dewey-Burdock Uranium Mine in Rapid City, South Dakota. At that hearing, our representatives and other representatives of the *Oceti Sakowin* (the Great Sioux Nation) provided testimony consistent with the comments herein. Furthermore, at that hearing, the EPA's representative confirmed explicitly that the EPA does not consider any public hearing or written public comments such as these to constitute meaningful government-to-government consultation with the Tribe and that we can expect to have further contact with the EPA. In addition, Cheyenne River Sioux Tribal Historic Preservation Officer Steve Vance received an email from you on May 18, 2017 advising that "the public comment period is different from our Tribal consultation process," and further advising that "[t]he EPA Tribal consultation process is currently in progress for Dewey-Burdock."

The Tribe looks forward to such consultation. Your email instructed the Tribe to contact you or EPA Region 8 Tribal Advisor, Patrick Rogers. As such, we have submitted a formal letter under separate cover requesting government-to-government consultation with the EPA on the Dewey-Burdock Mine to both you and Mr. Rogers. As set forth in that letter, the Tribe believes that such consultation must encompass the following ***at a minimum***:

- Provide the Tribe with all pertinent information concerning the impact on the Tribe's rights before consultation in a timely manner.
- Coordinate with the Tribe before consultation begins, especially with development of an agreement on consultation timelines.
- Consult only with Tribal representatives who have been authorized to engage in government-to-government consultation by the Tribal government.
- Make every effort to conduct Tribal consultation at the seat of Tribal government, Eagle Butte, South Dakota or elsewhere on the Cheyenne River Sioux Reservation.
- Ensure that federal participants in Tribal consultation have actual decision-making authority.

- Provide written confirmation that the agency has considered tribal comments and concerns and the agency's response, whether positive or negative.

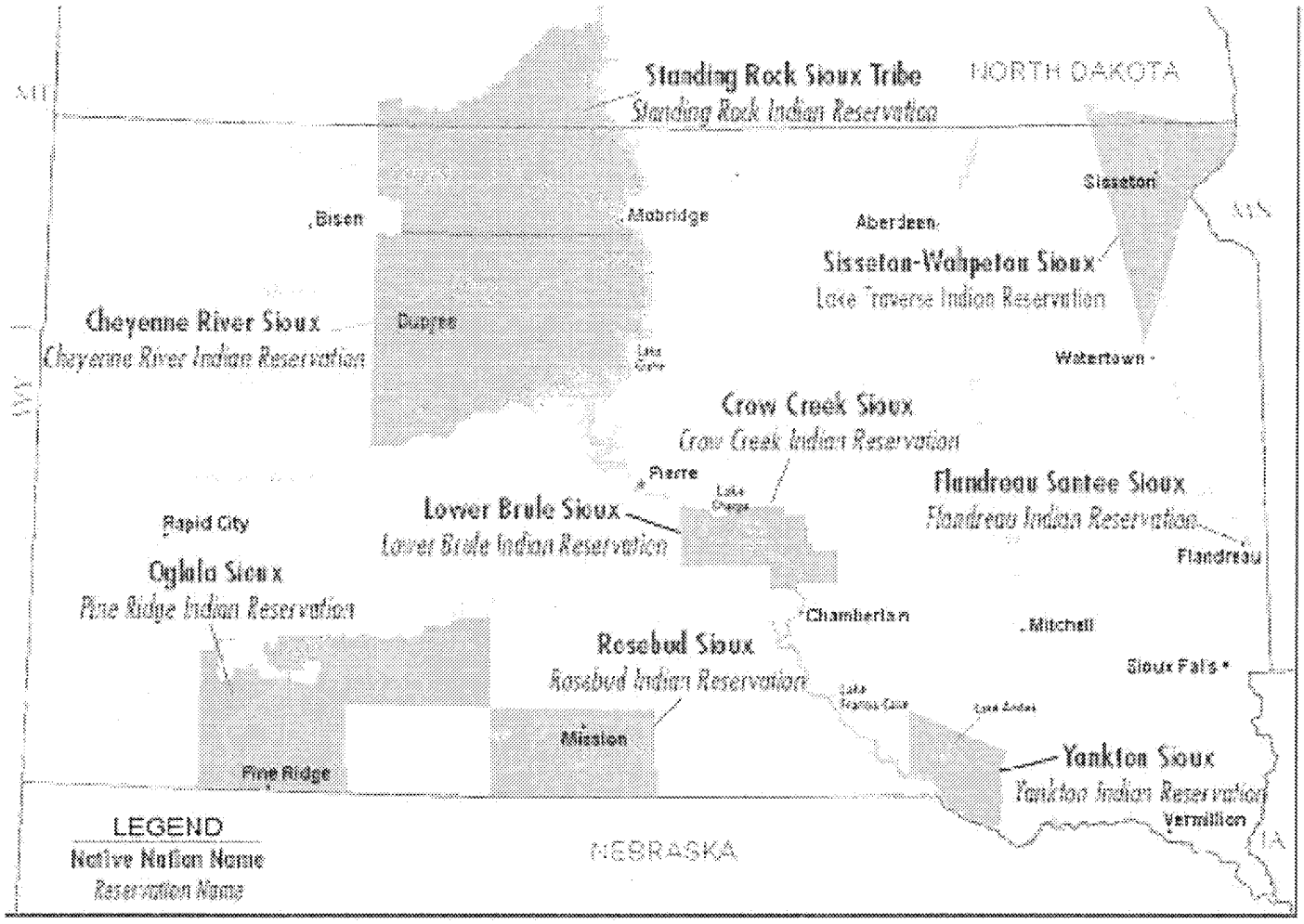
- Obtain resolution of approval from the Tribe that the agency has satisfactorily consulted with the Tribe and the Tribe agrees with the agency's response to Tribal concerns in each instance.

Finally, the EPA must be aware that consultation required under the National Historic Preservation Act concerning cultural and spiritual resources is not sufficient to meet the United States' obligation to consult about reserved water rights, treaty rights, or other religious freedom issues.

I appreciate the EPA's request for comments on this important issue. As noted above, these comments are ***preliminary***. The Tribe reserves the right to submit supplementary comments after engaging in government-to-government consultation with the EPA. Further, in addition to these comments, a formal request for consultation has been sent to you under separate cover. Please do not hesitate to contact me if you should have any questions.

Very Truly Yours,

Harold Frazier
Chairman, Cheyenne River Sioux Tribe


Standing Rock Sioux Tribe
Standing Rock Indian Reservation
NORTH DAKOTA
Bison
Mobridge
Aberdeen
Sisseton
Sisseton-Wahpeton Sioux
Lake Traverse Indian Reservation
Cheyenne River Sioux
Cheyenne River Indian Reservation
Dupree
Watertown
Crow Creek Sioux
Crow Creek Indian Reservation
Pierre
Flandreau Santee Sioux
Flandreau Indian Reservation
Lower Brule Sioux
Lower Brule Indian Reservation
Rapid City
Flandreau
Oglala Sioux
Pine Ridge Indian Reservation
Chamberlain
Mitchell
Rosebud Sioux
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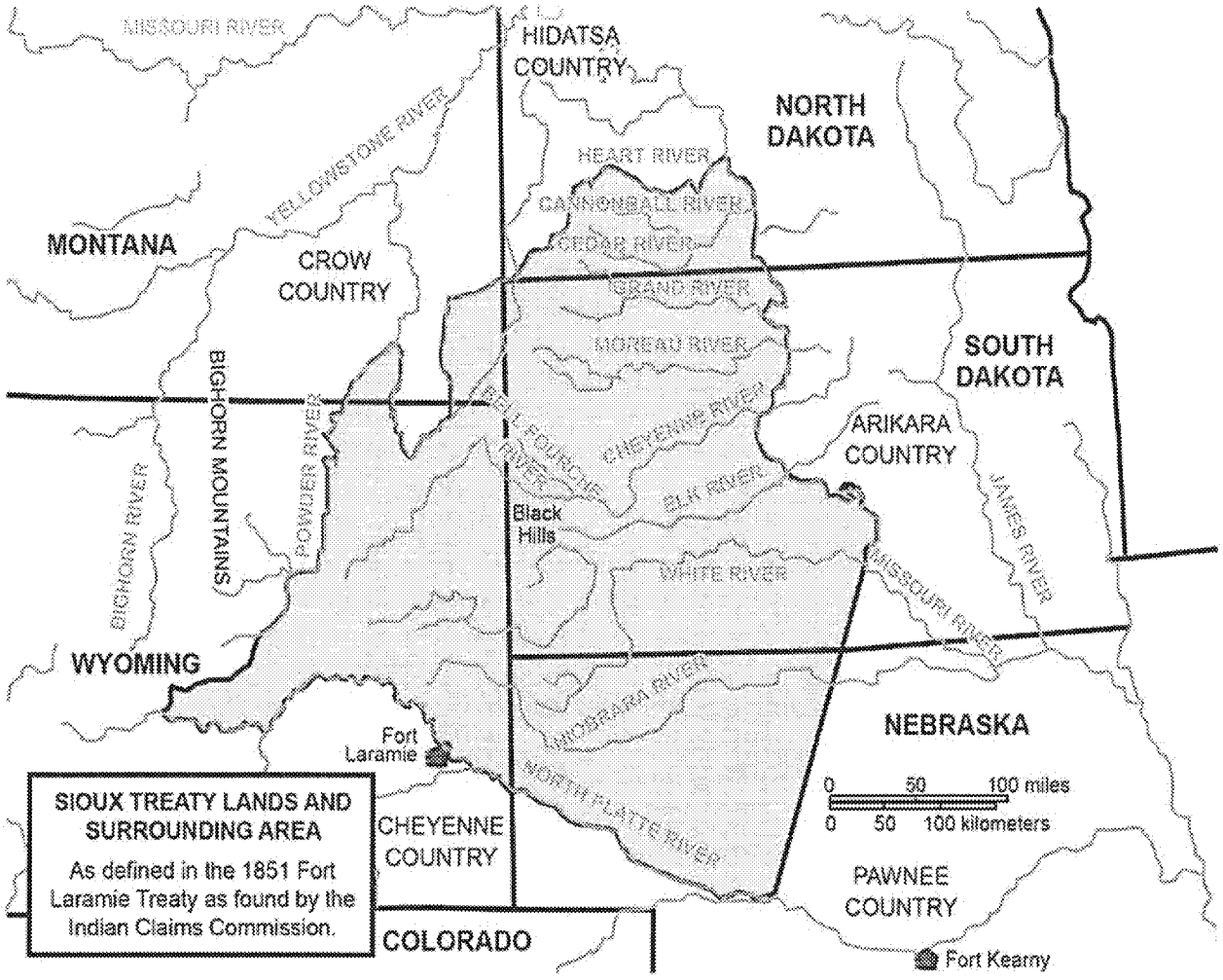
Mission
Yankton Sioux
Yankton Indian Reservation
Pine Ridge
Vermillion
LEGEND
Native Nation Name
Reservation Name
NEBRASKA


MISSOURI RIVER
HIDATSA COUNTRY
NORTH DAKOTA
YELLOWSTONE RIVER
HEART RIVER
CANNONBALL RIVER
CEDAR RIVER
MONTANA
CROW COUNTRY
GRAND RIVER
MOREAU RIVER
SOUTH DAKOTA
BIGHORN MOUNTAINS
POWDER RIVER
BIGHORN RIVER
CHEYENNE RIVER
ARIKARA COUNTRY
ELK FOURCHE RIVER
ELK RIVER
Black Hills
JAMES RIVER
WHITE RIVER
MISSOURI RIVER
WYOMING
NIOBRARA RIVER
NEBRASKA
Fort Laramie
NORTH PLATTE RIVER
0 50 100 miles
0 50 100 kilometers
SIOUX TREATY LANDS AND SURROUNDING AREA
As defined in the 1851 Fort Laramie Treaty as found by the Indian Claims Commission.
CHEYENNE COUNTRY
PAWNEE COUNTRY
COLORADO
Fort Kearny

Christa Spellare May 18,

Resolution 2017-10
A Resolution to Reaffirm a Citywide Commitment for Clean Water and Water Resource Protection

BE IT RESOLVED by the Common Council of the City of Hot Springs, South Dakota, that we are committed to preserving and maintaining the amount and quality of water for the citizens of Hot Springs and its surrounding environs, and

Whereas: The City of Hot Springs was first developed as a town in the late 1800's due to its proximity to the Fall River and the abundant natural warm mineral springs within the valley, and

Whereas: The City of Hot Springs has made long-term investments in stormwater management, potable water systems and wastewater management programs and infrastructure to reduce nutrients and pollution in our waters and to protect our vital water resources, and

Whereas: The Common Council is obligated to preserve and protect the public health, safety and welfare by preventing the pollution of, and maintaining the quality of the water entering in, held within and removed from aquifers serving as the City's water source, and

Whereas: The City of Hot Springs has stated in its water ordinance that our mission is to provide the City's water customers with a safe drinking water supply, water for fire protection and an adequate supply of water for our essential daily needs, and

Whereas: The City of Hot Springs Common Council finds that any pollution or contamination, willful or not, of our water supply to be a direct threat to our community and its health, safety and welfare, and

Therefore: Be it resolved that the City of Hot Springs will take necessary action to ensure the perpetual purity and quality of the waters available for use by the citizens of Hot Springs and those the City distributes water to, and

Therefore: Commit to support any action from the County, State or Federal Governments aimed at protecting the waters of South Dakota, both surface water and underground aquifers, as a critical natural resource necessary for life.

June 19, 2017

Valois Shea
U.S. Environmental Protection Agency, Region 8
Mail Code 8WP-SUI
1595 Wynkoop Street
Denver, CO. 80202-1129
By e-mail to Shea.valois@epa.gov

Dear Ms. Shea:

This letter provides comments from Clean Water Alliance on the EPA's draft Underground Injection Control permits for the proposed Dewey-Burdock uranium project, as well as the associated proposed aquifer exemption. We oppose the EPA's proposed issuance of permits and an exemption for the following reasons.

There are a number of problems with the EPA's documents and with the process surrounding the draft permits and draft exemption. The items we have identified as key issues are explained below. The first part of the comments will discuss the problems with EPA documents. We will then turn to the EPA process and omissions. Then we'll discuss environmental justice and National Historic Preservation Act issues. And finally, we'll consider other types of issues.

DOCUMENT ISSUES

A glaring problem with the EPA's documents on the proposed project is that large portions of the documents used to support the EPA's draft permits are based on other permits that do not exist or that were prepared inadequately. For example, the EPA's documents defer repeatedly to the NRC's SEIS for the Dewey-Burdock project. This document echoed Powertech/Azarga's submissions in all important respects, rather than the NRC taking a hard look at the situation. The EPA documents also refer repeatedly to the requirements of a state NPDES permit that has not even been applied for. And they refer frequently to a state Large Scale Mine Permit and a state Groundwater Discharge Permit (GDP) that have just barely begun the hearing process, are on hold, and are far from issuance.

To rely on non-existent regulatory instruments and what are essentially the applicant's documents for large portions of the permitting documents indicates both problems with the regulatory process and a lack of analysis of the proposed mine, deep disposal wells, and aquifer exemption. These non-existent "permits" are relied upon for major aspects of the proposed mine and associated facilities. For example, the GDP and NPDES permits are relied upon for statements that the land waste disposal option will be safe and that there will be no contamination. This runs counter to the research on this topic, which indicates a build-up of highly-toxic selenium at a similar site. And then the EPA signs off on Powertech's proposal to grow crops on the land disposal sites without any analysis of the safety of this practice for wildlife, domesticated animals, or humans. This is a problem.

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Similarly, the EPA relies upon an "NPDES permit" that hasn't even been applied for to discuss the Emergency Preparedness Program and Environmental Management Plan that are the basis of its discussion of impacts from spills and leaks, worker safety, and other topics. The agency concludes "Because the project site will be reclaimed and released for unrestricted use," there won't be impacts to land use. It's a long way from a non-existent "permit" to full reclamation twenty years down the line. This use of speculative information should not be allowed as part of the application, cumulative effects, draft permit, or aquifer exemption documents.

Some other examples of the reliance upon non-existent "permits" for key aspects of the Cumulative Effects analysis can be found pages 36, 39, 51, 53, 54, 55 (3 times!), 60, 61, 67, 71, 72 (3 times!), 74, 75 (3 times!), 79, 83, 88, 96, 109, 125, 132, 137, 138, 139, 140, 142, and 143. Until if and when the suggested permits are issued, information based on non-permits should be omitted from the EPA's documents. A realistic, complete EPA analysis should be done.

Perhaps the most important problem in the EPA's documents has to do with the confinement of mining fluids in the Class III wells areas. This goes to the heart of the safety of the project, and to the heart of the future of the region. There are real doubts whether the mining fluids can be contained at the proposed mine site. As Dr. Hannan LaGarry's research shows, there are around 7,500 old boreholes on the site, not the lower numbers put forward by the EPA or the company. This number comes from Dr. LaGarry's direct observation of Powertech's records (For further information, his e-mail address is hlagarry@olc.edu). Even the lower numbers indicate that it is unlikely that all old boreholes can be found and properly plugged. And the Class III draft permit is based on information that does not extend 1.2 miles outside the proposed project boundary (p. 36). Additional analysis is needed.

In addition, research by Boggs and Jenkins ("Analysis of Aquifer Tests Conducted at the Proposed Burdock Uranium Mine Site: Burdock, South Dakota," 1980) indicated leakage across the Fuson shale between the Lakota and Fall River formations in the Burdock area; this is one of the TVA papers. The Class III Fact Sheet notes the connection between the Chilson and Fall River formations in the Dewey area, which was from the other TVA test done in the early 1980s. This found the Chilson member of the Lakota formation to be "exceptionally permeable," as quoted by Dr. Perry Rahn (2014. "Permeability of the Inyan Kara Group in the Black Hills Area and its relevance to a proposed in-situ leach uranium mine" in the *Proceedings of the South Dakota Academy of Science*). Rahn, is Professor Emeritus at the South Dakota School of Mines and the acknowledged expert in matters related to hydrology in the southern Black Hills.

The EPA also notes that the Powertech pump test in the Dewey area was not only done differently, but that the TVA test was done at a pumping rate 16 times higher than the company test. This makes it look as though the company didn't want to do much that might show a connection between formations in the Dewey area. A more comparable update of the Dewey study is needed.

Research by Wicks, Dean, and Kulander ("Regional tectonics and fracture patterns in the Fall River Formation (Lower Cretaceous) around the Black Hills foreland uplift, western South Dakota and northeastern Wyoming." 2000) indicated that the Fall River formation is

"pervasively fractured" along the western edge of the Black Hills. The opinions of Dr. Robert Moran and Dr. Hannan LaGarry, which are included in the NRC proceedings and Exhibits, also indicate that fractures, faults, breccia pipes, and other geological characteristics of the project area, have not been adequately researched. The Class III Fact Sheet says that there are 64 drinking water, irrigation, and livestock wells in or within 1.2 miles of the mine boundary. To families on the ground, the situation is high-stakes, and this is not a game. It is critical that the geology of the area be fully understood – preferably before draft permits were issued – but certainly before any further steps are taken.

Research by Tank (1958. "Clay Mineralogy of Morrison Formation, Black Hills area, Wyoming and South Dakota," *Bulletin of the American Association of Petroleum Geologists"*), which may be the only focused research on the Morrison formation in the Dewey-Burdock area, indicates that the formation's thickness varies widely and that there is a "marked difference" between the formation's composition in Edgemont and seven miles north of Edgemont. The draft permits' heavy reliance on the Morrison formation as a confining layer should be re-considered, as the reality may not support the assumptions used in writing the draft permits. Making the Morrison Formation look thick in graphics and accepting the company's word for its permeability is not enough (Class III Draft Permit, p. 20; p. 23).

Given the information that is available, and given the importance of this particular issue, it is irresponsible to conclude that mining fluids could be contained based on limited scientific information, weak analysis, and company documents. It is up to the EPA to get or create accurate, substantial, third-party and peer-reviewed information and to analyze it thoroughly before granting draft permits and aquifer exemptions.

Otten and Hall of the U. S. Geological Survey are among those who have observed that "To date, no remediation of an ISR operation in the United States has successfully returned the aquifer to baseline conditions" ("In-situ recovery uranium mining in the United States: Overview of production and remediation issues" at http://www-pub.iaea.org/mtcd/meetings/PDFplus/2009/cn175/URAM2009/Session%204/08_56_Otton_USA.pdf). Bill Von Till of the NRC issued similar sentiments when he said in August 2010 "to date, restoration to background water quality for all constituents has proven to be not practically achievable at licensed NRC IS[L] sites" (credited in another source to EIS for Moore Ranch ISR project, WY., p. B-36).

This is important partly because, typically, when companies can't restore water to baseline conditions or to the standards set by the NRC, the NRC simply raises the amount of contamination allowed. At some point, the restoration water "fits" those raised standards, and the mine's water is declared "restored." This is unacceptable for the NRC, and it would be unacceptable for the EPA. The EPA must retain its baseline permit limits through a true restoration process. It is also important that standards are set at a true "baseline," which is the original condition of the project area's water prior to uranium drilling or mining.

Given these experiences in the real, on-the-ground world of ISL mining at modern mines in the United States, the presumptions of companies who propose this type of mining – and the brave statements by regulating agencies -- must be approached with abundant caution. If no U.S. ISL

mine has ever returned the water to baseline and if restoration to background has proven not achievable, what makes the EPA believe that this unprecedented task will be accomplished at Dewey-Burdock? This question must be addressed explicitly and analyzed thoroughly as a result of a full NEPA process, if the EPA decides to push forward rather than deny the permits and exemption.

Another document issue is located in the Class III Fact Sheet (p. 108). The EPA, following Section 2.2.2 of *The Unified Guide*, described performance standards that Powertech must follow in its statistical analysis of groundwater monitoring data. One of the standards is that, when using a tolerance interval or prediction interval, that interval must be "protective of human health and the environment." The EPA should know that the science as to what is "protective" when it comes to in situ leach uranium mining is in dispute. There is very little science on the subject, and some of what has been done was completed with improper or inadequate methodology or was paid for by the uranium industry. Before any further steps are taken in working with this process, additional research needs to be completed.

These are some of the general problems with the EPA documents on the proposed project. Others will become apparent as we move into process issues and omissions.

PROCESS ISSUES

The basic process issue in this case has been the failure of the EPA to adhere to the NEPA process. While the NRC has attempted to follow that process for the possession of nuclear materials, its actions have not adequately covered a variety of issues that are under the EPA's purview, particularly water issues. The EPA needs to complete its own NEPA process.

The applicant's project has also changed in important respects between the time the NRC began considering it and the time the EPA began considering it. Examples include:

- NRC documents consider the use of 4,000 gallons of water per minute for the mining and reclamation process. The EPA applications consider the use of 9,000 gpm, more than twice as much water.
- This project was originally described as involving 1,500 injection, recovery, and monitoring wells. By the time the EPA issued its draft permits, this had grown to 4,000 wells, nearly three times more wells.
- The projected bleed rates have varied over time, from .5% of the water used to 17% of the water used. In addition, the reverse osmosis process makes at least 30% of the water put through the RO process into waste, and this is not fully considered in the EPA documents. This seriously weakens all the assumptions and calculations on water use in the Class III draft permit and in the Draft Cumulative Effects Analysis.
- Documents prepared by Petrotek for Powertech/Azarga set subsurface water movement rates at 6 to 7 feet per year (without offering peer-reviewed sources). NRC documents set the transmissivity rate in the Fall River formation at 255 $ft.^2$ per day and in the Lakota formation at 150 $ft.^2$ per day. Dr. Perry Rahn's 2014 article, mentioned above, concluded that the average ground water velocity for the Lakota and Fall River formations in the

Dewey-Burdock area was 66.1 ft./year. But, he said, groundwater velocity in the Inyan Kara Aquifers at the Dewey-Burdock site might be as much as 5,480 feet per year – over a mile -- which "might indicate fast groundwater movement through very permeable units or through fractures," although he considered this number "very high." The draft permits omit this critical information that could have very real impacts on wells that are downgradient of the proposed mine site. This issue is critically important, and further independent studies should be done before any permit is issued.

- Powertech talked about the possibility of doing open pit mining at the NRC hearings, and this possibility is not raised in the EPA documents.

These changes in the parameters of the proposed project go to the heart of the information that informs the process in this case. The NRC and the EPA have had different projects submitted to them. The processes are not functional equivalents, and consideration of both projects would not be redundant – it would be sensible. The EPA should begin a thorough NEPA process to assess the project as it is currently proposed.

As part of any new or continued process, the EPA should consider more than one alternative action. Although there are places where more than one alternative is considered for a minor action, the major actions only offer one alternative – giving the company a Class III permit, a Class V permit, and an aquifer exemption.

The agency must also rely on its own work, not just the information provided by Powertech, for critical information such as the "maximum volume of liquid wastes injected into the deep injection wells during aquifer restoration" (Cumulative Effects, p. 76). This number is central to the discussion of the Class V wells and should be determined independently of the applicant. If this number is wrong, so are all the assumptions and mitigation measures offered in the draft permits and other project documents.

The EPA must also do thorough tribal consultation. The existing documents indicate that this process has barely begun, and yet draft permits have been issued. This makes a mockery of the consultation process, which should be completed well before draft permits are issued, so that the resulting information can be analyzed. The EPA must halt all further action until mutually-satisfactory, government-to-government consultation is completed. All cultural and historical properties must be identified by Lakota experts, who should be paid if they so desire, and given complete protection.

Another process issue is that EPA has gone through all sorts of contortions in its Fact Sheet on the Class V application in an attempt to define what is clearly a Class I well as a Class V well. The disposal would clearly take place above a USDW, the Madison formation, which is a large aquifer of broad use in the Black Hills. It is used by, among others, Edgemont and Rapid City. The EPA justifies its labeling of Class I wells as Class V wells by treating them as Class I wells for construction and monitoring purposes and by requiring the company to treat the injectate until it is "at or below radioactive waste standards" (Class V Draft Area Permit Fact Sheet, p. 8). The fear of many people in the area, as expressed in the public hearings, is that this is not sufficient, and our water would become irretrievably contaminated.

The other glaring process issue is that the EPA has rushed the process, creating draft permits and exemption without going through the proper rule-making process. This is the first time that the EPA has issued draft permits for Class III wells for an ISL uranium mine. It seemed to be in a hurry to do so. There has been extensive discussion of the process with the applicant and the uranium industry, resulting in a procedure, guidance, and draft documents. The draft permit and draft aquifer exemption documents often mimic others, including documents from the applicant, rather than creating a thoughtful analysis of the situation. (See Document Issues). However, there has been no public process on the de facto regulations created and used to craft the draft permits and draft exemption – no public notice, no public hearings, no analysis of public input. This violates the Administrative Procedure Act (APA), as well as the spirit of American government.

If allowed to stand, the entire process would fail to fully consider the project, provide adequate public input, leave western South Dakota with contaminated water, set a bad precedent for future proposed projects, and violate the APA. Process issues are not, however, the only shortcomings of the draft documents for the Dewey-Burdock project. There are also notable omissions.

OMISSIONS

Moving to omissions, there is no analysis – or even discussion – of whether it is possible to treat the quantity of water being used by this project to the required standards. If it is not – and if the process is not closely monitored – water will be permanently contaminated. There is no analysis or discussion of whether it is possible to treat the water quickly enough to keep up with the injection rate proposed by this project. And there is no analysis or discussion of the reverse osmosis facilities, their location(s) in the project area, or the impacts they would bring. This includes the fact that at least 30% of the water put through the RO process typically becomes waste water. The Class V Fact Sheet uses the number 30% (p. 50), but RO operations can create four gallons of waste water for every 1 gallon of treated water. This waste is commonly called "brine," although the waste water in this project would be radioactive and full of heavy metals and would require further treatment before being disposed of as 11e waste.

There is also the question of whether RO treatment of all this water can be done economically, given the price of uranium (currently only $19.25 per pound of yellowcake) and other project costs. A responsible agency would include a full discussion of the RO process and its impacts on the environment, waste treatment, bonding requirements, and the feasibility of the project. It would also provide numerous examples of places in which this operation has proceeded successfully at the flow rates and with the contaminants proposed by the company.

We contend that, if the RO process and the actual costs of full aquifer restoration were considered, this project would not be feasible economically, technically, or environmentally. The history of the uranium industry includes abandonment of almost 200 mines and prospects in the southern Black Hills and over 3,000 in the Upper Missouri River basin, plus thousands more in the Southwest. Given this history, the applicant should be forced to provide an economic analysis using current uranium prices that shows that this project is feasible before they are given permits or an exemption. They should also provide a copy of a contract with a buyer for the

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uranium that would be produced at the mine. Even at a modern ISL mine, the Smith Ranch-Highlands mine in Wyoming, aquifer restoration took place for 10 years, and the water quality was about the same as when mining ended, according to a Violation issued by the Wyoming Department of Environmental Quality. Part of the reason appeared to be cost. This situation should not be allowed to happen again. A detailed analysis that includes strict, regular, on-site regulatory enforcement must be an important part of the permitting and exemption process.

The EPA wrongly leaves the completion of key tests until after a permit would be issued. These omissions include:

- wellfield delineation drilling,
- establishment of current water baselines,
- identification of faults,
- tests of the integrity of the confining zones,
- identification of leakage in the Fuson confining zone,
- how to deal with a 10" leaking TVA well,
- information on unsaturated groundwater flow (this should be done in real life, not using a model that can be easily manipulated),
- collecting drill cores to determine the characteristics of down-gradient aquifers' geochemistry,
- measurement of confining zone thickness,
- all of the work leading up to and including the Authorization Data Package Reports (Class III Fact Sheet, pp. 70-71),
- radiological impacts analysis (independent of Powertech analysis),
- demonstration of the effectiveness of vertical and horizonal monitoring systems,
- identifying and creating a contract for disposal for 11e wastes and solid wastes,
- the establishment of down-gradient compliance boundary wells (these should not be moved in case of an excursion, but should be maintained at their original locations), and
- pump tests.

It appears that additional drilling in the alluvial deposits to determine whether there is upwelling groundwater should also be done before further regulatory action is taken. The "several" drillholes suggested in the Class III Fact Sheet seems inadequate, but the number of drill holes is not specified (p. 39).

None of this information will be subject to public review or comment, and key information would become available only after permits have been granted. This turns the regulatory process on its head. All testing should be done, subject to professional review, public review and comment, before any draft permit or exemption is issued.

As part of this process, note that current conditions do not provide an adequate or accurate "baseline." All baseline measurements (ground and surface water, air, soil, sediment, etc.) should be defined as the original condition of the project area, before drilling and mining.

One of the questions that is raised by the public that is not answered in the EPA documents is whether there is any uranium left to mine in the project area, which was mined extensively in the

1950s – 1970s. Before the project goes any further, the company should be required to prove that there is the amount of ore present that it claims by providing information under close supervision by a knowledgeable regulator selected by the EPA. As stated above, this should occur before any final permit is issued. If the company balks at this requirement, it should be inferred that it is not committed to the project as designed, that it knows there is less uranium present than it has claimed, and/or that it expects the expenses of this activity to make the project unprofitable.

Moving to the nature of the ISL uranium industry, the Fact Sheets and Cumulative Effects documents do not discuss the uranium industry's record in relation to problems with the ISL process at other sites. This minimizes the many problems that the ISL industry has experienced and, thus, the potential problems from the Dewey-Burdock project. This makes the portions of the draft permit dealing with excursions and leaks inadequate, as well as sections about mitigation and reclamation.

For example, the Crow Butte ISL mine near Crawford, NE., has had 85 license violations and reportable incidents. These range from excursions to leaks and spills to wells failing integrity tests. One leak at this site was not found or dealt with for over two years, which makes a mockery of the EPA's great faith in gauges, sensors, alarms, and other hardware to identify leaks and related system problems.

If EPA staff look over the information about ISL mines and regulation at http://www.wise-uranium.org/umopusa.html (WISE Uranium, "Issues at Operating Uranium Mines and Mills – USA," last updated April 19, 2017), it quickly becomes clear that excursions are "normal," as the former CEO of Powertech said in a public forum in Colorado, and that leaks of both pipelines and ponds are common. This indicates that both surface and ground water are at risk.

This source also documents the movement of mining fluid beyond the mine boundary at the Kingsville Dome ISL mine in Texas (Rice. 2013. "Excursions of Mining Solution at the Kingsville Dome In-Situ Leach Uranium Mine." *Austin Geological Society Bulletin)* and the Highland Uranium Project in Wyoming. A summary of this type of information can also be found at Daniel Simmons-Ritchie, "Troubled history" in the *Rapid City Journal*. September 23, 2013. A history of these issues in the northern Plains region can be found in Jarding. 2011. Uranium Activities' Impacts on Lakota Territory, *Indigenous Policy Journal.*

The EPA omits important issues from its Draft Cumulative Effects Analysis. Three that are glaring are the potential for mining wastes to be transported from other areas to Dewey-Burdock Class V wells, the presence of other uranium companies in the Black Hills, and the potential for uranium mining to expand onto Powertech/Azarga's contiguous claims on the Wyoming side of the state line (the Dewey Terrace project) and to the east on National Forest Service land. It's important to consider climate change, but it's also important to consider cumulative impacts that are on or adjacent to the proposed mine site.

According to communication you had with Fall River County Commissioner Joe Allen on March 24, 2017, the current draft Class V permit would allow other ISL uranium mines to send wastes for disposal at the Dewey-Burdock site. These wastes could arrive without documentation or

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information on the origin of the wastes. First of all, wastes should not be brought to the Dewey-Burdock site from other sites under any conditions. This adds transportation risks to the scenario and makes our area a dumping ground. It is our position that pertinent South Dakota Statutes forbid this, and consideration and analysis of these laws should be part of the draft permit review process.

Second, if outside wastes are allowed to be brought to Dewey-Burdock, then their chemical composition, location of origin, mine of origin, company of origin, and other pertinent information should be required to be reviewed by EPA before transportation to Dewey-Burdock begins. This information should also be public, so people know what is arriving in our area. Testing should be required upon arrival to insure that the waste meets Class V water quality standards. All of this should have been part of the draft permits and Cumulative Effects Analysis. This is another example of why the current analysis is grossly incomplete.

As for other companies, there are 11 uranium companies that have expressed an interest in the Black Hills, and one – Peninsula Minerals – recently started an ISL mine on the northwestern edge of the Hills in Wyoming. If the Dewey-Burdock project is not abandoned and if Powertech acquires all the needed permits (at least 10 at last count, including the Clean Air Act permit), then this would be the first ISL mine in South Dakota. If Powertech is allowed to move forward – especially on such flimsy permitting documents – a precedent would be set. We do not want to open South Dakota to a stampede of ISL uranium mining companies, for all the reasons discussed in this document. However, for the EPA's documents to be complete, the existing Black Hills mine and the potential for a much larger number of ISL uranium mines must be fully considered. This need is even greater for the Class V draft permit, which might allow wastes from other mines to be injected into ground water in the Dewey-Burdock area.

And as for the third item, Powertech has claims to the east of the current project boundary, and it has contiguous claims just across the border in Wyoming. This is very clearly a topic that should be considered under any discussion of cumulative effects. According to our research, the company has approximately 744 federal claims in Wyoming, with the majority being across the border from the Dewey-Burdock project area.

Another important omission is that the draft permits beg the question of who is going to do on-the-ground regulation of the proposed mine and deep disposal wells. In 2011, the State of South Dakota suspended its ability to regulate in situ leach uranium mining, so it has no authority to do that regulation at this time. The NRC has two inspectors based in Texas, who visit ISL mines once or twice a year. There is no indication that their regulation can be complete or happen often enough to catch problems.

This is tremendously important. The draft permits include some very critical actions, such as testing the Minnelusa Aquifer to determine its water quality before deciding whether the company can proceed with deep disposal wells. This is a high-stakes test that would impact the future of the southwestern Black Hills. First, the water quality test should have been done under EPA's direct supervision before a draft permit was issued. If the Minnelusa's water turned out to be appropriate for drinking water, the time and expense of creating the application and the Class

V draft permit would have been avoided – as would have the stress on people in the area who use and rely on the aquifer.

Second, if the permit is issued, the testing of the Minnelusa aquifer's water should be done under EPA's direct supervision, rather than allowing the company to do a test in the areas of its choice using equipment it supervises, sending the sample to the lab of its choice, and expecting the people who use the Minnelusa Aquifer in the southern Black Hills to believe the results.

Similarly, the following must be done under the direct supervision of a knowledgeable regulator:

- pre-mining water quality testing in the proposed mining area,
- testing designed to determine the likelihood of down-gradient excursions,
- information underlying decisions about what holes and wells should be plugged,
- mitigation of air quality impacts,
- pump tests,
- well construction,
- reports on and handling of vehicle accidents involving hazardous or radioactive contaminants,
- groundwater level measurements,
- injection fluid characteristics,
- post-restoration monitoring,
- determination of the corrective response that must be taken when an excursion happens (this is currently left to the regulated company),
- well plugging and abandonment,
- analysis of radiological issues,
- disposal of hazardous wastes,
- regulation of a variety of soil issues (Section 7.0 of Draft Cumulative Effects Analysis),
- programs to minimize the impacts to land use,
- fugitive dust control, and
- all measurements related to the presence, monitoring, and impacts of excursions, and of attempts to measure or cure excursions.

Note that Raymond H. Johnson, the lead author of the two articles that are the basis for the section related to down-gradient excursions in the Class III Fact Sheet (p. 62), appeared as a speaker at an event hosted by Powertech that was designed to promote the Dewey-Burdock project. He worked for the USGS at the time, which gave the audience the impression that the USGS was promoting the project, according to people who were there. This occurred in Hot Springs and in Custer in the Spring of 2013. I note that he was also in communication with EPA staff on this project. He then went to work for a firm that serves the uranium industry. While the "revolving door" phenomenon is not uncommon as people move from government to the private sector – and sometimes back again – the impartiality of Mr. Johnson's research has been questioned by some people in the Black Hills. For more information, see http://www.argusleader.com/story/news/2015/03/07/ex-federal-scientist-center-uranium-fight/24581135/

On the topic of drilling, the Class V Fact Sheet says that the draft permit allows the company to "drill deeper in order to evaluate deeper sandstone units within the Minnelusa" (p. 15) and to drill to the Precambrian basement when drilling Well 1 (p. 41).[i] These processes should not be allowed. The Madison aquifer is directly below the Minnelusa aquifer, and the upper portion of the Madison aquifer is porous, containing many caves, fractures, and solution openings (Class V Fact Sheet, p. 18; USGS. 2002. *Atlas of Water Resources in the Black Hills Area, South Dakota,* pp. 24-25). If the company was careless or drilled just a bit too far, here would be no separation between the aquifers and potentially no containment of materials pumped into the deep disposal wells, and a major drinking water aquifer could be contaminated.

We do not want a repeat of what happened at Wasta, SD, about 50 miles east of Rapid City. There, a drill bit and 150' section of equipment broke off when a driller was looking for oil. Groundwater can be exposed, creating a possible link between the Minnelusa and Inyan Kara formations, and plugging the resulting hole may be impossible. The State's bond was wildly inadequate (*Rapid City Journal*, January 23, 2017 and March 17, 2017). We are not willing to take a risk that something similar could happen as a result of the proposed Dewey-Burdock project.

The EPA also omits information in its discussion of seismic factors in the Class V Fact Sheet. It states that it is "not aware" of a seismic event causing an injection well to contaminate a USDW or of studies done to determine whether such contamination has occurred (p. 54). It then lists states that have been studied on this issue. The list omits states with injection wells that have been linked – at least in the media -- to seismic incidents, including Oklahoma, North Dakota, and Pennsylvania. The EPA may be "not aware" of some of the research, but it should be held to a higher standard and required to do the relevant research before omitting important information.

We also searched the Class V Fact Sheet looking for a thorough discussion of the seismic characteristics of the proposed mining and injection area. The presence of faults in the immediate area is mentioned (pp. 22-23), but their potential impacts are never analyzed. Similarly in the Class III Fact Sheet, the mechanisms by which Fall River formation water comes up through the Dewey fault is never analyzed (p. 45).

At the end of the Class V Fact Sheet and the Draft Cumulative Effects Analysis, the EPA indicates that the Endangered Species Act will be complied with, but gives no information on how it intends to do this. When will this be done? What species will be considered? Who will do the analysis (not the company)? This should already have been completed before draft permits were issued.

The EPA mentions the presence of a short-horned lizard, which is rare and protected in South Dakota, in the proposed project area. After stating that the species is "important in some tribal cultures," it offers the solution "Once construction activities begin at the site, the EPA expects that the [sic] any short-horned lizards that were in the area will seek less disturbed locations." This is pure conjecture, without any back-up information on the size or habits of the lizards. Are they territorial, or is it species-appropriate for them to move? Are they large enough to move fast enough to out-run a bulldozer or pick-up truck? Or are they, in reality, unprotected?

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This and similar information must be provided and backed by scientific research at the Dewey-Burdock site for this and other species. Animals should not simply be expected to move out of a site that's over 10,000 acres in a systematic and comprehensive process. And the EPA then expects them to just move back in after mining is complete – as if the same animals will be alive and remember their former homes after as many as 20 years. This is beyond unacceptable in the direction of ludicrous – and is certainly unacceptable.

Species other than animals are not considered in this discussion. Plants cannot simply move off the site. Some of them are important to tribal practices and customs, such as medicinal plants and timpsila (prairie turnips). Full scientific information should be gathered, and full analysis must be done, for non-animal species. Species that are important to the long-term residents of the area -- the Lakota, Cheyenne, and other native nations – require special protection. There is already information on protection of some species in project documents that could serve as a base for part of this analysis. However, a full and independent analysis is also needed.

This analysis would include close consideration of the opinion of the South Dakota Department of Game, Fish and Parks. This opinion was stated in an October 17, 2008, letter written by Stan Michals. Michals said that exploratory activity should not take place on some parts of the project area between February and August (inclusive) due to the presence of a bald eagle nest (a state-protected bird) and a redtail hawk nest. Mining, deep disposal wells, land application, and reclamation, which are more long-lasting and disruptive than exploration, should clearly also not take place during those seven months of the year in raptor nesting and other protected areas.

The sturgeon chub must be included in the discussion of wildlife concerns. It is present in the Cheyenne River and may be threatened or endangered in areas downstream from the proposed mine. Additional silt, heavy metals, and radioactive materials would be potential threats.

Also missing from the Class III Fact Sheet is a reasonably believable analysis of the concerns surrounding abandoned uranium mines in the project area. Any discussion of a factual basis for this analysis would be reassuring. Instead, the document just asserts the number of old mines and their conditions. There are two drilling logs indicating the geological location for the two larger open-pit mines (where it is obvious), but for the other abandoned mines, their condition is simply asserted. Early uranium mining in the southern Black Hills was a "mom and pop" enterprise, and detailed records were not kept. Small abandoned mines or prospects could have escaped being recorded. One partial solutions is to allow Dr. LaGarry a longer period of time in which to look over the drilling logs; his time was quite limited when he was given access to Powertech's records under an order from the NRC administrative judges.

There is one statement in the Class III Fact Sheet that created more questions than it answers. This is the statement that "Groundwater pumped to the surface during the pump tests will not be injected back into the subsurface" (p. 59). The obvious question, of course, is what will be done with this waste water? Will it be allowed to run into the ground and/or the creeks? What will its quality be? Is this waste water included in the calculations of the amount of water consumed during the project? At a minimum, the answers to these questions should be included in the discussion.

One omission is simply the failure to provide a very important definition in the section of the Class III Fact Sheet related to mechanical integrity. This is the statement that internal mechanical integrity and external mechanical integrity will both be confirmed if "There is no significant" leak or fluid movement. The document needs to provide a clear, measurable definition of "significant" in each case.

Another problem that has been common in the mine area and that is omitted from the EPA's discussion is wildfires. There have been at least three large wildfires in the area in the last five years. The Crow Butte ISL mine – only about 65 miles from Dewey-Burdock -- was evacuated in 2012 due to a wildfire. The impacts on water, air, and land could be enormous, if a building containing nuclear materials, wellfields, or storage ponds were impacted by a wildfire. The discussion of cumulative effects must include a thorough discussion of how this type of problem would be dealt with to protect the land, air, and water.

The next omission is that the treatment of radiological wastes from the drying cycle at the Central Processing Plant is not specified. The Cumulative Effects Analysis says that "off-gases generated during the drying cycle will be filtered through a baghouse" (p. 86), and it also mentions a "sock filter" (p. 87). However, the document does not give any information on where or how the wastes in the filters/baghouse would be disposed. It is assumed that these wastes will be radioactive, so should probably be 11e wastes. But readers (and the company) should not have to guess about such things. This situation should be the subject of comprehensive analysis, and the entire waste cycle should be specified clearly. There is also no discussion of potential accidents during processing (which have occurred) or the remediation or mitigation that might be needed as a result.

Much of the mitigation sections appears to be vague, incomplete, or based on stock language picked from other documents, such as the discussion of soil impacts mitigation on page 78-79 of the Cumulative Effects Analysis. The mitigation sections of EPA documents should offer a complete and detailed analysis of the required mitigation that is site specific at the Dewey-Burdock location.

To top it off, the EPA makes use of the Draft Cumulative Effects Analysis difficult, as the document has neither a Table of Contents nor an Index. In the future – and before further action is taken on the proposed mine, Class V wells, and aquifer exemption -- we hope that the EPA will rectify this and the other omissions.

ENVIRONMENTAL JUSTICE AND NATIONAL HISTORIC PRESERVATION ACT ISSUES

The issues involving the EPA's DRAFT Environmental Justice (EJ) Analysis and its National Historic Preservation Act (NHPA) report are linked and will be discussed briefly in this section.

The primary shortcoming of the DRAFT Environmental Justice Analysis is its limitation to a 20-mile radius. While it is true that Edgemont qualifies for impacted status, the 20-mile limitation effectively eliminates people who live downstream and on the Lakota reservations and who are

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impacted by the destruction of treaty, historical, and cultural sites. Note that both EJ and NHPA analysis should have been completed as part of a full tribal government-to-government consultation before the draft permits or aquifer exemption were released. There has, at this point, already been a violation of trust by the EPA that will be difficult or impossible to remedy.

As part of its regulatory process, the EPA should require that old uranium mines in the Dewey-Burdock area be analyzed for potential Superfund status. This is critical not only to the people and animals who live in the area, but also for the company's employees. A uranium company should not be able to tell the federal government to "take a hike" when it controls known contaminated land through leases. Old mines that pollute the water and sediment for miles downstream with radioactivity and heavy metals should not be ignored, especially when area populations have well-documented increases in cancer and lowered life expectancy – both of which can be linked to higher levels of radioactivity. And whether or not the old mines reach Superfund status, they should be cleaned up before any new uranium mining is allowed.

The EJ analysis includes Table 12, which purports to list "Additional State and Federal Permits Powertech is required to obtain" (p. 24). This Table is misleading in several ways that make it look like the company faces few hurdles. First, the table does not include the Clean Air Act permit that the EPA says is required. Second, it does not indicate the current status of either the state water appropriation permits or the state Groundwater Discharge Plan. These permits have not just been "recommended for approval"; they have been put on hold for several years. And third, the NRC's Source Material License is under appeal in federal court, and this is not mentioned.

The EPA also states conclusions about the mining process and its outcomes that are not supported by experience or science in the EJ analysis. This is discussed elsewhere in these comments.

The EJ analysis mentions that the public in the White Mesa mill area, where the company wants to take its 11e wastes, is 49% American Indian and Native Alaskan. After making this statement, the agency fails to do an EJ analysis of that site, simply saying that the Dewey-Burdock waste would be a small percentage of the waste at the site. This begs the question – What are the impacts of the mill on the nearly half of the population of the area that should be protected under EJ guidelines? There should at least be a reference to a complete analysis of this issue and, if one doesn't exist yet, it should be done as part of the Dewey-Burdock process and before further action is taken by the EPA.

Turning to the NHPA document, EPA should not rely on the NRC's section 106 review and consultation. That process is grossly incomplete. A section 106 review should, of course, have been completed before draft permits or a draft aquifer exemption were issued. At this point, the EPA should conduct its own review to insure that different viewpoints are brought to bear on the situation and to insure that thorough work is done by the federal agencies that are involved in the Dewey-Burdock project.

The NHPA document also indicates that tribal consultation is in its infancy. Tribal leaders from the two reservations that are most likely to experience impacts from the Dewey-Burdock project,

the Oglala Sioux Tribe and the Cheyenne River Sioux Tribe, have not yet started consultation. Yet draft permits and a draft aquifer exemption have already been issued. This is a travesty, and it's difficult to see how the EPA can rectify the situation.

OTHER ISSUES

In addition to problems with documents, omission and process, there are statements that we simply disagree with in the EPA's project documents. First, the Class III Fact Sheet states, "There is no limit in the Class III Area Permit as to how many injection and production wells Powertech may construct" (p. 14). There certainly should be a limit, and that limit should be conservative and set by the regulator, i.e., the EPA. This should be corrected.

Another issue is that, because the EPA documents downplay the amount of water that would be consumed by this project, the cumulative impacts do not adequately consider the proposed project's use of large amounts of water. As a result, the EPA also does not adequately consider the actual drawdown of water or the long-term impacts that this water use could have on the environment and economy of the southwestern Black Hills. The southern Black Hills is a semi-arid area that will need all its ground water in the future. This need will grow with climate change and with the ongoing depletion of the High Plains (Ogallala) aquifer a bit to the south.

A third major problem is the admission that injectate from the Class V wells will mingle with Madison aquifer water and come to the surface 20 miles away. While the EPA says this will happen "on the scale of 10,000 years" in its Cumulative Effects Analysis, remember that the calculations of water movement underground at the Dewey-Burdock site vary widely. The information offered by Powertech's contractor suggests that water movement is many times slower than independent estimates. Also, there are other wells into the Minnelusa and Madison aquifers to the south and east, over the 20-mile span between the project site and Cascade Springs. This admission should negate the entire Class V application and send Powertech back to Canada, China, and the Cayman Islands.

The sections on ground water use in the Draft Cumulative Effects Analysis rely overly-much on the opinion of one person, the former South Dakota State Engineer. Other people should be consulted.

Next, the various types of ponds should not be built where there are old drillholes. Best practices should be followed for all ponds to avoid leakage either through the bottom or through flooding. This includes at least the following: thick, high-quality double liners, clay liners, leak detection systems, procedures for frequent checking of leak detection systems, and the maintenance of substantial empty space in the ponds to accommodate flood events.

It is not wise to build ponds in the 500-year floodplain, especially given the increase in flooding incidents in the area, and this practice should be proscribed. Similarly, the design of sediment control structures should protect from events larger than a 5-year, 24-hour precipitation event – especially because the mine and the ponds will be present for up to twenty years. This is a set-up for four spills from the ponds! This also goes to the EPA's finding that surface water impacts

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"should be minimal." They will not be minimal if a flood washes out sediment structures or over-tops a pond containing hazardous materials even once.

The statement that "radon-222 itself has very little radiological impact on human health or the environment" (p. 85, Cumulative Effects Analysis) runs counter to what can probably be called common knowledge. It certainly runs counter to the EPA's website on the topic: https://www.epa.gov/radon/health-risk-radon The UIC Program needs to go back to the drawing board and do a comprehensive, science-based analysis of this issue.

Along the same line, in its discussion of the Central Processing Plant, the Cumulative Effects Analysis says both that "ventilations systems will exhaust outside the building" and that there will be "open doorways" on processing buildings (p. 86). One would hope that, for the safety of workers, the open doorways are nowhere near the exhausts. This should be specified by the EPA, and potential employees should be fully informed of the situation.

Section 3.3.1 of the Cumulative Effects Analysis (p. 19) is vague on key aspects of the impacts that will occur to ground water quality in the ore zone. The second-to-last sentence of this section say that the company "will monitor groundwater using standard industry practices." This is repeated in the section on post-restoration monitoring (p. 22). These standard practices, of course, have been associated with all sorts of problems, including the ongoing failure to return even one ISL mine's water to baseline. The EPA can do better.

Similarly, the section ends with a statement that the EPA "concludes that impacts to ore zone water…should be minimal." How is "minimal" defined? Is it what the EPA will allow? Is it minimal to the company? Or is it minimal to the impacted communities? This term should receive better explanation.

We also disagree with the statement in Section 3.3.2.1, in which the EPA says that an excursion can be left as is, if it is not corrected within 60 days; instead, the company can increase its financial assurance obligation in a manner that is suitable to the NRC (p. 21). This is not acceptable.

In addition, the EPA should not rely on the NRC's analysis, recommendations, or regulations. The processes by the two agencies should be independent, so that the proposed mine, disposal wells, and aquifer exemption receive the benefits of the expertise and different regulatory focuses of both agencies.

Next, deep disposal well integrity should be tested at least once per year, not as infrequently as every 5 years, as EPA suggests in the Class V Fact Sheet (p. 56). And injectate should be monitored and analyzed regularly, as the characteristics of wellfields will differ, and as the functioning of the RO system may also vary in effectiveness. Records should be maintained until at least five years after the end of the project, in case problems develop over time, not for as little as three years, as the Fact Sheet suggests (p. 59).

Similarly, EPA calculations indicate that "the pressure within the Minnelusa injection zone resulting from injection activity is **not** [bold in original] below the critical pressure needed to

move fluids out of the Minnelusa injection zone into the Madison Formation" (p. 28). The EPA correctly requires the company to recalculate in light of this fact, but must also hold firm if the resulting injection rates are even near the critical pressure, with the potential result that the permit would not be granted. Again, it is critical to protect the Madison aquifer, and the nature of the upper portion of that aquifer is particularly concerning due to the presence of rapid water movement.

In addition, all boreholes and old uranium mines on the full project area should be plugged and reclaimed before any further mining is allowed. Not only does this protect the water, soil, and air of the area, but it also protects workers who would be exposed to the old, open mines. Abandoned open pit uranium mines spread contamination through the water, sediment, and air, as shown by research done by Dr. James Stone of the South Dakota School of Mines and Technology and others.[ii] The old mines must be reclaimed, and the soil, air, and water must be tested to insure that it is safe before allowing any new uranium mining to go forward.

As mentioned above, modeling is a weak alternative to on-the-ground testing. The EPA should certainly not rely exclusively on models for any decision or requirement in the case of such a complex, controversial project – especially models developed by or for Powertech. There should be independent analysis of any information currently left to modeling. As the EPA notes in the Cumulative Effects Analysis, "there is inherent uncertainty in the results" (p. 108) when modeling is involved.

There should also be clarification of the length of time that the proposed Dewey-Burdock project would be active. This goes directly to the potential impacts of the project. The estimate in the State Mining Permit Application is seven to 20 years of uranium recovery, maybe more, with the Central Processing Plant likely to operate longer. The Class III draft permit is for the "operating life of the facility" (p. 7). At 14 wellfields, each operating for two years, this could be as long as 28 years, if the company ran them consecutively. There is also the potential for the company to expand the project to include its contiguous claims to either the east or west of the current project area. There's a difference between regulating a project that lasts seven years and regulating a project that lasts over 20 years. As stated repeatedly, the draft permits and Cumulative Effects Analysis should discuss the full range of potential impacts and scenarios.

There are two statements in the Class III Fact Sheet that apparently involve the EPA being prescient. Especially given the critical topics that these statements are about, they should, instead, be made factual. The first is that "the Lower Chilson is expected to provide adequate confinement…." (p. 66), and the second is that "The distance between the Chilson Sandstone potentiometric surface and the targeted ore zone…is expected be [sic] adequate to allow the drawdown required…." (pp. 68-69). These statements should be proved, not "expected" into existence.

There is also a question about the rate of pumping of water during the mining process. In Section 5.2.1 of the Draft Cumulative Effects Analysis, the text says that the "header piping [would be] designed to accommodate injection and production flow rates of 2,000 gpm…." (p. 56). On the next page, the document says that there would be 100 wells per header house. The schedule for the project indicates that as many as five wellfields will be active at one time. As

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each wellfield is likely to have more than 100 wells, these numbers add up to more than the 8,500 gpm that the company has asked to use in its more recent documents. This situation needs to be carefully researched and analyzed before any further action is taken on the proposed project.

A final issue is the demonstration of financial responsibility by the company, which the Class III Fact Sheet says should be done through a surety bond "or other adequate assurance" (p. 129). The only assurance that should be accepted is an adequate surety bond. The value of the company, if there is any, should not be used to demonstrate financial responsibility.

The definition of an "adequate" surety bond is critical. As noted above, in western South Dakota and elsewhere, it has been common historically for uranium and other mining companies to be unable to fund full restoration after mining, to go bankrupt, and to leave the burden for taxpayers – if restoration was even technically feasible.

In the case of in situ leach uranium mining, the Wyoming Department of Environmental Quality (DEQ) raised the bonds at the Highland and Smith Ranch ISL mines from $38,416,500 to $80,000,000, after it discovered that restoration attempts were not having any effect. In its March 10, 2008, Notice of Violation, the DEQ indicated that the real cost of restoration would be "on the order of $150 million." Regulators of other ISL projects should heed the Wyoming experience and insure that bonds for all activities that are associated with this technology are adequate, especially since full restoration has never happened. It is our position, based on the history of the uranium industry, that uranium mining cannot be done safely.

This is especially important because Powertech has already admitted that its restoration could be incomplete. In a 2014 "Restoration Action Plan" submitted to the NRC, the company said that "elevated concentrations above the restoration criteria may remain in the production zone following restoration," which the company called "hot spots." The company suggests that, after further study, the "hot spots" could be ignored and the "well field be declared restored." This is unacceptable, and the EPA should explicitly prohibit this practice.

We support the conclusion of EPA's statutory analysis that the Dewey-Burdock mine is subject to the Clean Air Act and subpart W. If the project goes forward, we request that public education sessions and public comment periods be held as part of the subpart W regulatory process.

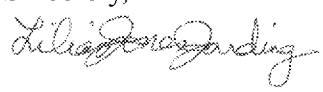
The citizens of the area that would be most impacted by this project spoke loudly and clearly at the hearings in April and May. As many as 700 people attended the hearings. 212 people spoke (omitting duplicates in Valentine and Rapid City, but counting duplicates in Hot Springs and Edgemont). Of those 212 people, only 15 (7%) supported the proposal to mine uranium in the Black Hills and in our water supplies. The vast majority – 93% -- opposed the project. In a democracy, the will of the people counts.

The EPA should act consistently with the voices of the vast majority of the people at the hearings, rather than approving a project that is poorly considered, ill-advised, full of gaps, and

dangerous to the health, the economy, the cultural resources, and the environment of the Black Hills.

Clean Water Alliance respectfully requests that the EPA halt the permitting processes for the proposed Dewey-Burdock project by denying the permits and the exemption.

Sincerely,



Lilias Jones Jarding, Ph.D.
President, Clean Water Alliance

[redacted]

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[i] Note that if these drilling activities are actually allowed to proceed, there should be a provision that makes the resulting information public.

[ii] Onyeukwu, Kyrian. 2007. *Assessment of Wind- and Soil-Related Hazards Associates with Abandoned Uranium Mines in the North Cave Hills, Harding County, South Dakota.* Master's Thesis, S.D. School of Mines and Technology; Stone, James, and Larry Stetler. 2008. Environmental Impacts from the North Cave Hills Abandoned Uranium Mines, South Dakota. *Uranium, Mining and Hydrogeology;* Tuombe, Emmanuel. 2008. *Surface water and sediment investigation concerning abandoned uranium mines in the South Cave Hills, North Cave Hills, and Flint Buttes region, Harding County, South Dakota.* Master's Thesis, S.D. School of Mines and Technology; Albertus-Benham, Hannah. 2009. *Surface water and sediment investigation concerning abandoned uranium mines within the Slim Buttes region, Harding County, South Dakota.* Master's Thesis, S.D. School of Mines and Technology; Stone, James, Larry Stetler, and Albrecht Schwalm. 2007. *Final Report: North Cave Hills Abandoned Uranium Mines Impact Investigation.* Prepared for U.S. Department of Agriculture: Forest Service-Region I, Missoula, MT. at https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/stelprd3834131.pdf; Sharma, Rohit, and James Stone. 2013. Chemical composition of bottom sediments within black hills region reservoirs of South Dakota and Wyoming. *Environmental Earth Sciences.*

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June 19, 2017

BY EMAIL
Valois Shea (shea.valois@epa.gov)
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80202-1129

Re: **POWERTECH - DEWEY BURDOCK - Comments to/on the following:**

* draft Class III and Class IV UIC Area Permits
* the identification of traditional cultural properties at the Dewey-Burdock Project Site Area of Potential Effects
* the potential adverse effects of the proposed project
* measures to avoid, minimize or mitigate potential adverse effects on historic and traditional cultural properties pursuant to Section 106 of the National Historic Preservation Act and 36 CFR § 800.2(d) and § 800.6(a)(4)
* two options for approval of the aquifer exemption that Powertech requested related to the Class III permit application
* the draft Environmental Justice (EJ) analysis for the Dewey-Burdock UIC permitting actions

Dear Sir or Madam:

The undersigned, David Frankel, an individual, residing at 101 Walnut Street, Buffalo Gap, SD 57722, and the organization Aligning for Responsible Mining, at the same address, hereby provide the following written comments to the above-referenced draft permits and documents related to Powertech Dewey Burdock.

1. GENERAL COMMENTS APPLICABLE TO ENTIRE PROPOSED PROJECT.

A. The Applicant, Powertech, which is now known as 'Azarga', is an insolvent and corrupt organization. The EPA has failed to consider Applicant's insolvency and inability to continue to pay its expenses in all of the project documents. This failure has led to many wrongful assumptions related to Applicant's obligations under the Class III and Class V

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permits that Applicant has the financial resources to perform the EPA requirements thereunder. These false assumptions need to be revisited in light of Applicant's current insolvent status.

After almost 15 years, and spending over $75 million of public shareholder monies, Powertech still doesn't know enough about the project area to be allowed to pursue this project. Notably, as of December 2014, Powertech's technical expert Hal Demuth stated to EPA officials that "there are "some unknowns" regarding what the data show to support UIC permitting."[1] These unknowns have not, to date, been resolved.

Powertech misleads public officials and the public by providing conflicting information to different parties. It has informed the industry[2] that there is 4 million pounds recoverable uranium which can be mined over 11 years and it has informed the EPA that between 8.5 and 9.5 million pounds of recoverable uranium deposits have been identified at Dewey-Burdock and that Powertech expects to conduct mining operations for 20 years.[3] **Which is it?**

And such assumptions concerning recoverable uranium assumes that it is all of the type that is recoverable - which has been cast into doubt by the recent research set forth in Bhattacharyya, A. *et al.* Biogenic non-crystalline $U^{(IV)}$ revealed as major component in uranium ore deposits. *Nat. Commun.* **8**, 15538 doi: 10.1038/ncomms15538 (2017).

Powertech/Azarga has as its largest (29.6%) shareholder, the criminal enterprise known as 'Platinum Partners'. Platinum Partners has been found to be an illegal 'Ponzi' scheme and its principals were arrested and are under criminal charges. Platinum Partners acquired the shares after Blumont Group Ltd defaulted on its loan and Platinum Partners foreclosed on the shares in Azarga/Powertech. It is a very bad sign when the largest shareholder of the Applicant would rather give up its stock than pay its debts.[4] Platinum Partners executives were charged in a $1 Billion fraud in December 2016.[5]

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[1] See Summary of Notes from Regional Administrator Meeting with Powertech on the Proposed Dewey Burdock Uranium Project in South Dakota (December 17, 2014).

[2] "The company has applied to develop Dewey-Burdock, and a preliminary economic assessment in 2014 suggested 3700 tU ISL production over 11 years, with $27 million capital investment." http://www.world-nuclear.org/information-library/country-profiles/countries-t-z/us-uranium-mining.aspx

[3] Summary of Notes from Regional Administrator Meeting with Powertech on the Proposed Dewey Burdock Uranium Project in South Dakota (December 17, 2014).

[4] See article from Azarga Uranium website: http://azargauranium.com/azargas-largest-shareholder-enters-into-debt-settlement-agreement/.

[5] See https://www.forbes.com/forbes/welcome/?toURL=https://www.forbes.com/sites/antoinegara/2016/12/19/prosecutors-allege-1-3-billion-hedge-fund-platinum-partners-operated-like-a-ponzi-scheme/&refURL=&referrer=

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As a result of the seizure of the assets of Platinum Partners by the US Attorney's Office in the Eastern District of New York, it is possible that another branch of the US federal government, namely the US Department of Justice, is the decisionmaker with regard to the 29.6% of Powertech/Azarga, which poses a conflict of interest for the EPA in this matter. All such conflict of interest should be resolved publicly before any permit is issued.

Powertech's financial statements tell a sad story.[6] The stock price of Powertech/Azarga (TSX: AZZ) is CDN $0.285 per share as of June 16, 2017. As of May 12, 2017, Powertech/ Azarga had 75,336,943 outstanding, giving it a market capitalization equal to CDN $21,471,028.76 which equals US $16,249,703.98.

As of March 31, 2017, Powertech/Azarga had financial assets equal to CDN $607,823, which equals US $ 460,012.60 and total financial liabilities equal to CDN $3,997,580 which equals US $3,025,448.50. **This means that Powertech/Azarga is financially insolvent having debts greater than its assets equal to US $2,565,435.90. It is $2.5mm underwater.**

Powertech/Azarga has current trade payables equal to CDN $1,327,373, which is US $1,004,582.43 and current cash equal to CDN $471,286, which is equal to US $356,678.67. **This means that Powertech/Azarga does not have sufficient cash resources to pay its current trade payables making it legally insolvent.**

During the first three months of 2017, through March 31, 2017, Powertech/Azarga spent CDN $243,354, which is equal to US $184,175.17. **This means that even if it doesn't pay any of its trade payables, Powertech will run out of funds in six months, or by December 31, 2017.**

Over the past 10 years, the stock price of Powertech/Azarga has crashed from CDN $23.33 to CDN $0.285. That is a 10,000% decrease in stock value, highly disappointing its investors and raising the specter of stock fraud. **Meanwhile, over that period of time, Powertech/Azarga has raised over US$75,000,000 and has wasted all of it.**

Powertech/Azarga predicts that its Dewey Burdock project has measured uranium resources of 4,122,000 pounds of U3O8 and indicated uranium resources of 3,528,000 pounds U3O8. But this estimate ignores recent research which indicates that the amount of recoverable uranium could be, and probably is, substantially less than that amount.[7]

The Bhattacharyya study (2017) indicates that there is far more organic uranium in roll front deposits, such as those at the Dewey Burdock site, than previously believed. This impacts

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[6] http://azargauranium.com/wp-content/uploads/financial/financial-statements/Azarga-MDA-Q1-2017-FILED-ON-SEDAR.pdf

[7] See: Bhattacharyya, A. *et al.* Biogenic non-crystalline $U^{(IV)}$ revealed as major component in uranium ore deposits. *Nat. Commun.* **8**, 15538 doi: 10.1038/ncomms15538 (2017).

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both estimates of the amount of recoverable uranium at the site and the ability to restore the impacted aquifers post-mining. These factors need to be properly understand and evaluated for this site prior to permitting.

Finally, Powertech has estimated that the cost of ISL uranium mining is as much as US $63.00/lb, although some companies have estimated a cash cost of between $20/lb-$30/lb. With the current price of less than $20.00/lb, and an estimated cash cost to mine equal to between $20.00/lb and $30.00/lb, it is simply not worth mining the uranium that is estimated to be at the Dewey Burdock site.

Further, Powertech has estimated 3700 tU ISL production over 11 years, with $27 million capital investment. Not only has Powertech over-estimated the amount of recoverable uranium, it has no realistic way to finance the required $27 million to actually mine it.

The EPA documents fail to consider the foregoing 'real-world' economic disincentives to continuing with this project.

While typically the concern of its management and not the licensing agency, Powertech/ Azarga's insolvency, bears directly on EPA's consideration of these permits. The mining phases most likely to be impacted by Powertech/Azarga's demonstrated inability to manage it's financial resources are invariably restoration and remediation in addition to borehole plugging/ abandonment, well drilling, monitoring, testing, modeling and analysis.

Powertech/Azarga's failure, after the extraction of whatever recoverable uranium may be at the Dewey Burdock site, if any, will leave EPA and the American People the task of restoring the toxic mess they are sure to leave behind.

B. FAILURE TO ADHERE TO NEPA PROCESS.

The basic issue in this process has been the failure to adhere to the NEPA process. While the NRC has attempted to follow that process for the possession of nuclear materials, its actions have not covered a variety of current issues that are under the EPA's purview, particularly water issues. The applicant's project has also changed in important respects between the time the NRC began considering it and the time the EPA began considering it.

Examples include:

- NRC documents consider the use of 4,000 gallons of water per minute for the mining and reclamation process. The EPA applications consider the use of 9,000 gpm, more than twice as much water. **Which is it?**

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- This project was originally described as involving 1,500 injection, recovery, and monitoring wells. By the time the EPA issued its draft permits, this had grown to 4,000 wells, nearly three times more wells. **Which is it?**

- The projected bleed rates have varied over time, from .5% of the water used to 17% of the water used. In addition, the reverse osmosis process makes at least 30% of the water put through the RO process into waste, and this is not considered in the EPA documents. **Which is it?** This seriously weakens all the assumptions and calculations on water use in the Class III draft permit documents.

- Documents prepared by Petrotek for Powertech/Azarga set subsurface water movement rates at 6 to 7 feet per year (without offering a source). NRC documents set the transmissivity rate in the Fall River formation at 255 $ft.^2$ per day and in the Lakota formation at 150 $ft.^2$ per day. **Which is it?**

- Dr. Perry Rahn, Professor Emeritus from the South Dakota School of Mines and the acknowledged expert in these matters, said in a 2014 speech (which has since been submitted for publication) that groundwater velocity in the Inyan Kara Aquifers at the Dewey-Burdock site might be as much as 5,480 feet per year – over a mile -- which "might indicate fast groundwater movement through very permeable units of through fractures." The draft permits omit this critical information that could have very real impacts on wells that are downgradient of the proposed mine site.

This further supports the conclusion, stated below, that the Town of Buffalo Gap, SD, should be included in the EJ Analysis, because it relies on wells that are downgradient of the proposed mine site.

These changes in the parameters of the proposed project go the heart of the information that informs the process in this case. The EPA should begin a thorough NEPA process to assess the project as it is currently proposed.

Along the same line, the draft permit is not accurate on the depth of existing drilling on the site. According to the company's Large Scale Mine permit application, drilling has been done on site down to the Sundance aquifer. This means that information on the Minnelusa should already be available. **Where is it?**

2. COMMENTS SPECIFICALLY RELATED TO DRAFT CLASS III UIC AREA PERMIT

Perhaps the most important omissions of information in the EPA's documents have to do with the confinement of mining fluids in the Class III wells areas. This goes to the heart of the safety of the project, and to the heart of the future of the region. There are real doubts whether the mining fluids can be contained at the proposed mine site.

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As Dr. Hannan LaGarry's research shows, and as reflected in the NRC's decision requiring the additional Borehole License Condition (discussed in subsection D below) to properly plug and abandon **ALL** boreholes, there are around 7,500 old boreholes on the site, not the lower numbers put forward by the EPA or the company. This number comes from Dr. LaGarry's direct observation of Powertech's records. Even the lower numbers indicate that it is unlikely that all old boreholes can potentially be found and properly plugged.

Since Powertech does not have the financial resources to pay its current operating expenses or trade payables, who will pay for the proper plugging and abandonment of the boreholes?

In addition, research by Boggs and Jenkins (1980) indicated leakage across the Fuson shale between the Lakota and Fall River formations. Research by Wicks, Dean, and Kulander (2000) indicated that the Fall River formation is "pervasively fractured" along the western edge of the Black Hills. And research by Tank (1958), which may the only focused research on the Morrison formation in that area, indicates that the formation's thickness varies widely and that there is a "marked difference" between the formation's composition in Edgemont and seven miles north of Edgemont.

The draft permits' heavy reliance on the Morrison formation as a confining layer should be re-considered, as the reality may not support the assumptions used in writing the draft permits. Given the information that is available, and given the importance of this particular issue, it is irresponsible to "conclude" that mining fluids could be contained based on limited scientific information and weak analysis.

Given the fact that Otten and Hall (USGS) are among those who have observed that "To date, no remediation of an ISR operation in the United States has successfully returned the aquifer to baseline conditions," the presumptions of companies who propose this type of mining – and the brave statements by regulating agencies -- must be approached with abundant caution.

If no U.S. ISL mine has ever returned the water to baseline, what makes the EPA believe that this unprecedented task will be accomplished at Dewey-Burdock? This question must be addressed explicitly and analyzed thoroughly as a result of a full NEPA process, if the EPA decides to push forward rather than deny the permits and exemption.

Specific comments to the proposed Class III Permit follow:

A. Proposed wellfields 6, 7 and 8, located in the eastern part of the Burdock area, are very close to or on the outcrop / subcrop of the Fall River Fm. In these areas the Fall River Fm. is either partially saturated or dry. **This greatly complicates the ability to hydraulically control mining fluids.**

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In addition, geochemical conditions are very different from downgradient portions of the Fall River aquifer, which complicates the ability to rely on natural attenuation to remove residual ISR contaminants. Powertech has indicated that they will not mine Fall River ore in these three wells fields – only ore in the middle and lower Chilson will be mined.

Powertech has ZERO real world experience operating an ISL mine and wants to practice on our communities in the Black Hills. The fact that they have chosen an area in which is difficult to control mining fluids makes it very likely that catastrophic environmental harm will occur. The fact that Powertech lacks the financial resources to pay even its current trade payables indicates that it will not be able to attract and retain competent technical staff required to handle this difficult job making it even more likely for catastrophic impacts to result from the proposed mining. **None of these factors have been considered by EPA to date.**

B. In areas within proposed wellfield 7, the potentiomentric surface for the Chilson aquifer is below the top of the overlying Fusion shale confining layer and in some areas it is below the top of the "confining" zone that separates the middle Chilson for the upper Chilson (in these areas the overlying Fall River Fm is dry). **Again, these hydraulic conditions make it more difficult to control mining fluids and increases the risk of excursions**. Powertech suggests that the low permeability shale zones that separate the ore bearing sands of the lower, middle and upper Chilson will "hydraulically confine" the three ore bearing sand units and prevent dewatering of the ore zones. **Powertech has no experience or financial resources to be able to offset such risks.**

The draft permit requires Powertech to further evaluate the hydraulic confinement during wellfield pump tests and if partially saturated conditions occur within an injection zone – Powertech is required to develop an appropriate 3D unsaturated flow model to assess the ability to maintain control of mining fluids. **Powertech lacks the financial resources to comply with these requirements to develop appropriate 3D modeling.**

This is problematic –the shale confining layers are thin and could easily have secondary pathways that allow vertical migration. Also- as shown on Plates 6.17 and 6.18 in the Class III permit application, the potentiometric surface of the Chilson in the vicinity of wellfields 6, 7 and 8 is very close to the potentiometric surface of the overlying Fall River Fm – which suggests a connection thru the Fusion Shale. **If partially saturated conditions develop and Powertech is unable to maintain an inward gradient in the injection zone –excursions are likely.**

C. The permit application indicates that if Class V UIC wells are used for disposal of waste fluids (which Class V disposal will be severely restricted because of its abandonment of the Deadwood formation according to Powertech's own admission) –it "will be possible" to use reverse osmosis to treat groundwater removed during groundwater restoration. This allows the water to be re-used for restoration. The permit application is very unclear about if

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and what types of treatment will be used to treat: (1) radioactive waste fluids prior to injection by Class V UIC wells; (2) groundwater removed as part of groundwater restoration efforts.

Powertech should be required to provide a clear explanation about these types of treatment prior to any issuance of the Permit, as well as information that demonstrates it has the financial and technical resources to ensure such treatment actually will happen.

D. **Unplugged Boreholes**. Reference is made to the NRC Partial Initial Decision related to Powertech's NRC License SUA-1600, namely LBP 15-16, by the Atomic Safety and Licensing Board (April 30, 2015)[8], pertaining to Powertech/Azarga's NRC license SUA-1600, at p.73:

> g. Boreholes
> While all parties acknowledge that thousands of historical boreholes penetrate the Dewey-Burdock site, Intervenors assert that a large number remain open and could act as pathways for waters moving from the ore zones to adjacent aquifers. It is apparent that some boreholes on the site have not been adequately plugged, because leakage between formations was attributed to open boreholes in the TVA studies of the late 1970's, was again cited as the cause of leakage by Powertech and NRC Staff witnesses who analyzed the more recent pumping tests, and is cited as the cause for surface water in the "alkali flats" area. In light of these occurrences, it seems unlikely that all historic boreholes have been properly abandoned or have "self sealed."
>
> Both Powertech and NRC Staff witnesses further assert that open boreholes do not pose a concern because Powertech will be required to locate any historical boreholes that were not properly abandoned and plug them with bentonite or cement grout. After considerable searching, we were able to locate the place in the record where "Powertech commits to properly plugging and abandoning or mitigating any . . . historical wells and exploration holes." [Fn 374 Ex. APP-016-B, Powertech Application for NRC Uranium Recovery License, Technical Report RAI Responses at 31 (June 2011).]
>
> And, despite the NRC Staff's claim that because "there are a number of improperly plugged or abandoned boreholes at the Dewey-Burdock site, as a condition of its license Powertech must address these boreholes before beginning operations," we did not find any such explicit condition in the license. Therefore, the Board will amend license SUA-1600 with a similar condition that was included in the Strata

[8] Available at: https://www.nrc.gov/docs/ML1512/ML15120A299.pdf

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license. License SUA-1600 shall be amended to include an additional license condition (the "**Borehole License Condition**") stating:

> **Prior to conducting tests for a wellfield data package, the licensee will attempt to locate and properly abandon all historic drill holes located within the perimeter well ring for the wellfield. The licensee will document, and provide to the NRC, such efforts to identify and properly abandon all drill holes in the wellfield data package.**

According to the EPA project documents, (pp 36-37 of the Class III Fact Sheet), there is a significant discrepancy between the nature and extent of proper plugging of abandoned boreholes with Bentonite and Cement Grout (per the NRC requirements) and the plugging of boreholes pursuant to South Dakota requirements, and differing technical requirements under the Class III permit.

The EPA documents lacks a comprehensive or cogent discussion of all the applicable standards and also lacks reference to the Borehole License Condition imposed by the ASLB in its Partial Initial Decision in LBP 15-16.

The EPA Class III Fact Sheet states (with bold emphasis added) that:

> "State regulations require these holes to be plugged after the holes have been logged. The newer Powertech drillholes were plugged and abandoned according to current protective South Dakota regulatory requirements. The historical drillholes have been plugged; however, records are not available to show how they were plugged.
>
> **It is possible that some historical drillholes may not have been plugged in a manner that would prevent communication between subsurface aquifers.**
>
> **Part II of the Class III Area Permit requires Powertech to take steps to identify leaky historic drillholes near the wellfield areas during the design and implementation of the wellfield pump tests (Section C), during the design of the wellfield monitoring system (Section D), during the implementation of formation testing (Section E), and during the implementation of the corrective action requirements in Part III. Powertech must complete these actions prior to receiving authorization to inject, to prevent these drillholes, or any other type of confining zone breach, from acting as pathways for contamination of USDWs."**

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The foregoing EPA description is misleading and incorrect because the NRC ASLB decision in LBP-15-16, issued prior to the issuance of the draft EPA permits and fact sheets, clearly states that "It is apparent that some boreholes on the site have not been adequately plugged". This conflicts with the EPA statement that 'It is possible that some historical drillholes may not have been plugged in a manner that would prevent communication between subsurface aquifers."

Further, this EPA misrepresentation gives the public the impression that there is some uncertainty here when all the parties - Powertech/Azarga, the NRC Staff and the local intervenors all agree that "leakage between formations was attributed to open boreholes in the TVA studies of the late 1970's, was again cited as the cause of leakage by Powertech and NRC Staff witnesses who analyzed the more recent pumping tests, and is cited as the cause for surface water in the "alkali flats" area." **As a result, the EPA documents concerning the leaky boreholes is inaccurate and misleading to the public.**

The so called 'Alkali Flats' area is referred to at Page 45 of the EPA Class III Fact Sheet:

> **4.6 Possible Breaches in Confining Zones**
> With one exception, groundwater discharging to the ground surface is limited to flowing artesian wells, which will be controlled and mitigated as described in the corrective action requirements discussed in Section 6.2.
>
> The only feature identified that was indicative of groundwater discharge from exploration drillholes at or near surface was the alkali area in the southwestern corner of the Burdock portion of the project area (N1/2 NE1/4 Section 15, T7S, R1E). The location of the alkali area is shown in Figure 15.
>
> Powertech has identified this area as a possible location where groundwater may be discharging to the surface from the Fall River and possibly the Chilson to the surface through an abandoned exploration drillhole.
>
> The "alkali area" lies within the proposed location of Burdock Wellfield 2. The hydraulic communication between the Fall River and Chilson Sandstone aquifers and the ground surface will be investigated more closely during the wellfield delineation drilling and wellfield pump tests (discussed in Section 5.0 and required in Part II of the Class III Area Permit) for Burdock Wellfields 1 and 2.
>
> The observation wells for the wellfield 1 and 2 pump tests will be more numerous and more closely-spaced than those for the Powertech Burdock Area pump test conducted in 2008 and the TVA Burdock pump tests conducted in 1979. Comparing the responses in each wellfield pump test observation well will help identify more closely the locations of the leaks through the confining zones at the

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site and help narrow down the locations of the leaking drillholes or other breaches in confinement.

Part II of the Class III Area Permit includes the best available technology requirements Powertech must implement to locate leaking drillholes or water wells and Part III includes corrective action requirements to prevent lixiviant migration along communication pathways between the Fall River and Chilson through the Fuson Shale or through the Graneros confining zone to the ground surface.

The foregoing EPA statements are also misleading because they conflict with the NRC License Condition which says that ALL historical boreholes must be properly plugged and abandoned whereas the EPA Class III Fact Sheet states that Powertech/Azarga is only required to locate and properly plug the 'LEAKY' boreholes. This is incorrect and misleading to the public.

Further since Powertech lacks financial resources to pay its current expenses or trade payables, how will it pay for the 'best available technology' referred to in Part II of the Class III permit?

This misrepresentation is repeated by the EPA at Page 73 of the Class III Fact sheet, as follows (misleading information highlighted in bold and underlined text):

> The Class III Area Permit requires Powertech to properly plug and abandon or mitigate any of the following **should they have the potential to impact the control and containment of wellfield solutions within the project area:**
>
> 1) Historical wells and exploration drillholes (Part III, Corrective Action),
> 2) Holes drilled by Powertech for the purposes of exploration and wellfield delineation that are not used for installing an injection, production or monitoring well (Part II, Section B.3),
> 3) Any injection, production and monitoring wells failing mechanical integrity demonstration or testing (Part VI, Section B.5 and Part VII, Section F and Part II, Section D.4.f), and
> 4) Any stock wells or other types of wells located near the wellfields that could impact wellfield fluids control during ISR operations or groundwater restoration when evaluated during the wellfield pump tests.

It is misleading for the EPA to inform the public that Powertech must properly plug and abandon only historical drillholes that 'have the potential to impact the control and containment of wellfield solutions within the project area" when the NRC License Condition requires that "the licensee will attempt to locate and properly abandon all historic drill holes located within the perimeter well ring for the wellfield."

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3. COMMENTS SPECIFICALLY RELATED TO DRAFT CLASS V UIC AREA PERMIT

A. Powertech is required to demonstrate that the injectate will be contained within the injection interval by confining zones above and below. The upper confining zone is identified as the Opeche shale which overlies the Minnelusa Fm. The lower confining zone is identified as the lower part of the Minnelusa Fm.

Calculations performed by EPA staff indicate that the injection induced pressure within the injection zone will exceed the critical pressure needed to move waste fluids into the underlying Madison USDW for a distance of 3.5 miles from DW1 and 2.5 miles from DW-3. This means that there is a significant potential for waste fluid injectate to migrate downward through natural geologic pathways (faults, fractures, high permeability zones) or anthropogenic features (abandoned oil/gas wells). There is significant disagreement on this between EPA and Powertech based on very different calculations of the critical pressure.

There is also significant uncertainty regarding the porosity of the injection zone, the elevation of the potentiometric surface of the Madison Fm. and the effect of pumping by two proposed Madison water supply wells. These data are necessary for calculating the distance over which the injection-induced pressure exceeds the critical pressure needed to move waste fluids downward to the Madison. To be conservative the Area of Review should extend at least 3.5 miles from each proposed class V well.

Currently the lack of hydrologic data for the Minnelusa Fm. injection zone and, especially the Madison Fm. results in uncertainty that is too great and does not support a decision that there is an adequate lower confining zone. It may also mean that more than 4 injection wells will be required to limit injection rates and pressures.

B. Lack of Site Specific Data. Calculations were made to estimate the radius of fluid displacement, which is an indication of how far from the injection well the waste fluid will move. The calculations were based on a simple model which consider only porosity and thickness of the injection zone. **Powertech used a porosity value of 21% and EPA used a porosity value of 10%. Neither are based on site specific data**. These analyses did not consider transport of the waste fluid plume by ground water flow. The waste fluid plume will not be static –but will migrate in a downgradient direction once it is emplaced in the injection zone.

C. EPA is relying on data that will be obtained from drilling and testing the two proposed Madison water supply wells (***which have not been approved by SD DENR***) and drilling and testing the Class V wells.

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EPA is also relying on data on formations underlying the Minnelusa from well DW-1 ***if*** it is drilled to the base of the Deadwood Fm. as Powertech indicated in the Class V permit application ***(unclear if Powertech still plans to do this).***

This results in a difficult problem if Powertech cannot obtain any data hydrologic/ geologic on the Madison USDW or if data obtained indicate that the proposed injection zone does not meet the criteria specified in UIC regs. It would be very difficult for EPA to deny a permit once the wells are drilled and completed. This means that more data is needed before a permit is issued.

D. As noted above Powertech is required to treat the waste fluid to comply with standards in CFR Part 20, Appendix B, Table II, Column 2 and 40 CFR 261.24, Table 1. This treatment is required prior to disposal via underground injection. There is little information in the permit application.

Apparently Powertech plans to treat the waste fluid by "radium removal in radium removal ponds". There is no information regarding the constituents which are expected to exceed the standard and will need to be removed nor any information on how the "radium removal ponds" work – is radium the only constituent that needs to be treated? Is the radium suspended in the waste fluid? How will compliance be monitored?

What about the other toxic constituents?

E. The permit application also indicates that Powertech has applied for a land application discharge permit from DENR. There is no information on the soil types that will receive the effluent, the volumes planned for land application, the chemistry of the water, etc.

F. The permit application states that there will no monitoring using dedicated monitoring wells to monitor injectate migration based on "site-specific conditions".

G. **Class V fact sheet. What about the arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver?**

The EPA Document states:

7.8.1 Hazardous Waste Permit Limits

The Area Permit requires the injectate to be below the concentrations for the hazardous waste toxicity characteristic limits found at 40 CFR § 261.24 Table 1. The Table 1 constituents that could be expected in the injectate are the following metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium and silver. The Area Permit requires that the injectate samples be analyzed quarterly for these metals. Arsenic and selenium are present in the uranium ore deposit mineralogy. The hazardous waste permit limits the injectate must meet are listed in Table 19.

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Permit SD52173-00000 51 Dewey-Burdock Class V Draft Area Permit Fact Sheet
USNRC, NUREG-1910, Vol. 1, GEIS, Section 2.7.2 describes typical liquid waste from ISR facilities:

Liquid wastes from ISL facilities are generated during all phases of uranium recovery; construction, operations, aquifer restoration, and decommissioning. Liquid wastes may contain elevated concentrations of radioactive and chemical constituents. Table 2.7-3 shows estimated flow rates and constituents in liquid waste steams for the Highland ISL facility. Liquid waste streams are predominantly production bleed (1 to 3 percent of the process flow rate) and aquifer restoration water. Additional liquid waste streams are generated from well development, flushing of depleted eluant (the fluid that removes uranium minerals from the resin) to limit impurities, resin transfer wash, filter washing, uranium precipitation process wastes (brine), and plant wash down water.

Table 19. Hazardous Waste Concentration Limits for Class V Deep Disposal Wells

Constituent	Total Metals Concentration Limit (mg/L)
Arsenic	5.0
Barium	100.0
Cadmium	1.0
Chromium	5.0
Lead	5.0
Mercury	0.2
Selenium	1.0
Silver	5.0

7.8.2 Radioactive Waste Permit Limits
The Area Permit requires that the injectate be treated to decrease radionuclide activities to levels below the established limits for discharge of radionuclides to the environment, which are listed in 10 CFR Part 20, Appendix B, Table 2, Column 2. These limits are presented in Table 20. Waste streams containing radionuclides below these regulatory limits are not classified as radioactive waste per UIC regulations.

The radioactive constituent limits included in Table 20 are the limits set in Table 16 of the Area Permit that injectate will have to meet. Liquid wastes will be treated to achieve uranium effluent limits in the ion-exchange columns. It is not anticipated that thorium-230 and lead-210 will be present at concentrations above the limits; however, if concentrations are above the limits, the effluent will be treated as necessary to satisfy the Table 16 limits. Radium-226 will be treated in radium settling ponds by adding barium, which will cause the radium to precipitate out of solution.

Table 20. Radioactive Effluent Limits for Class V Deep Disposal Wells.
Radionuclide Effluent Limits

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10 CFR 20 App B, Table 2, Column 2 μCi/ml		Permit Limit pCi/l
Lead-210	1.00x10-8	10
Polonium-210	4.00x10-8	40
Radium-226	6.00x10-8	60
Uranium (Natural)	3.00x10-7	300
Thorium-230	1.00x10-7	100

EPA and Powertech documents continues to rely on Powertech's intent to dispose of its liquid chemical waste via a Class V underground injection control permit. However, the disposal of waste, and particularly radioactive waste, below the lower-most aquifer that serves as an Underground Source of Drinking Water (USDW), as proposed here, is not a Class V activity. Rather, such disposal is a Class I underground disposal well. Compare, 40 C.F.R. § 144.80(a) (Class I – deep injection) with 40 C.F.R. § 144.80(e)(Class V – shallow injection).

Further demonstrating this fact is the SD DENR which classifies any well that proposes to be used for injection of either hazardous or non-hazardous liquid waste, or municipal waste, as a Class I UIC well.[9] Importantly, the State of South Dakota specifically and unambiguously precludes operation or construction of any Class I UIC wells within its borders. Indeed, the applicable regulatory provision is even broader, stating in its entirety: "Class I and IV disposal wells prohibited. No injection through a well **which can be defined as** Class I or IV is allowed." S.D. Admin. R. § 74:55:02:02 (emphasis added). This is a significant issue, which the EPA analysis must address.

On December 8, 2016, Powertech expressed concern that removing the Deadwood Formation as an option for injection of treated ISR waste fluids would greatly diminish the capacity for waste fluid disposal. A few days later, Powertech withdrew its request to inject into the Deadwood Formation.

Therefore, based on Powertech's own statements, its proposed capacity for waste fluid disposal is greatly diminished which increases the likelihood of land application. However, the Application does not address the cumulative impacts of land application of toxic waste fluid including selenium which is highly toxic to people and wildlife. These impacts require a full and complete analysis.

4. COMMENTS ON THE IDENTIFICATION OF TRADITIONAL CULTURAL PROPERTIES AT THE DEWEY-BURDOCK PROJECT SITE AREA OF POTENTIAL EFFECTS

EPA states that:

[9] See, Chart located on the State of South Dakota's website: http://denr.sd.gov/des/gw/UIC/UIC_Chart.aspx.

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> Based on the information we have reviewed to date, and subject to resolving concerns identified in the NRC administrative review process, the EPA believes that the level of work completed under the auspices of the NRC on the Class III Cultural Resources Survey appears thorough and comprehensive for the APE defined by the NRC, provided the PA stipulations are followed concerning the unexpected discovery of additional historical properties.

EPA states that its consideration of the extent of cultural resource issues at the Dewey-Burdock site is based on "Section 3.9.3 of the NRC Supplemental Environmental Impact Statement prepared for the Dewey-Burdock Project (SEIS) and summarized in Appendix B of the NRC PA."

EPA's characterization of the current status of the NRC Staff's National Environmental Policy Act and National Historic Preservation Act compliance is not consistent with the Nuclear Regulatory Commission's recent ruling.[10]

In fact, the result of the Nuclear Regulatory Commission process was an express holding that the Class III archaeological study conducted at the site **failed** to satisfy any of the requirements associated with either the National Environmental Policy Act (NEPA) or the National Historic Preservation Act (NHPA) with respect to cultural resources.

Specifically, the NRC affirmed the Atomic Safety Licensing Board's express ruling that:

> **The Board finds that the NRC Staff has not carried its burden of demonstrating that its FSEIS complies with NEPA and with 10 C.F.R. Part 40. The environmental documents do not satisfy the requirements of the NEPA, as they do not adequately address Sioux tribal cultural, historic and religious resources.**

In the Matter of Powertech USA, Inc., LBP-15-16, 81 NRC 618, 708 (2015).

Thus, EPA's reliance on the NRC SEIS is entirely misplaced. There has never been a cultural resources survey conducted on the Dewey-Burdock site that took into account any Sioux cultural resources. **EPA simply cannot rely on the NRC SEIS analysis in any way for such a survey**.

Further, the NRC affirmed the Board's ruling that "Meaningful consultation as required by [the NHPA] has not occurred." Id. This ruling was made despite the existence of the Programmatic Agreement, ("PA") which EPA suggests it might sign on to in an effort to fulfill its NHPA obligations.

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[10] See CLI-16-20 (https://www.nrc.gov/docs/ML1635/ML16358A434.pdf).

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However, EPA appears to be unaware that the PA it references was roundly condemned by every single Sioux tribal government that reviewed it. **Not a single Tribe has agreed to be a signatory on the PA meaning the PA has been literally shoved down the Tribes' collective throats.** The critique of the terms of the PA from the Tribes was severe.[11] In these letters, the Oglala Sioux Tribe identifies specific terms in the PA that fail to provide any detail or specificity as to future analyses of the project area, methodologies proposed for these analyses, or what mitigation measures may be adopted in the future to address the impacts.[12]

The Standing Rock Sioux Tribe raised similar concerns, but goes into highly specific detail, offering not only a letter describing their frustration in dealing with the NRC Staff on this issue, but also providing multiple substantive line by line comments, questions, and critiques to the PA.[13] Unfortunately, NRC Staff did not provide any specific substantive response to either set of tribal concerns, nor did NRC Staff incorporate the changes proposed by either tribe. Instead, NRC Staff and Powertech pushed to finalize the PA without addressing the tribes' concerns.

These failure to comply with NEPA and NHPA are being highly scrutinized by federal courts. See *Standing Rock Sioux Tribe v. U.S. Army Corps of Eng'rs*, (D.C. Cir., slip. op. June 14, 2017).[14] In that case, the Court ruled that the agency failed to include a large enough area in its analysis (similar to the comments herein that Buffalo Gap, SD, should be included in the EJ Analysis) and also that an EIS should have been done. These same failures are present in this EPA UIC permit decision.

This type of lack of meaningful consultation, in part, is what led to a NRC ruling finding a failure to comply with the NHPA consultation duties. EPA should not compound and exacerbate this failure by endorsing such a deeply flawed PA. Instead, EPA should seek to conduct a consultation effort that complies with the NHPA and meaningfully involves the Tribes in a discussion of the potentially affected cultural resources, the potential impacts to those resources, and possibly mitigation measures that can be implemented to protect those resources.

In any case, the existing PA is currently the subject of further discussion and negotiation as part of the NRC's finding that the NRC Staff has failed to comply with either NEPA or the NHPA with respect to identifying and evaluating impacts to Sioux cultural resources at the site. *See* May 31, 2017 letter from Oglala Sioux Tribe Historic Preservation Office; May 19, 2016 and

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[11] See February 5, 2014 Letter from Oglala Sioux Tribe President Bryan Brewer to NRC Staff; February 20, 2014 email from Standing Rock Sioux Tribe Historic Preservation Officer to NRC Staff (marked Exhibit NRC-016).

[12] See February 5, 2014 Letter from Oglala Sioux Tribe President Bryan Brewer to NRC Staff at 2.

[13] February 20, 2014 email from Standing Rock Sioux Tribe Historic Preservation Officer to NRC Staff at 7-20.

[14] Available at: http://earthjustice.org/sites/default/files/files/DAPL-order.pdf.

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January 31, 2017 Oglala Sioux Tribe/NRC Staff meeting summaries (all specifically identifying changes to the PA as necessary topics of ongoing NHPA consultation).

As such, EPA should increase its involvement and either work to develop an agreement with the affected Tribes, including the Oglala Sioux Tribe, that properly takes into consideration the Tribes' perspectives. In the alternative, EPA should engage in the ongoing discussions between NRC and the Tribes, including the Oglala Sioux Tribe, and work toward a PA that satisfies all parties. The Oglala Sioux Tribe has a formal ordinance in effect regarding consultation, which requires the involvement of the Oglala Sioux Tribal Council.[15]

Notably, the record developed during the NRC hearing process demonstrates that the proposed Dewey-Burdock site contains significant cultural resources that could be impacted by the project. This fact is made clear even though no meaningful cultural resources survey has been conducted on the property.

Even the Augustana Class III archaeological survey upon which EPA attempts to rely recognizes that "the sheer volume of sites documented in the area is noteworthy."[16] Despite this acknowledgement, no competent Sioux cultural resources survey has ever been conducted on the site.

The NRC hearing record demonstrates that EPA simply cannot rely on the Powertech-produced Class III archaeological survey for purposes of identifying impacts to cultural resource so as to satisfy its environmental impact review or NHPA obligations. Powertech candidly admits "that identifying religious or culturally significant properties in a project area is entirely reliant of the Tribes themselves and the special expertise of the Tribal cultural practitioners…."

Simply put, entities such as NRC or Powertech are not equipped with the Tribe-specific knowledge and traditions to adequately instruct a specific Tribe using 'proper scientific expertise' on this subject."[17] The record and testimony contains no evidence that NRC Staff successfully equipped itself or acquired the necessary resources to meet NRC's NEPA duties involving religious and cultural resources.

The primary reliance by EPA on the Augustana study is not supportable – particularly given the testimony at the NRC hearing. Dr. Hannus, who lead the Augustana study at the behest of the applicant admitted that his team is not "in any way qualified to be conducting TCP surveys" and further conceded that given the heightened cultural issues of the Sioux Tribes that "there will be sites that will need to be addressed archaeologically"; Dr. Hannus: "And again, that really should clearly, I think, show us that for us to then be able to

[15] See Ordinance No. 11-10 of the Oglala Sioux Tribal Council of the Oglala Sioux Tribe.

[16] Augustana Report at page 7.8.

[17] See Powertech Opening Statement in NRC licensing proceeding, at 34.

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make some kind of in roads ourselves, being not of Native background, to identification of sites that are traditional cultural properties that have a tie to spirituality and so on, it is not in our purview to do that.").[18]

Applicant witness Dr. Luhman reiterated this point, confirming that "a traditional Level 3 survey may, in fact, encounter some resources that would be associated with Native American groups or which they would identify. But, they wouldn't necessarily identify all of the resources primarily because some of the knowledge is not available to those conducting the Level 3 survey. That would be provided by the Native American groups themselves."[19]

OST witness Mr. Mesteth: "[w]e're the ones that are the experts, not the archaeologists. They make assumptions and hypotheses about our cultural ways and it's not accurate. Some of the information is not accurate. And that's why we object in certain situations."[20]

Dr. Hannus testified that his office has never worked on any projects that considered the cultural resources at a site.[21] Despite this fact, NRC Staff witness Dr. Luhman testified that NRC Staff relied on Augustana to conduct all of the initial and follow up field survey work at the site, with the exception of the three non-Sioux tribes that submitted reports.[22]

Upon the Sioux Tribes' request as early as 2011 that cultural resource surveys be conducted at the site, NRC Staff prompted the applicant to bring in Dr. Sabastian and her firm to coordinate this review.[23] However, Dr. Sabastian also testified that she also has never been involved in any kind of "actual physical on-the-ground TCP survey-kind of thing that we're talking about."[24]

Lastly, Mr. Fosha testified that he worked with the applicant and Augustana "from the very start of the project, so the bulk of this material is a result of myself reviewing what Augustana College had been doing in the field."[25] Mr. Fosha testified that he met with the applicant and between them discussed methods for identification of sites and the methods and

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[18] August 19, 2014 Transcript at p. 858, lines 4-8; 12-20. See also August 19, 2014 Transcript at p. 859, lines 18-24.

[19] August 19, 2014 Transcript at p. 762, line 24 to p.763, line 6. See also, August 19, 2014 Transcript at p. 764, lines 14-18.

[20] August 19, 2014 Transcript at p. 765, line 25 to p. 766, line 9 (Mr. Mesteth)

[21] August 19, 2014 Transcript at p. 843, lines 4-7.

[22] August 19, 2014 Transcript at p. 818, lines 19-22.

[23] August 19, 2014 Transcript at p. 784, lines 20-25 (Dr. Sabastian).

[24] August 19, 2014 Transcript at p. 846, lines 9-21.

[25] August 19, 2014 Transcript at p. 865, lines 3-6.

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steps to take "throughout the process," but only related to the State of South Dakota permit, and having "nothing to do with the NRC permit or anything like that" – even remarking that "up until the point where Augustana was nearly finished I was the only review agency on this project."[26]

Despite Mr. Fosha being the only person giving any direction to Dr. Hannus' Augustana team, Mr. Fosha testified that his experience and focus was solely "the field of archaeology" and not culturally as to the concerns of the Tribes.[27]

The only NRC Staff or applicant witness that testified to having any experience in conducting cultural resource field surveys was NRC Staff witness Dr. Luhman. However, as stated, Dr. Luhman admitted to relying exclusively on Augustana for both the initial field work and the follow up field studies, even though Dr. Hannus' testimony had confirmed that Augustana had no culturally relevant experience.[28]

Dr. Luhman did testify that "in those projects in which I have been involved [a cultural survey] it is typically that [the Tribes] are working alongside with the archaeological survey team as they are going about doing the survey. It could be in the preliminary stages of doing the generalized recognizance (sic) of the project area. Oftentimes the federal agency and other parties will be along that process so that there can be discussions while out in the field, and these are for sometimes very large projects. But in my experience it typically is at the same time when there is an ongoing consultative and survey process."[29]

NRC Staff witness Ms. Yilma admitted that no written cultural resources analysis prepared during any part of the NEPA analysis included <u>any</u> comments or reports from <u>any</u> Sioux Tribes.[30] This is despite testimony from NRC Staff witness Ms. Yilma as to the NRC Staff's recognition of the importance of the area to the Sioux from a cultural perspective from the earliest stages of the application review stage.[31] NRC Staff witness Ms. Yilma also testified as to the importance and focus at least as early as 2011 by both the Sioux Tribes and within NRC Staff on the need for culturally-based field surveys in order to fulfill the NEPA and NHPA requirements.[32]

NRC Staff witness Ms. Yilma testified that after meeting in 2011 with the Oglala Sioux, Standing Rock Sioux, Flandreau Santee Sioux, Sisseton Wahpeton (Sioux), Cheyenne River

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[26] August 19, 2014 Transcript at p. 865, line 23 to p. 866, line 5.

[27] August 19, 2014 Transcript at p. 867, lines 14-20.

[28] August 19, 2014 Transcript at p. 818, lines19-22 (Dr. Luhman).

[29] August 19, 2014 Transcript at p. 836, line 18 to p. 837, line 2.

[30] August 19, 2014 Transcript at p. 821, lines 3-7; *id.* at p. 875, lines 6-11.

[31] August 19, 2014 Transcript at p. 774, line 21 to p. 775, line 1. <u>See also</u>, August 19, 2014 Transcript at p. 771, lines 1-7 (Ms. Yilma).

[32] August 19, 2014 Transcript at p. 776, line 22 to p. 777, line 3; p. 790, lines 1-17.

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Sioux, and Rosebud Sioux[33], NRC Staff specifically deliberated about conducting an ethnographic study of the site to ensure incorporation of Sioux cultural and historic perspectives, but "the ultimate decision was instead of an ethnographic study a field survey was necessary, so we focused our attention on the field survey approach."[34]

Despite admitting that it was "necessary" to the analysis, no cultural resources review or field study incorporating any Sioux cultural expertise was ever conducted at the site or incorporated into any NEPA document.[35]

This testimony and evidence establishes NRC Staff's failure to conduct the necessary hard look under NEPA, as by their own admission, despite it being necessary to the analysis, no Sioux comments or reports were incorporated into the cultural resources reviews, and none of the parties that conducted any cultural review of the site, including field surveys, were trained, experienced, or competent to review or survey the area for, let alone determine impacts from the project to, the cultural resources of Sioux origin. Admissions and testimony confirm that NRC Staff deferred to the applicant's unqualified consultants, while rejecting proposals to incorporate Sioux cultural expertise.

As a result of Powertech's and NRC Staff's inability to fulfill their obligations to properly ensure a competent cultural resources survey of the Dewey-Burdock site, EPA cannot rely on the NRC's NEPA documents to assess the cultural resources impacts of the proposed mine.

Similarly, because NRC Staff has failed to fulfill its government-to-government consultation duties under the NHPA, EPA also cannot rely on the PA or any other NRC Staff consultation to fulfill its own obligations under the NHPA.

EPA must delay any permitting action until a fully competent cultural resources survey is conducted and the Tribe and the public has an opportunity to review and comment on the potential impacts to those important resources. Additionally, EPA should reject the PA as inadequate and engage in meaningful and good-faith consultation with the Oglala Sioux Tribe professional staff and Tribal Council in order to ensure that, in coordination with the Tribe, all cultural resources are identified, impacts are assessed and mitigation measures are developed and implemented.

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[33] See August 19, 2014 Transcript at p. 810, lines 16-22).

[34] August 19, 2014 Transcript at p. 846 line 22 to 847, lines 8.

[35] August 19, 2014 Transcript at p. 821, lines 3-7 (Ms. Yilma); id. at p. 875, lines 6-11 (Ms. Yilma).

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5. Comments on the potential adverse effects of the proposed project

A. **DB Groundwater Discharge Plan May 2017 ("GDP").** In 2012, Powertech applied to the SD DENR for a groundwater discharge permit to dispose of liquid waste fluids via land application. In 2014, the SD DENR recommended conditional approval of the permit application.

Conditions include:

- Land application of liquid wastes cannot occur if sufficient capacity is available via the Class V UIC disposal wells.

- Powertech will collect 4 months of ambient ground water monitoring that is required by ARSD 74:54:02:18 and monthly samples for an additional 8 months AND quarterly sampling thereafter until mining commences. However per a November 17, 2014 letter to DENR Powertech requested permission to suspend the quarterly sampling. This request was granted per a December 3, 2014 letter from DENR. **This suspension of quarterly sampling is not consistent with the permit condition. Further Powertech lacks the financial resources to comply with sampling or monitoring requirements.**

- The permit conditions proposed by the SD DENR indicates 7 compliance points – 4 at Dewey and 3 at Burdock – the March 2012 GW Discharge Plan(GDP) prepared by Powertech indicates only 2 compliance wells for the Burdock land application areas. **There should be a 3rd alluvial compliance well for the Burdock area land application areas.**

- B. There seems to be some uncertainty as to whether there are old underground mine workings. These uncertainties should be resolved **prior** to issuance of a permit.

- C **The permitted allowable limits ("PALs") that are proposed for the compliance wells by DNER in December 2012 are set at "ambient" values for numerous regulated constituents –particularly sulfate, TDS, uranium, gross alpha and radon. These PALs are orders of magnitude above the SD human health standards (SD ARSD 74:54:01::04) and well above the NRC standards included in 10 CFR 20 , Appendix B, Table 2, Column 2.** THE GDP does not provide any discussion to explain alluvial water quality – i.e., – why high TDS, why high sulfate, why high radionuclides. **These discrepancies need to be explained prior to the issuance of a permit.**

- D. No discussion of hydraulic relationship between groundwater in alluvial deposits and surface water in Beaver Creek and Pass Creek. This hydraulic

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relationship needs to be properly evaluated and publicly disclosed **prior** to the issuance of any permit.

E. **It is important to pay attention to the potential for some of the more than 5,000 exploration holes to provide flowpaths through confining zones –which creates possibility for contaminated groundwater to migrate to a USDW. This is apparently occurring in the "alkali area" in the SW part of the Burdock area. The permit application presents significant attention to this issue The draft area permit requires Powertech to take steps to identify leaky historic drillholes during the design of wellfield pump tests and monitoring systems.** A three strategy process is provided by Powertech to accomplish this. This issue raises the question – Can migration of radionuclides from ore bodies to the surficial alluvial aquifers contribute to the high radionuclide content in the alluvial groundwater?

Since Powertech is insolvent and doesn't have financial resources to pay its operating expenses or trade payables, how will it finance the identification of these leaky drillholes?

F. The permit application and the draft area permit are both silent on the issue of reduced groundwater flow in the Fall River and Chilson aquifers downgradient of the mining wellfields. **There should be a water budget analysis to estimate reductions in flow and a discussion of groundwater discharge from the Fall River and Chilson aquifers.**

G. Apparently **Powertech is not planning on active treatment as part of the groundwater restoration. Instead they will rely on natural attenuation, which will be assessed by collecting cores and conducting laboratory column testing.** If the leaching data do not indicate an adequate decrease in ISR contaminants –Powertech will need to submit a treatment plan. There should be concern about implementing this approach – the leaching data might very well be inconclusive and the time and money required to design and operate a treatment method may be unreasonable.

Since Powertech lacks the financial resources to pay its trade payables or current expenses, there is no reason to believe that it will be able to design or operate an adequate treatment plan.

H. **The Non Radiological Effects of Uranium.** The EPA documents omit any discussion or analysis of the non-radiological effects of Uranium.

Inorganic forms of minerals, especially selenium and uranium, as well as other heavy metals, which consistently test high in aquifers post mining, have shown to be toxic to living systems of plants, animals and humans in very low levels. Uranium toxicity at low levels has shown in population statistics of exposed population downwind and downriver from old exposed uranium mines to be more predisposed to chronic conditions such as: metabolic syndromes, diabetes, behavior and sleep problems, obesity and heart disease, fertility, and morbidity and mortality compromises. These are non radiological effects of uranium discussed, in that uranium

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as a metal actively incorporates itself into the biochemistry of the body. The radiological effects are another subject, not involving the actual chemical reactions such are described here.

Heavy metal uranium affects the brain cholinergic system in rat following sub-chronic and chronic exposure - "Previous studies have shown that uranium is present in the brain and alters behavior, notably locomotor activity, sensorimotor ability, sleep/wake cycle and the memory process, but also metabolism of neurotransmitters. The cholinergic system mediates many cognitive systems, including those disturbed after chronic exposure to uranium i.e., spatial memory, sleep/wake cycle and locomotor activity."

Uranium is known to travel through the blood to virtually every tissue and organ system in the living body through active transport by blood. It will reduce and for solid precipitates in the hard tissues of the body like bone and also cause kidney stones and kidney disease and the precipitates enlarge with time and chronic exposure. Binding with bicarbonate in the body will also compromise the body's ability to neutralize acids, predisposing to gastric ulcers as well as various muscle pains, cramps and spasms. Highly acidic bodies with compromised acid neutralization abilities, such as contamination with compromising uranium ions, will have higher agitation levels and volatility of behavior. Uranium ions in the liver will compromise blood sugar regulation, causing increased cravings for sugars in the diet, leading to diabetes, metabolic syndromes and obesity, as carbohydrate metabolism is compromised.

Further, as blood sugar lacks internal regulation, alcohol and drug use is elevated in statistics, as the body struggles to "just feel good for a little while". Increased cancer rates are observed with uranium exposure as well as reproductive toxic effects with DNA breakage observed. Compromise to the connective tissues of the body, that cover virtually every surface in the entire body, produce autoimmune diseases such as crippling Lupus. This is exactly what we are seeing in population health statistics on the reservations affected. Further, the toxic effects of uranium are greatly enhanced in the presence of calcium ions, which are known to be generated in ISL mining as well as in runoff waters of the Rocky Mountains over old uranium open pit mines. The Rocky Mountains are high reservoir of calcium carbonate, so ISL mining waters containing uranium as they are known to do, will have even more toxic effects in synergy than what would be expected and predicted of each separately. [36]

"Uranium as a heavy metal is of particular importance as a complex of uranium and bicarbonate ions, which increases the solubility of uranium in serum. This compound is rather insoluble in water due to the complex ion formation between uranium and bicarbonates. This mechanism determines the transport of ultra filterable uranium from the sites of contamination to the tissues and target organs (8). In blood, the uranium-bicarbonate complex establishes an equilibrium with non-filterable protein-bound uranyl ions, with 60% of uranium bicarbonate-formed and 40% protein- formed (9). In other

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[36] See

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studies, 74% of uranium in blood was present in the inorganic compartment of plasma, 32% was protein-formed, whereas 20% was associated with red blood cells (10). Uranyl salt complexes with bicarbonates are less stable than uranous salt complexes. Reduction of uranium in plasma is not probable, while the uranous salts can be reduced in the intracellular environment (11). Uranous (IV) retention sites are the bone and kidney, whereas uranyl (VI) ions accumulate in the liver and spleen prior to their redistribution in the renal and skeletal system."

"Each of the uranyl ions are complexed by two phosphate ions on the surface of bone crystals, with simultaneous release of two calcium ions. The uranous ion produces a toxic effect on the living cells by inhibiting the processes of metabolism of carbohydrates by the inhibition enzyme systems. A uranyl ion replacing a magnesium ion binds the ATP molecule to hexokinase. ATP-uranyl-hexo- kinase complex blocks the release of phosphate to glucose, inhibiting its first step of metabolic utilization with non-metabolized glucose in the extracellular environment (12). The toxic effects of uranium were shown to be enhanced by the administration of calcium (33). The effects of uranium on the nervous system have been described as paralysis of the hind legs, blindness, and loss of coordination in rabbits in the terminal phase of intoxication (52). Most recent studies indicate significantly higher prevalence of malignant diseases in uranium workers (59), with increased mutations in underground miners (60) and connective tissue disease, including lupus erythematosus (61). Reproductive toxicity of uranium in a recent Chinese study includes chromosome aberrations in spermatogonia, causing DNA alterations in the spermatocytes and strand breakage in sperm (62)."

I. **All metals/minerals have a relationship to each other in Nature.** The EPA documents fail to consider or analyze the relationship between and among heavy metals and relationship to animals, and human bodies. Heavy metals generated from mining are many, and will compromise many essential minerals for health. When one mineral or metal is too high, it will exert a repressive effect upon its counterpart metal or mineral, causing a deficiency or imbalance.

Since minerals are known to fuel enzyme systems in the body, and the living body is dependent upon enzymes for life itself, compromise of any enzyme system can cause severe health consequences and even death. The toxic heavy metals generated in ISL mining are shown in an overlay to accurately depict the interference of those toxins on the natural system and their impact to all living things, even plants.

Inorganic salts of metals most prominent in aquifers, also have different toxicities, and any monitoring of aquifers should include speciations of these different forms so that proper toxicity evaluation can be done. Simply giving the absolute levels of a metal does not tell the whole story. All metallic "salts" are not equal. They can have different solubilities, different melting points, different Ph, different conductivity affecting the central nervous system that relies on electrical signals, and totally different chemistry within the living body.

Further, any discussion to the general lay public needs to distinguish between a chemical metallic salt and ordinary table salt, that the public is led to believe will be created as "salt" in a mined aquifer. There are many species/chemical forms that a metal can take upon exposure to oxidation/reduction reactions typical within an ISL mining aquifer. Typically, speciation testing, even if monitored by the mining company, is not made available to the public. Selenium is the example, but all metals do this.

J. **The difference between inorganic and organic compounds.** EPA documents fail to describe, consider or analyze the difference between inorganic and organic forms of the same compounds. Organic compounds always contain carbon, while most inorganic compounds do not contain carbon. Also, almost all organic compounds contain carbon-hydrogen or C-H bonds. Organic chemistry is "The Chemistry of Life". Metals in an inorganic form have significantly different chemistry in the living body from organically bound minerals

Organic forms of uranium as well as other toxic metals have also been shown to exist in mining areas and they are not known to be recoverable by the ion exchange method of ISL recovery, since it is already bound organically and will not bind to the organic synthetic resins. Organic forms of any heavy metal are known to be much more toxic and much more bioavailable, so that they are able to penetrate the lining of the digestive tract much easier than ionic and inorganic salts that are blocked by their electrical charges.

Organic metals have their electrical charges spread over the organic ligand they are bound to, so that they act as a "chelate", something that the health industry does to minerals to significantly improve absorption of essential minerals, and also make them much more able to enter into direct biochemical reactions in the living body. Organically bound metals under this circumstance, and there is plenty of organic carbon naturally existing with ISL min- ing sites to make this a complication, will continue to increase in the waste water of the ISL mine as they are **not recoverable, adding to the metal burden of the wastewater and also the toxicity of such beyond what would be it the metals remained in an in- organic and ionic form.**

Reference:

Problems with Ion Exchange in Water Purification

"Ion exchange is another method used successfully in the industry for the removal of heavy metals from effluent. An ion exchanger is a solid capable of exchanging either cations or anions from the surrounding materials. **Commonly used matrices for ion exchange are synthetic organic ion exchange resins. The disadvantage of this method is that it cannot handle concentrated metal solution as the matrix gets easily fouled by organics and other solids in the wastewater.** Moreover ion exchange is nonselective and is highly sensitive to the pH of the **solution." (Kurniawan et al., 2006).**

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On the other hand, binding natural essential minerals to organic molecules will make them more bioavailable as well, and so much better able to enter the living body. We use that chelation process to enhance nutrition for essential minerals.

Arabian Journal of ChemistryVolume 4, Issue 4, October 2011, Pages 361–377

25 controlled studies by different authors in five different countries adverse array of data is presented. These data validate the effectiveness of mineral nutrients presented as amino acid chelates when compared with the ionic forms derived from the inorganic salts. These studies further support the results of numerous laboratory experiments showing increased absorption, assimilation and reduced toxicity of the forms of minerals chelated to amino acids. With little cost and effort animals can be supplemented with amino acid chelates which will promote, with little risk of overdose, a fuller genetic potential achievement as far as mineral requirements are concerned. Results of this supplementation are reflected in increased growth, immunological integrity and more consistent reproduction increased ovulation and conception after first service as a result of increased bioavailability of these. See slide 5

Reference:

Chelated Minerals in Animal Nutrition

Rajendran, C.Kathirvelan and V.Balakrishnan, Madras Veterinary College, Chennai, INDIA

K. **The opposing 'personalities' of minerals.** Even the minerals that we consider necessary for the living body will have different biochemical actions and tissue and organ destinations in the living system. EPA documents fail to describe, consider or analyze this.

Common case in point: selenium. Selenium is known to have wonderful health effects, preventing cancer, converting the storage form of the storage thyroid hormone T4, to the active form T3 by virtue of fueling an enzyme glutathione peroxidase. This biochemical reactions is absolutely essential to life.

Glutathione also doubles as the most powerful antioxidant in the body. Inorganic selenium, as is the form generated in ISL mining, is known to cause birth defects of the highest severity.

However, in the inorganic state, selenium as a consequence of mining, is severely toxic, producing severe deformities. The higher evolved animals above micro organisms are not able to convert quantities of the inorganic forms of minerals, even essential ones like selenium, into the bio compatible organic forms.

How inorganic metals are organified by microorganisms that contaminate aquifers from open boreholes, and surface waters and lands

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Bioaccumulation of organified heavy metals rises quickly in the living systems and the environment, rising up the food chain.

Elemental inorganic forms of metals and minerals are "organified", bonded with carbon compounds to become organic forms by micro organisms, which are then eaten by simple life forms, which are then eaten by higher animals, and so on, all the way up to man and other top predators at the top of the food chain. As these metals and minerals pass from one body to the next, they are known to concentrate as they move up, with humans and other top predators then suffering the worst consequences from the highest concentration in their tissues and organs. There can be formed many different kinds of organic metal compounds, however, all are not equally bio essential, some are even more toxic as the living body cannot convert them. This will depend on which micro organisms are organifying the metals into which compounds.

L. **Selenium is a poorly regulated heavy metal, and difficult to regulate as far as toxicity and allowable levels are concerned, because of the myriad chemical forms that it can exist in, each with different toxicity.** The same can also be said for every other toxic metal as well as nutritional metal. The opposing 'personalities' of these elements is a very real thing in the natural world. There are incongruencies between actual toxicities of some chemical forms of selenium and the regulatory levels. Most toxicity level charts fail to take into consideration the chemical forms of metals and minerals, which is absolutely critical in assessing any toxicity status. Care for patients suffering from selenium poisoning is usually aimed at treating symptoms. There is no specific antidote or treatments for selenium poisoning.

Selenium from mining waste is highly mutagenic. EPA documents fail to describe, consider or analyze this.

Reference:Upper Human Limits for All Minerals and Metals http://iom.edu/Activities/Nutrition/SummaryDRIs/~/media/Files/Activity%20Files/Nutrition/DRIs/ULs%20for%20Vitamins%20and%20Elements.pdf

M. **Arsenic is another major pollutant.** Unlike selenium, which has a value in certain chemical forms as a health and life biochemistry promoter, arsenic has not been found to have any health value outside of its use as a parasiticide, and even that use can have toxic consequences. EPA documents fail to describe, consider or analyze this.

Arsenic, in particular, is extremely dangerous in the world today, and especially North America, because arsenic opposes iodine on the mineral wheel, meaning that high arsenic causes iodine deficiency. Current research has shown that we need far more iodine than we thought we did for health, and we are not getting it in food or water, even as we used to decades past, when iodine was used in food processing and water purification.

Arsenic has been rising in our environment and food supply because of the legal dumping of it into commercial fertilizers from mining and ore smelting waste since 1976 when it became legal to do so. In the 1980's President Reagan increased to legal limit of arsenic in public

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drinking water because the levels were rising so high, and arsenic is both difficult and expensive to remove from water, as mining reclamation efforts have shown.

Arsenic compromises thyroid. Thyroid disease has escalated epidemically in the last 50 yrs since iodine was reduced in our food and water supplies. And today, as relevant for accelerated aging, each generation is not expected to live as long as its parents, and higher and higher statistics of formerly "old age" ailments are evident in younger and younger segments of the population, severely compromising our health care.

Arsenic will cause a physiological iodine deficiency by its opposing actions even if there is enough iodine in the diet to counteract general deficiency. Such is the case with all opposing metals and minerals of nutritional minerals. This is how things work in Nature and the living body. Metals like arsenic have their own set of compromising chemistries, but the opposition and interference chemistries of opposing metals and minerals presents a whole new set of pathways for health compromise, independent of the individual roles of the individual metals in actual biochemical reactions. So, but its opposing action on iodine, arsenic can precipitate a whole hypothyroid overlay on the living body, complete with all the health compromises that a hypothyroid body will manifest.

There are different LD 50 doses for different chemical forms of arsenic. LD 50 represents the level at which 50% of the animals are killed from the toxin presented. So this again shows the importance of different toxicities of different chemical forms.

There is no specific treatment for chronic arsenic poisoning. Once it has been identified further exposure should be avoided. Recovery from the signs and symptoms may take weeks to months from when exposure is stopped. In particular, effects on the nervous system may take months to resolve and in some cases a complete recovery is never achieved.

N. **Heavy metals also act as xenohormones and hormone disruptors in the living body.** EPA documents fail to describe, consider or analyze this.

Human hormones are all stereoisomers, meaning atoms are arranged differently in 3 dimensional space, and are subject to the toxic effects of xenohormone environmental toxins. Heavy metals have been shown to act as xenohormones, entering into the cellular receptor sites and skewing the hormone biochemical pathways for Estrogen, Testosterone, Progesterone, Cortisol, Pregnenolone, Thyroid, DHEA, Insulin and more. Since hormones are key initiators, regulators and intermediary metabolites of virtually every biochemical reaction in the living body, the protection of their integrity is crucial for their actions. Heavy metals, environmental chemicals and industrial chemical wastes can act as "xenohormones", and interfere with natural hormones, enzymes, etc., and cause cancer and other severe ill health compromises.

Further, heavy metals are known to be "xenoestrogens", a hormone mimic of estrogen, the female and growth hormone. Estrogenic toxicity causes cancer, skin lesions, obesity, fertility problems, accelerated aging, liver problems, learning problems, mood disorders, metabolic

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syndrome, blood sugar irregularities, blood fat irregularities, increase in breast tissue and size in both males and females, smaller or even undeveloped male genitalia and higher anger and anxiety responses to daily life situations. Mineral imbalances caused by high levels of toxic heavy metals themselves, also are known to cause hormone imbalances of insulin, thyroid, testosterone, progesterone, estrogen and cortisol.

We see those very problems exemplified in the most toxic areas of the world, and in increasing statistics overall in the world, as environmental pollution moves around the world. All of the heavy metals studied so far, that are common exposures to man, have shown to be "xenoestrogens", including those that are generated from the rock strata at ISL mines. The increase in obesity of animals and humans over the last several decades is directly correlated to the increase of environmental toxins that are known to be fat soluble and deposited in body fat, including heavy metals.

Reference: J Toxicol Environ Health B Crit Rev. 2009 Mar;12(3):206-23. doi: 10.1080/10937400902902062.

The effects of metals as endocrine disruptors.

Iavicoli I1, Fontana L, Bergamaschi A.

Abstract

"This review reports current knowledge regarding the roles that cadmium (Cd), mercury (Hg), arsenic (As), lead (PB), manganese (Mn), and zinc (Zn) play as endocrine-disrupting chemicals (EDCs). The influence of these metals on the endocrine system, possible mechanisms of action, and consequent health effects were correlated between experimental animals and humans. Analysis of the studies prompted us to identify some critical issues related to this area and showed the need for more rigorous and innovative studies. (1) Study the possible additive, synergistic, or antagonistic effects on the endocrine system following exposure to a mixture of metals since there is a lack of these studies available, and in general or occupational environments, humans are simultaneously exposed to different classes of xenobiotics, including metals, but also to organic compounds that might also be EDCs; (2) assess the potential adverse effects on the endocrine system of low level exposures to metals, as most of the information currently available on EDCs originates from studies in which exposure levels

Our hormones are all stereoisomers, meaning atoms are arranged differently in 3 dimensional space, and are subject to the toxic effects of xenohormone environmental toxins. Heavy metals have been shown to act as xenohormones, entering into the were particularly high; and (4) assess the effects on the endocrine and reproductive systems of other metals that are present in the general and occupational environment that have not yet been evaluated."

PMID: 19466673 [PubMed - indexed for MEDLINE]

O. **Heavy metals are also known to denature protein and negate the biochemical activities of protein based enzymes and hormones, as well as cause effects in skeletal muscles.** EPA documents fail to describe, consider or analyze this.

Protein makes up a full 90% of the dry weight of the living body. Any living body, any species. Protein is an organic compound com- posed of long chains of amino acids. Each protein has its own distinct combination of amino acids and also its unique three dimensional shape, and it is the shape that gives it its unique biochemical activity, not simply the chemical formula of its amino acid composition. **This is the most important concept in protein, hormone and enzyme biochemistry.**

Denaturation is a process in which proteins lose their three dimensional structure/shape which is present in their native state, causing them to unwind and deform, by application of some external stress or compound such as a strong acid or base, a concentrated inorganic salt, an organic solvent (e.g., alcohol or chloroform), radiation or heat. If proteins in a living cell are denatured, this results in disruption of cell activity and possibly cell death. Denatured proteins can exhibit a wide range of characteristics, from conformational change and loss of solubility to communal aggregation to form a solid.

P. **Heavy Metal Salts: Heavy metal inorganic salts act to denature proteins in much the same manner as acids and bases.** EPA documents fail to describe, consider or analyze this.

Heavy metal salts usually contain Hg+2, Pb+2, Ag+1 Tl +1, Cd+2 and other metals with high atomic weights. Since salts are ionic they disrupt salt bridges in proteins. The reaction of a heavy metal salt with a protein usually leads to an insoluble metal protein salt, meaning that it forms a solid and becomes inactive biochemically.

A common example that we all understand and that is epidemic in the human and pet animal population today, is that of insulin. Insulin is a three dimensional folded protein that acts also as a hormone, regulating blood sugar but escorting glucose in the blood into the tissues for storage. If the insulin cannot accomplish this process, then the blood sugar rises to dangerous levels and the patient is diagnosed with Diabetes.

Non-Insulin Dependent Diabetes, or Diabetes Type 2, is the result of such a compromise in the body, with the insulin not able to perform its designated function. It is also called Insulin Resistant Diabetes, because simply giving the affected patient more insulin does not cure the problem. Typical blood testing of insulin reveals the presence of adequate insulin or even higher than normal levels, but conventional blood testing is not capable of viewing the actual three dimensional shape of the molecules to properly asses their actions or lack of. So we typically see the Type 2 diabetic having both high blood glucose along with high insulin levels that are not working effectively. The insulin has been denatured in the blood, and any new insulin that would be still functional when administered to the type 2 diabetic with toxic blood sporting effective

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levels of some denaturing toxin, will just further deform any new and functional insulin given. Such is the naming of "Insulin Resistance".

The same scenario is commonly born out with thyroid testing and other natural hormones such as estrogen, testosterone, progesterone, DHEA, cortisol, pregnenolone, etc. We call this scenario in medicine "euthyroid hypothyroid" for thyroid, and appropriately such for the other hormones, where the blood levels show normal levels but the patient manifests hypo hormone symptoms, because the hormones present have been denatured and rendered ineffective. This is a serious problem for medicine today. This is a serious problem in assessing the real toxicity of any environmental toxin that has been shown to denature protein, such as heavy metals. Conventional blood testing does not accurately reflect the true health compromise of the sick individual.

Metals cannot be broken down to other elements in Nature or the living body, and in fact, toxin exposure in continuous low levels, formerly thought to be safe, have now been shown to have additive or synergistic effects, where the end effects of a combination of toxin exposure produces more severe health compromises than those that would be expected from each toxin. The common example is that 2 +2 now equals 8. Since different chemical forms of minerals and metals can and do exist, and some are more toxic than others, and travel up the food chain at different rates. Different chemical forms of minerals and metals target different organs and tissues of the body.

Additionally, each individual toxin is shown to enter the body at levels under the body's detoxification radar of liver detoxification, thus allowing toxic levels of the pollutant to build up over time, until the body becomes so sickened that it cannot help itself anymore in a detox and elimination protective method.

Reference: **Combined Toxic Exposures and Human Health: Biomarkers of Exposure and Effects**
Int. J. Environ. Res. Public Health 2011, 8, 629-647; doi:10.3390/ijerph8030629

Q. No testing for speciation of inorganic forms of metals, and testing for organified forms, including uranium. The EPA documents fail to describe, analyze or even mention this.

EPA should upgrade their testing of MCL's by including the speciation of inorganic forms of metals, and testing for organified forms, including uranium. Then, comparing the LD 50 levels of each chemical form, which are often orders of magnitude in difference. Only then can the true toxicity of the wastewater you are testing be assessed. Using only a quantitative analysis of the metals tells you nothing about the toxicity you are actually looking for.

R. **Lack of oversight of UIC wells.** The EPA does not adequately supervise or properly regulate UIC wells after the permits are issued. This puts the public at great risk. The EPA documents fail to describe, analyze or address this issue.

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The Government Accountability Office says environmental regulators are failing to adequately enforce rules for wells used to dispose of toxic waste from drilling. **"Injection wells used to dispose of the nation's most toxic waste are showing increasing signs of stress as regulatory oversight falls short and scientific assumptions prove flawed."**[37]

"Federal environment officials have failed to adequately oversee hundreds of thousands of wells used to inject toxic oil and gas drilling waste deep underground. "The report, by the U.S. Government Accountability Office, is critical of the Environmental Protection Agency's inconsistent handling of safety inspections, poor record keeping, and failure to adjust its guidelines to adapt to new risks brought by the recent boom in domestic drilling, including the understanding that injection wells are causing earthquakes."

Often the EPA does not know exactly how many wells existed in the United States or what volume of waste was being injected into them, and that it did not possess complete records required to be collected under the Safe Drinking Water Act." "These wastes, often euphemistically referred to as "saltwater," commonly contain a mixture of water, hazardous chemicals and radioactive minerals."

"The EPA generally agreed with the GAO's findings and characterization of the challenges the agency is currently facing. Concerns have mounted recently about potential water contamination from injections wells."

If the circumstances of the past have not been rectified, then the proposed Powertech permits, which require so much on the part of Powertech to be in compliance, should not be issued.

6. Comments on measures to avoid, minimize or mitigate potential adverse effects on historic and traditional cultural properties pursuant to Section 106 of the National Historic Preservation Act and 36 CFR § 800.2(d) and § 800.6(a)(4)

The Environmental Protection Agency National Historic Preservation Act Compliance and Review for the Proposed Dewey-Burdock In-Situ Uranium Recovery Project, which is part of the Administrative Record for the UIC Class III Draft Area Permit, discusses how the EPA intends to comply with Section 106 of the National Historic Preservation Act.

To date, the EPA has done nothing meaningful to avoid, minimize or mitigate potential adverse effects on historic and TCPs under Section 106 other than rely on the promises of an insolvent and corrupt organization. Therefore, there has been a complete failure to provide measures required by Section 106 of NHPA and 36 CFR § 800.2(d) and § 800.6(a)(4).

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[37] See EPA Program to Protect Underground Sources from Injection of Fluids Associated with Oil and Gas Production Needs Improvement, GAO-14-555: Published: Jun 27, 2014. Publicly Released: Jul 28, 2014.

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7. COMMENTS ON TWO OPTIONS FOR APPROVAL OF THE AQUIFER EXEMPTION THAT POWERTECH REQUESTED RELATED TO THE CLASS III PERMIT APPLICATION

The EPA has suggested two options for AE Approval:

> Two Options for AE Approval: For this reason, the EPA is offering and requesting comment on two options for approval of the AE area based on the status of well 16:
>
> Option 1 includes approval of the AE area shown in Figure 4, excluding the two Burdock Area wellfields (6 and 7) shown in blue in Figure 4. Powertech may request the exemption of Burdock wellfields 6 and 7 once well 16 is plugged and abandoned after the alternative water supply is in place. Both Burdock wellfields 6 and 7 are being excluded from this option because it appears that the southeastern end of Burdock wellfield 7 partially overlaps the northeast end of Burdock wellfield 6 in the area of well 16 as shown in Figure 4. Well 16 is located up-gradient of Burdock wellfields 1 and 8, which are the closest Burdock wellfields to well 16 outside of wellfields 6 and 7. Even though well 16 is located up-gradient of Burdock wellfields 1 and 8, the EPA calculated the capture zone width for well 16, as discussed below, to verify it does not cross the AE boundaries for Burdock wellfields 1 and 8.
>
> Option 2 allows Powertech to plug and abandon well 16 before the issuance of the final AE Record of Decision. After well 16 has been plugged and abandoned, the EPA will be in a position to determine that the groundwater within the AE boundary for Burdock wellfields 6 and 7 is not a current source of drinking water, and can approve the portion of the AE area shown in blue in Figure 4 as part of the final AE Record of Decision.

As between the two Options, it would be preferable to require Powertech, under Option 1, to request the exemption of Burdock wellfields 6 and 7 once well 16 is plugged and abandoned after the alternative water supply is in place. Powertech doesn't have the funds or resources to properly plug and abandon the boreholes, and Well 16 or do anything else and, therefore, should be required to demonstrate performance with the EPA requirements and existing NRC License Conditions, including the proper plugging and abandonment of all boreholes, and the implementation of the alternative water supply for Well 16, before it is allowed to request the exemption for wellfields 6 and 7.

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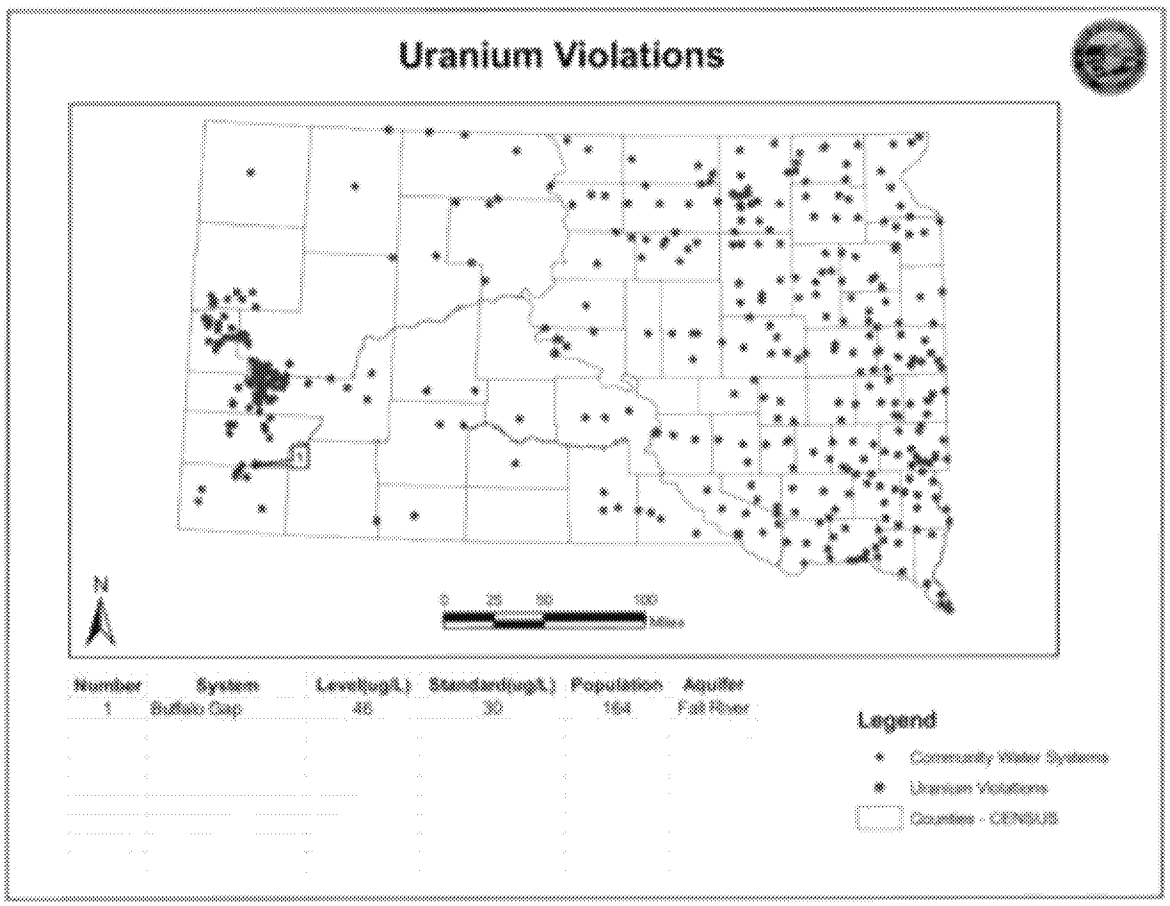
8. COMMENTS ON THE DRAFT ENVIRONMENTAL JUSTICE (EJ) ANALYSIS FOR THE DEWEY-BURDOCK UIC PERMITTING ACTIONS

The Town of Buffalo Gap, SD, with a history of high uranium levels in the water (higher than found in Edgemont, SD) should be included in the EJ analysis to the same extent as Edgemont, SD.



Section 1.3 of the EJ Analysis states that the EPA used a 20-mile buffer zone measured from the location of the Dewey-Burdock Project Area Boundary without considering the flows of water or related aquifers that impact areas farther away such as Buffalo Gap, SD. The EPA found that 'Based on the preliminary screening processes, the City of Edgemont, South Dakota was identified as a community for which the EPA should conduct additional evaluation to determine if the area is a potentially overburdened community as discussed in Section 2.5."

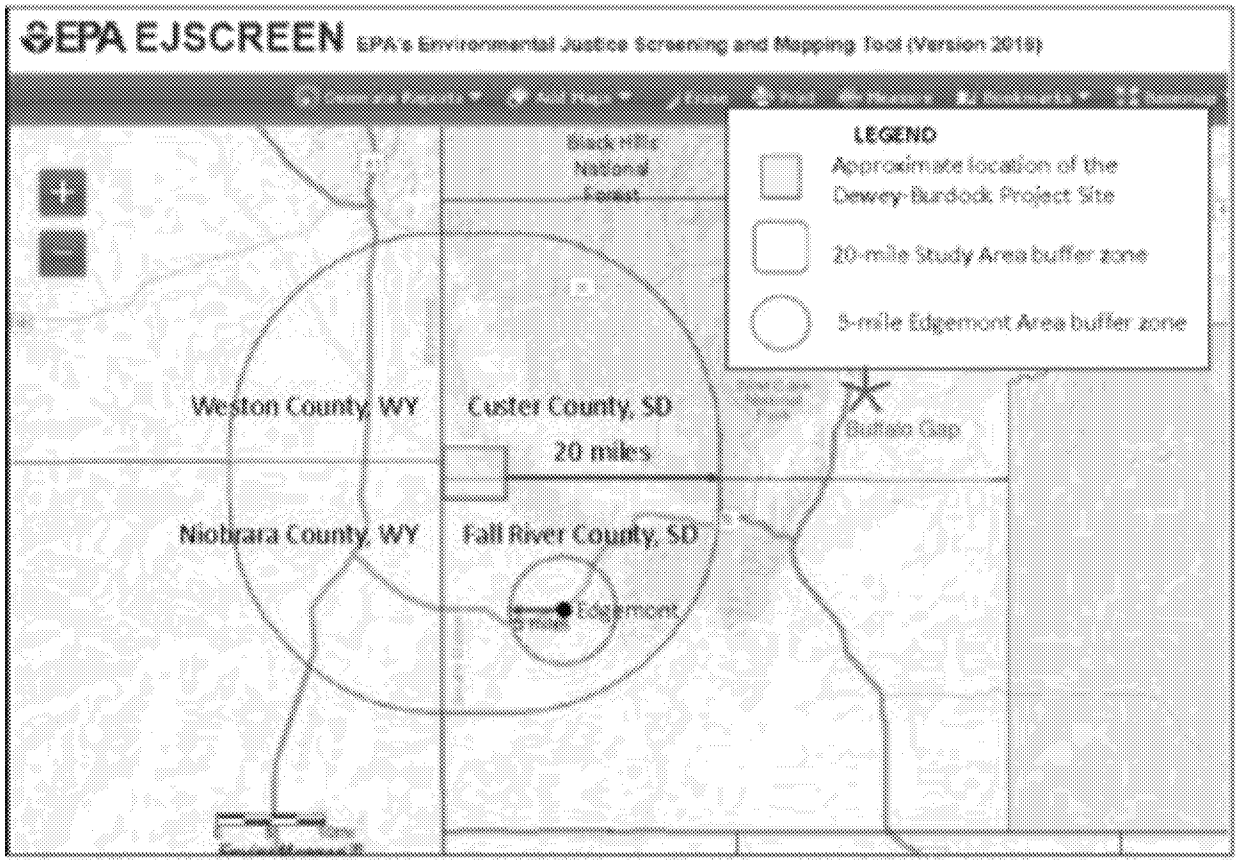


Figure 2. Location of the Study Area, which includes the Dewey-Burdock Project Area and a 20-mile buffer measured from the approximate Project Area Boundary, and the Edgemont Area, which includes a 5-mile buffer around the City of Edgemont.

The Town of Buffalo Gap, SD, shown in close proximity to the Project Area Boundary, should be included in the EJ Analysis. Like Edgemont, SD, the Town of Buffalo Gap, SD, is a potentially overburdened community.

Section 11.0 of the EJ Analysis describes additional, enhanced public participation and outreach requirements that should be made available to the residents of Buffalo Gap, SD.

11.0 Conclusions

The screening process using EJSCREEN identifies the City of Edgemont as a potentially overburdened community. Thus, the EPA has determined that it is appropriate to conduct enhanced public participation and outreach activities with the aim of encouraging public involvement in the permitting process. The EPA is exercising its discretion to hold a number of public informational meetings and public hearings following issuance of the draft UIC permits and to allow for a longer comment period than that required by regulation. The EPA also proposes to implement appropriate permit requirements intended to ensure protection of the underground sources of drinking water and to

facilitate public notification and access to information in the event of noncompliance with permit requirements. The EPA will continue to assess potential EJ considerations and is inviting review and comment on this draft EJ analysis.

Drinking Water Systems
Radiological Chemical Data
Proximity of Cheyenne River

Source	Sample Date	Parameter		
		Gross Alpha pCi/l	Radium 226/228 pCi/l	Uranium µg/l
Edgemont, SD				
RR/BN Well	12/14/2005	11	3	0
TVA Well	12/14/2005	13	2	0
Well #2 & #4	12/14/2005	14	3	9
Provo, SD				
Well #2	6/27/2005	12.6	4	0
Hot Springs,SD				
Hot Brook	12/15/2005	4	0	0
Evans Well	5/6/2002	3.1	0.8	0
Oelrichs, SD				
Served by Fall River RWS (same as Hot Springs)				
Buffalo Gap, SD				
Well #1	12/6/2004	14.4	0.4	45.7
Wasta, SD				
Springs	10/6/2003	9.1	0.7	0
Tri-County RWS				
Plant (Missouri River)	11/19/2002	5.7	0	0
Drinking Water Standards:				
Gross Alpha:		15	pCi/l	
Radium 226/228:		5	pCi/l	
Uranium:		30	µg/l	

Buffalo Gap, SD tested 500% higher for Uranium in its water than Edgemont, SD. Based on the foregoing, the Town of Buffalo Gap, SD should be included in the EJ Analysis.

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* * *

For the foregoing reasons, and based on the foregoing comments, the undersigned hereby object to the issuance of the proposed permits to Powertech.

Respectfully submitted,

David Frankel,
individually and as
Legal Director of Aligning for Responsible Mining
[redacted]

***

These comment are also signed by and adopted by:

/s/
Adam McLean, individually and on behalf of
Council for Responsible Mining
[redacted]

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June 19, 2017

Valois Shea
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkook Street
Denver, CO 80202-1129

Re: Comments on Dewey-Burdock Class III Draft Area Permit No. SD 31231-000

Dear Ms. Shea,

On behalf of Energy Fuels Resources (USA), Inc. (Energy Fuels), we appreciate the opportunity to comment on the EPA's Dewey-Burdock Uranium In-situ Recovery (ISR) Draft UIC Class III Area Permit. Energy Fuels is a domestic uranium mining company, and we own and operate the last operating uranium mill in the United States, the White Mesa Mill in Southeast Utah. We also own and operate two in-situ uranium recovery operations, the Nichols Ranch Uranium Project located in Central Wyoming, and the Alta Mesa Uranium Project in South Texas. Energy Fuels employs 116 people in the states of Arizona, Colorado, New Mexico, Texas, Utah and Wyoming.

As an experienced operator of uranium in-situ projects we have serious concerns with the EPA's Draft UIC Class III Area Permit. The EPA draft, as presented, contains requirements far exceeding those established in 40 CFR 144.33. Energy Fuels primary concerns lie with the following overarching issues presented in EPA's draft,

1. Insertion of permit conditions that are duplicative of proposed rules currently in the rulemaking process.

2. Misapplication of the regulatory requirements set forth in 40 CFR §144.12(b) and 40 CFR §142.

3. Overlap and Exceedance of the Nuclear Regulatory Commission's (NRC) authority as defined in the Uranium Mill Tailings and Recovery Act and existing rules.

Permit Conditions that are Duplicative of Current Rulemaking

In Part I, page 1, paragraph 2, first sentence, the EPA draft permit states, *"Because this permit authorizes more than one injection well, it is an Area Permit and subject to the requirements found at 40 CFR §144.33"*. That is a true statement; however, EPA has no authority to place additional requirements extending beyond those established in the cited regulation. EPA appears to be attempting to insert; and thus set a precedent for the inclusion of proposed regulations presently described in 40 CFR 192 (*Proposed Rule – Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings* (Federal Register/Volume 82, Number 12/ Monday, January 19, 2017). At this time, no other ISR Company is required to meet these proposed permit conditions in States with primacy over UIC programs under §144.33. A side-by-side comparison between the draft permit and the proposed revisions to 40 CFR §192 are remarkably similar, and yet, the proposed revisions to §192 remain "proposed" and still subject to the full rulemaking process before becoming final. EPA should revise the draft permit to incorporate only the applicable rule requirements rather than creating requirements that could be counter to future rule changes.

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An example of EPA's backdoor approach to implementing unapproved regulations, by inserting duplicative permit conditions, is found in Part IV of the draft. Per the draft permit 'post-restoration' it is to be completed following approved restoration by the NRC. While the draft permit does not contain any specific requirements directing the Dewey Burdock project to conduct restoration, the EPA is directing additional 'post-restoration' work above and beyond what is currently required by NRC regulations and the source material license issued by the Commission.

Furthermore, Part IV of the draft permit includes a requirement to install a Down-Gradient Compliance Boundary. The Down-Gradient Compliance Boundary is an additional string of monitor wells located between the production area and the monitor well ring. To this unjustified requirement, for installation of an additional set of monitoring wells, the EPA has attached an entirely new set of baseline monitoring, excursion monitoring, a new and separate point of compliance, and therefore an additional set of restoration requirements; all of which is completely duplicative and overlapping with the NRC license and Commission decisions.

Misapplication of 40 CFR §144.12(b) and 40 CFR §142

Part IX, Section E of EPA's draft permit also addresses 'post-restoration' monitoring, indicating it is required to demonstrate no ISR contaminates cross the aquifer exemption boundary into the surrounding USDW's at a concentration above the baseline water quality limits of the USDW outside the aquifer. Again, this monitoring is outside current approved regulation. Interestingly, the monitoring requirements appear to be an application of 40 CFR §144.12(b), even though it isn't cited in the document, and it has been misinterpreted and therefore misapplied. 40 CFR §144.12(b) actually states:

> *"...if any water quality monitoring of an underground source of drinking water indicates the movement of any contaminant into the underground source of drinking water, except as authorized under part 146, the Director shall prescribe such additional requirements for construction, corrective action, operation, monitoring, or reporting (including closure of the injection well) as are necessary to prevent such movement. In the case of wells authorized by permit, these additional requirements shall be imposed by modifying the permit in accordance with §144.39, or the permit may be terminated under §144.40. If cause exists, or appropriate enforcement action may be taken if the permit has been violated."*

40 CFR §144.12(b) indicates that modifying a permit to include additional monitoring is done only as a consequence of negative monitoring results for a USDW outside of the aquifer exemption; whereas, EPA is requiring all of the additional monitoring at the start of mining. It is obvious this regulation, as written, has a specific course of action by which negative results must be demonstrated, which then triggers a consequence and/or corrective action (i.e. additional monitoring). For the EPA to "pre-impose" a regulation without cause, thus adding exorbitant costs to a start-up project, is inappropriate.

Another part of 40 CFR §114.12 the EPA has omitted is the language from 40 CFR §144.12(a) which states:

> *"...if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR §142 or may otherwise adversely affect the health of persons."*

§144.12(a) is important because of its relationship with 40 CFR §142, and should be cited in the draft permit document. 40 CFR §142 not only includes the national drinking water standards but also the application of MCL's

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that must be considered when applying the standard, "*may otherwise adversely affect the health of persons.*" EPA's misinterpretation gives the appearance of selectively applying regulation by only allowing baseline as the criteria and disallowing the use of MCL's which form the standard used for protection of human health.

This is evident with EPA's statement, "*to demonstrate that no contaminants cross in the aquifer exemption boundary*" in reference to Table 13 that contains 45 contaminants, accounting for all major cation and anions known to commonly occur in natural groundwater systems. The requirement to meet baseline for 45 contaminants is an interesting imposition considering the EPA itself doesn't believe waste fluids are being injected into the exempted aquifer as cited in the EPA Draft Aquifer Exemption, Record of Decision (ROD), page 18, Ensuring Protection of Adjacent USDWs, referencing EPA guidance #34 which states:

> *"...if the exemption pertains to only a portion of an aquifer, a demonstration must be made that the waste will remain in the exempted portion. Such a demonstration should consider among other factors, the pressure in the injection zone, the waste volume, and injected waste characteristics (i.e., specific gravity, persistence, etc.) in the life of the facility. Given the nature of the ISR operation, waste fluids are not being injected into the exempted portion of the aquifer."*

Overlap and Exceedance of NRC Authority

The Uranium Mill Tailings Radiation Control Act (UMTRCA) grants EPA the authority to promulgate *generally applicable standards* (not regulation). The NRC then enacts and enforces regulations to conform to the generally applicable standards. The requirements in Part IV and Part IX of this draft, which are provided for under the guise of 40 CFR §144.33, not only overlap the NRC regulations but exceed the EPA's authority under UMTRCA. Stringent requirements for *all* groundwater restoration of ISR wellfields already exist per NRC authority under 10 CFR §40 Appendix A which states:

> *"Under the existing requirements in Appendix A of 10 CFR Part 40, the staff will apply the Criterion 5B standards in evaluating **all** ISR groundwater restoration plans currently under review or submitted in the future. This policy includes reviews of applications for new ISR facilities, reviews of restoration plans at existing, licensed ISR facilities, and review of ISR license renewal applications."*

Criterion 5B(5) goes on to say:

> *"At the point of compliance, the concentration of hazardous constituents must not exceed-*
> *(a) The Commission (NRC) approved background concentration of that constituent in the ground water;*
> *(b) The respective value given in the table in paragraph 5C if the constituent is listed in the table and if the background level of the constituent is below the value listed; or*
> *(c) An alternate concentration limit established by the Commission (NRC)."*

Implementation of restoration requirements are presented in NRC Regulatory Issue Summary 2009-05 Uranium Recovery Policy Regarding (1) The Process for Scheduling Licensing Reviews of Applications for New Uranium Recovery Facilities, and (2) the Restoration of Groundwater at Licensed Uranium In Situ Recovery Facilities (April 29, 2009). This publication is a public document available on the NRC Adams site Accession Number ML083510622. Knowing this poses several concerns about the EPA's document:

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1. The EPA is imposing a 'post-restoration' requirement when *ALL* restoration (that would include this idea of 'post restoration') is covered by NRC regulations. To reiterate, 'post-restoration' requirements are contained in proposed, not approved, regulation.

2. Referring again to Table 13, containing 45 contaminants (to be at baseline, without consideration of MCL's), is an overreach of authority knowing the NRC addresses contaminants in 10 CFR Part 40, Appendix A, Table 5C *maximum values for groundwater protection*. (By the way, even in EPA's proposed rulemaking for 40 CFR §192, (January 19, 2017) the EPA reduced the number of contaminants down to 12, therefore this EPA draft permit exceeds its own proposed regulation.)

3. The EPA has added these requirements without a clear understanding of the risks or benefits of implementation and even acknowledges ISR doesn't inject waste per the Draft Aquifer Exemption ROD statement "*waste fluids are not being injected into the exempted portion of the aquifer*". Therefore, since waste isn't being injected the risk of contamination is very low. Additionally, considering the draft permit requirements mimic EPA's proposed revisions for 40 CFR §192, a review of rulemaking shows the EPA acknowledges,

   "the Agency does not have sufficient information to document a specific instance of contamination of a public source of drinking water caused by an ISR."

   And further states,

   "*the EPA is unable to quantify the potential benefits*."

In conclusion, it is Energy Fuels opinion that EPA should revise the draft permit with conditions that are limited to those requirements specifically described in 40 CFR §144.33. EPA should remove any overlapping and/or additional restoration requirements that come under the purview of UMTRCA and NRC. Nor should the draft permit contain requirements currently in the rulemaking process, and EPA should rely on the rulemaking process to determine the requirements of the final rule.

Energy Fuels appreciates the opportunity to comment on the Dewey-Burdock uranium in-situ recovery (ISR) draft UIC Class III Area Permit.

Sincerely,

(on behalf of William P. Goranson)

William Paul Goranson,
Executive Vice President ISR Operations
Uranerz Energy Corporation (an Energy Fuels Company)

WG/dk

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5-9-17

May 9, 2017 testimony

Dear Judge Sutton and EPA officials:

My name is Gena Parkhurst and I live in Rapid City. Yesterday I mentioned a Resolution passed by the Rapid City Common Council. Today I'd like to read the full text for the record:

RESOLUTION NO. 2013-083

A RESOLUTION EXPRESSING GRAVE CONCERN ABOUT THE IN SITU MINING OF URANIUM BY

POWERTECH IN CUSTER AND FALL RIVER COUNTIES.

WHEREAS, Powertech Uranium Corp. has submitted applications to the South Dakota Water Management Board for permits to use water from the Madison and Inyan Kara Aquifers to conduct in situ mining of uranium in Custer and Fall River Counties in the Black Hills of South Dakota; and

WHEREAS, In situ mining, or in situ recovery involves pumping solutions incorporating water from the aquifers into an ore body through wells which will then circulate through the porous rock and recovering the minerals from the ground by dissolving them and pumping the solution containing the ore to the surface where the minerals can be recovered.

WHEREAS, hearings on Powertech's water permit applications will be held by the South Dakota Water Management Board in Rapid City at the beginning of October of 2013; and

WHEREAS, the City of Rapid City obtains a majority of its drinking water from the Madison Aquifer; and

WHEREAS, the safety of the water in the Madison Aquifer is of utmost importance to the City of Rapid

City; and WHEREAS, due to the unanswered questions regarding the safety of the community's water supply, the Common Council of the City of Rapid City believes that the proposed in situ mining of uranium in the Black Hills poses an unacceptable risk to the primary source of Rapid City's drinking water.

NOW THEREFORE, BE IT RESOLVED, by the City of Rapid City that due to the potential risk to the Madison Aquifer the City expresses grave concern about the proposed in situ mining of uranium in the Black Hills.

Dated this 19th day of August, 2013.

CITY OF RAPID CITY

s/ Sam Kooiker

Mayor

ATTEST:

s/ Pauline Sumption

Finance Officer

(SEAL)

Thank you for listening.

Dr. Hannan E. LaGarry
[redacted]

June 19, 2017

BY EMAIL
Valois Shea (shea.valois@epa.gov)
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver CO 80202-1129

Re: SUPPLEMENTAL WRITTEN TESTIMONY on the potential adverse effects of the proposed Powertech/Dewey-Burdock project.

Dear Sir or Madam:

The undersigned, Dr. Hannan E. LaGarry, an individual, residing at [redacted], [redacted], hereby provide the following SUPPLEMENTAL WRITTEN TESTIMONY to the above-referenced draft permits and documents related to Powertech/Dewey-Burdock. These written comments are provided in addition to the written testimony provided at the original hearing in Hot Springs SD on 10 May 2017.

Introduction

I have served as an expert witness for uranium intervenors since 2008, and have provided numerous expert written expert testimonies for both the Crow Butte Resources (CAMECO) and Dewey-Burdock (POWERTECH/AZARGA) ISL uranium license interventions. I am a stratigrapher and geologic mapper with 30 years of experience working in the geology of SW South Dakota and adjacent NW Nebraska. A copy of my CV is attached at the end of this testimony to establish my credentials in this proceeding.

In my initial testimony I provided the data we recovered from our examination of Powertech's belatedly disclosed borehole data purchased from the Tennessee Valley Authority (TVA). Within this data we observed that the drillers of the TVA boreholes documented uncased holes, improperly plugged holes, artesian water, breccia pipes and caves, and faults. In my expert opinion, secondary porosities in the Dewey-Burdock area are such that loss of containment and the escape of pressurized fluids from underground waste injection are almost a certainty should either mining or injection be allowed. In this document, I will briefly outline my concerns with respect to this inevitable loss of containment: existing flow direction and water quality within the Minnelusa Aquifer.

Flow Direction in the Minnelusa Aquifer

During the hearings there was much discussion about whether or not groundwater within the Minnelusa Aquifer flowed west, east, or not at all. Based on groundwater flow mapping by the United States Geological Survey (Driscoll and others 2002), water in the vicinity of the Dewey-Burdock site flows S/SE along the southern edge of the Black Hills, and once into greater Fall River County, groundwater flow is due east (Figure 70 – black arrow showing dominant flow direction was added by me). This report makes no mention of a groundwater divide or other circumstance that would indicate isolation of groundwater within the Dewey-Burdock vicinity.

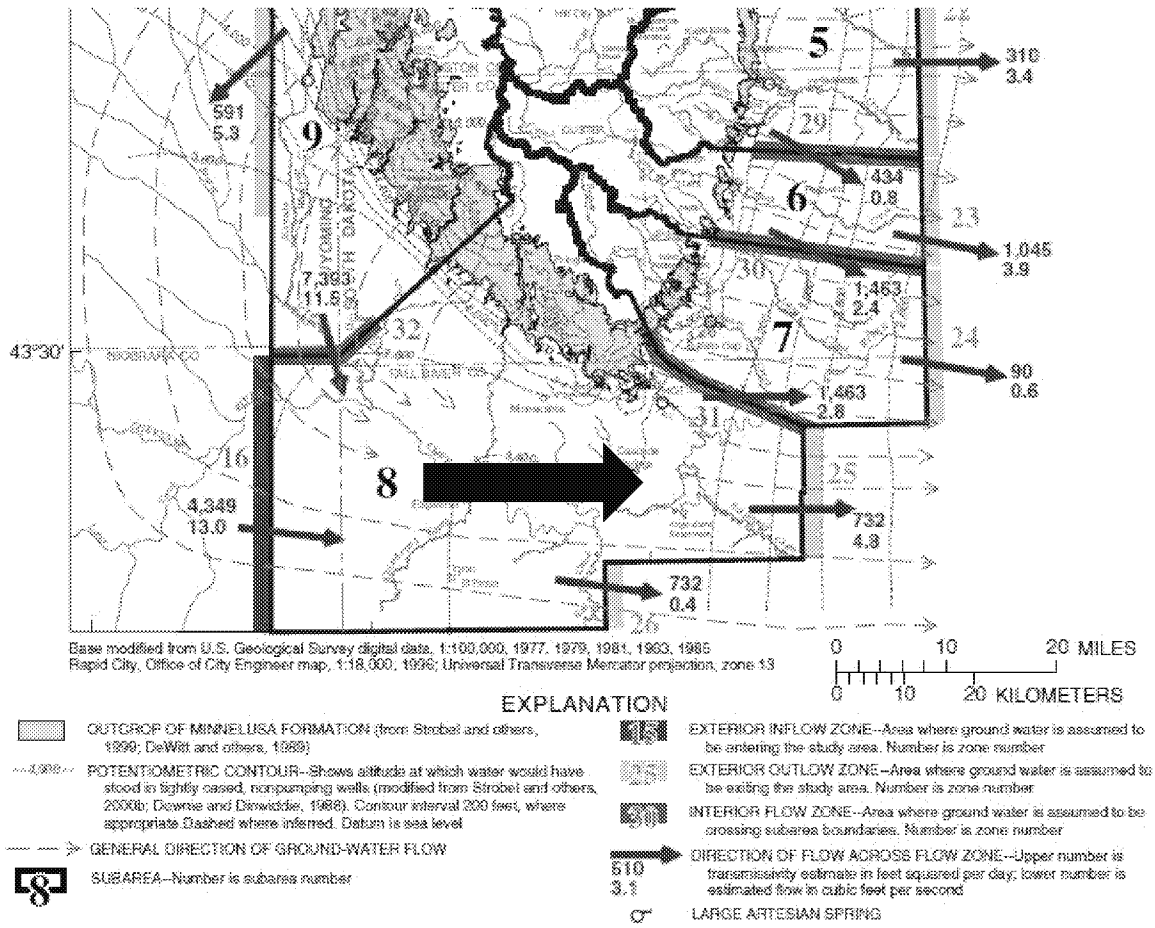

Figure 70. Subareas, generalized ground-water flow directions, and flow zones for the Minnelusa aquifer. Estimated transmissivities and flow components for flow zones also are shown (from Carter, Driscoll, Hamade, and Jarrell, 2001).

Figure 70 shows that while groundwater flow north of Dewey-Burdock may initially be to the SW into Wyoming, this flow path quickly corrects to southward and then eastward flow. The flow from north of Dewey-Burdock to the SW has been measured at 591 feet/day, but flow south of the site has been measured at 7,393 feet/day. Once eastward flow is established, its been measured at 4,349 feet/day to the east at the SD-WY state line, then 1,463 feet/day to the east in northern Fall River County and 732 feet/day to the east in central and southern Fall River County. On average, flow from Dewey-Burdock towards Edgemont, Hot Springs, Buffalo Gap,

Oelrichs, and the western border of the Pine Ridge Reservation is about 3,484 feet/day. The Pine Ridge Reservation (Oglala Lakota County) is 46 miles from the Dewy-Burdock site, which means contaminated water from Dewey-Burdock could travel to the Pine Ridge Reservation in 70 days. Edgemont would be affected in weeks, and Hot Springs would be reached in as little as 35 days.

Water Quality in the Minnelusa Aquifer

I've attached a recent groundwater test from Minnelusa Aquifer from the Hot Springs area (see following pages). Based on EPA's criteria for aquifer exemptions:

§146.4 Criteria for exempted aquifers.

An aquifer or a portion thereof which meets the criteria for an "underground source of drinking water" in §146.3 may be determined under §144.7 of this chapter to be an "exempted aquifer" for Class I-V wells if it meets the criteria in paragraphs (a) through (c) of this section. Class VI wells must meet the criteria under paragraph (d) of this section:

(a) It does not currently serve as a source of drinking water; and

(b) It cannot now and will not in the future serve as a source of drinking water because:

(1) It is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible.

(2) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical;

(3) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or

(4) It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or

(c) The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.

(d) The areal extent of an aquifer exemption for a Class II enhanced oil recovery or enhanced gas recovery well may be expanded for the exclusive purpose of Class VI injection for geologic sequestration under §144.7(d) of this chapter if it meets the following criteria:

(1) It does not currently serve as a source of drinking water; and

(2) The total dissolved solids content of the ground water is more than 3,000 mg/l and less than 10,000 mg/l; and

(3) It is not reasonably expected to supply a public water system.

(Clean Water Act, Safe Drinking Water Act, Clean Air Act, Resource Conservation and Recovery Act: 42 U.S.C. 6905, 6912, 6925, 6927, 6974)

[45 FR 42500, June 24, 1980, as amended at 47 FR 4998, Feb. 3, 1982; 48 FR 14293, Apr. 1, 1983; 75 FR 77291, Dec. 10, 2010]

The attached water test shows TDS and U levels below the secondary maximum contaminant levels established by EPA for potable drinking water. Based on these standards, the Minnelusa Aquifer sampled in this case is a valid source of drinking water, and, given that the USGS document cited earlier does not recognized barriers to water flow within the aquifer, the Minnelusa Aquifer is ineligible for an aquifer exemption, and this residents potable water supply may be jeopardized by uncontained injected waste.

Concluding Remarks

If the injection permits are allowed to forward, its very likely that there will be leaks, and contaminants will adversely affect drinking water supplies in Fall River County

References

Driscoll, D. G., J. M. Carter, J. E. Williamson, and L. D. Putnam. 2002. Hydrology of the Black Hills Area, South Dakota. United States Geological Survey Water-Resources Report 02-4094, 150 pp.

Signature

The information contained herein is true and correct to the best of my knowledge at the time of this writing on 19 June 2017.

Dr. Hannan E. LaGarry
[redacted]

MIDCONTINENT
TESTING LABORATORIES, INC.

2381 South Plaza Drive P.O. Box 3388 Rapid City, SD 57709
(605) 348-0111 -- www.thechemistrylab.com

Sample Site: Acter 605-745-6366
Project Name: Dewey Burdoc / Hot Springs
Sampled: 06/14/17 at 01:45 PM by Linsey McLean
Sample Matrix: Water

LINSEY MCLEAN
COUNCIL FOR RESPONSIBLE MINING
[redacted]

Lab ID#: 20170615207
Received: 06/15/17 at 08:00 AM by Dean Aurand
Account: 8766 - Council for Responsible Mining

Parameter	Result	Units	DF	MDL	PQL	Method	Analyst	Date
Physical Properties								
Total Dissolved Solids	223	mg/L	100ml	18.1	50.0	SM 2540 C	ELR	06/15/17
Non-Metallics								
Nitrogen, Nitrate (NO3)	0.471	mg/L	1	0.008	0.050	SM 4500-NO3 F	BLL	06/16/17
Sulfate (SO4)	31.4	mg/L	1	0.531	1.00	SM 4500-SO4 E	BLL	06/16/17
Metals - Total								
Antimony (Sb)	< 0.005	mg/L	10	0.00024	0.005	EPA 200.8	TNA	06/16/17
Arsenic (As)	0.014	mg/L	10	0.00047	0.005	EPA 200.8	TNA	06/16/17
Barium (Ba)	0.053	mg/L	10	0.00029	0.005	EPA 200.8	TNA	06/16/17

Report of Analysis for: **Council for Responsible Mining** Sample Site: **Acter 605-745-6366**

Quality Control Data

Parameter	Result	Limits	DF	Method	Analyst	Date
Total Metals - Internal Std						
Germanium (Ge74)	94.5 %	(60.0 - 125.0) %	10	EPA 200.8 DRC	TNA	06/16/17
Indium (In)	93.9 %	(60.0 - 125.0) %	10	EPA 200.8	TNA	06/16/17
Lithium (Li)	97.5 %	(60.0 - 125.0) %	10	EPA 200.8	TNA	06/16/17
Scandium (Sc)	96.1 %	(60.0 - 125.0) %	10	EPA 200.8	TNA	06/16/17

Report Approved By:

Dean Aurand

Report Approved On: 6/16/2017 5:01:35 PM

Dr. LaGarry handed this document in May 10

OST-029

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the matter of	)	
	)	
POWERTECH (USA) INC.	)	Docket No. 40-9075-MLA
	)	ASLBP No. 10-898-02-MLA-BD01
(Dewey-Burdock In Situ Uranium	)	
Recovery Facility)	)	November 21, 2014

WRITTEN SUPPLEMENTAL TESTIMONY OF DR. HANNAN LAGARRY

I, Dr. Hannan LaGarry, hereby declare as follows:

1. I am an expert in the above-captioned proceeding; my testimony, CV, and area of expertise are already in the record. To summarize, I am a stratigraphic mapper and full-time professor at Oglala Lakota College in Kyle, South Dakota. In preparing this declaration, I relied on the expertise gained through my training and experience in reviewing and interpreting borehole logs and other geologic data to create and review narratives, representations, and maps of subsurface geology and hydrogeology.

2. My testimony herein is based on my review of Powertech's recently disclosed borehole logs, maps, and other data. My testimony is also based on my review of the testimony and exhibits submitted by both NRC Staff and Powertech to the Nuclear Regulatory Commission Atomic Safety and Licensing Board, and my expert opinions offered before and during the hearing in Rapid City, South Dakota.

3. On November 12, 14, and 15, 2014 myself and 3 student assistants continued to review drillers' notes and borehole logs prepared by the Tennessee Valley Authority and recently disclosed by Powertech. This review was conducted at the Powertech offices in Edgemont, South Dakota.

   The available data consists of paper files contained in 28 bankers' boxes, 5 file cabinets, and 31 sets of mini logs (reduced to about 1/10th of the full-sized logs). Based on records I reviewed during my initial visit to the Powertech offices on September 14-16, 2014 these boxes, cabinets, and mini logs contain ***at least***:

   7515 total borehole logs
   7454 known borehole logs prior to acquisition of the recently described data
   3920 borehole logs owned prior to acquisition of the recently disclosed data
   3075 digitized data logs

These totals may underreport the number of logs made available, as I was not able to confirm whether my count was inclusive of all logs made available. Our understanding was that the newly disclosed borehole logs numbered over 4,000 data sets.

In total, my assistants and I were able to review drillers' notes from 4,177 boreholes (56% of the 7515 listed above) in 2.5 bankers' boxes, with at least 2.5 bankers' boxes of similar records remaining unexamined. We also examined 488 full-sized (in 3 boxes) and 1774 "mini" resistivity and gamma log pairs (30% of the 7515 listed above), with at least 6 bankers' boxes and 5 file cabinets of similar records remaining unexamined. The number of notes and logs examined was likely 5% fewer than the total number of records reviewed because some logs and notes were discovered to be moved or missing (see below). Also, there is overlap between the drillers' notes and the "mini" borehole logs reviewed. The "mini" logs, although briefly reviewed, did not contribute to the observations listed below.

My review confirmed my previous testimony that the raw data was not presented by modern modeling I would expect to find in such data compilations. Because of the limited time available and the lack of modelling, we did not attempt to reconstruct the geology of the proposed license area. Rather, we focused on the first-hand accounts of the geology of the site and the drilling conditions recorded by the geologists logging the wells. Based on our review of the data, we documented the following unique instances:

140	open, uncased holes
16	previously cased, redrilled open holes
4	records of artesian water
13	records of holes plugged with wooden fenceposts
6	records of holes plugged with broken steel
12	records of faults within or beside drilled holes
1	drawing of 2 faults and a sink hole within a drilled transect
7	notations "do not record this value on drill hole maps"
2	notations "do not return this to landowner"
63	redacted borehole logs

Many notes contained references to water at various levels and poor, muddy, or destroyed samples. We also found that, in the data sets we reviewed, blocks of records had been moved or were missing.

4. Based on the observations noted above, I offer the following expert opinions:

Sample size
We examined drillers' notes from 4,177 boreholes, which is at least 56% of the available data. In my expert opinion, while this sample likely underrepresents the total number of features listed above, it is sufficiently large to characterize the data and to reasonably reflect the geological conditions in the licensed area. In contrast, the NRC review of 34 boreholes

constitutes less than 1% of the available data, grossly misrepresents the sample, and is not scientifically valid or useful in any meaningful way.

Open, uncased holes, including redrilled open holes
(Exhibit SNT25)
Casing of boreholes prevents the unwanted migration, transfer, and cross-contamination of water within a borehole. Uncased holes allow unrestricted communication between water-bearing strata at the site. Each uncased hole is a breach of the confining layers assumed to restrict the movement of mining fluids and contaminants. Redrilling of previously cased holes destroys the pre-existing casing and returns the borehole to the open, uncased condition. In my expert opinion, while it is possible that confinement may yet exist in undrilled areas, there is no reasonable expectation that confinement remains in drilled areas.

Artesian water
(Exhibits TRT44, ELT4)
Artesian water is water that flows under pressure exerted by connected waters at higher elevations. The presence of artesian water in the licensed area clearly demonstrates such connections, and that there is communication of water between the aquifers onsite and offsite. Artesian flow allows the rapid transfer of water along the subsurface conduits through which it flows, and greatly increases the likelihood of large amounts of highly contaminated subsurface water reaching the surface and contaminating it. In my expert opinion, artesian flow demonstrates a lack of containment at the site and poses a significant risk of unexpected, serious contamination of the Cheyenne River and its tributaries.

Plugged holes
Typically, boreholes are plugged with concrete. Plugs made of wood rot and disappear. Plugs made of ferrous metals, including steel, rust and disappear. It is my expert opinion that, for purposes of determining aquifer isolation, boreholes plugged in such a way should be considered open, uncased boreholes.

Faults and sinkholes
(Exhibits DS178 back side, DS392, IHK2, IHM32, IHM62, TRR17, TRT16, FBM95)
During hearings before the ASLB in August of 2014, Powertech repeatedly asserted that faults and sinkholes were not present in the license area, and that the license was somehow unique in that regard. In my previous testimony, I offered the expert opinion that faults were almost certainly present, and the license area was most likely crossed by numerous faults. The observations I document herein demonstrate that my previous expert testimony was correct, and there are numerous faults present in the licensed area. Likewise, the drillers' notes document a sinkhole along a drilled transect associated with two closely spaced faults also intersecting the drilled transect. Sinkholes typically form along faults, as the fault allows the initial penetration of acidic surface waters, which then dissolve a conduit through the rock which eventually forma a cave that subsequently collapses to for the sinkhole.

Suppression and redaction of data
(Exhibit TRJ111)
Notations in the drillers' notes to withhold data imply that there was an attempt to deceive somebody about the character of particular boreholes. The possible motivation for withholding the data was not clear from our limited review in these instances. More troubling is the deliberate masking (redaction) of borehole log data. This information may not be recoverable without additional drilling adjacent to the original borehole, and is clear evidence that information was withheld for some reason. As in the previously mentioned withholding of data, what this is and why it was withheld cannot be determined. A competent and complete scientific review upon which a determination could be based that containment of mining solution can be achieved at the Dewey-Burdock property would account for this missing data.

Water in boreholes
The presence of water at various levels in the drill holes suggests that there are multiple aquifers present at the site, and in the case of uncased holes, open communication and unrestricted flow between water-bearing strata at the site.

Poor, muddy, and destroyed samples
Problems with samples can bias rock descriptions and create circumstances in which the confining units would be misidentified, leading to miscorrelations of strata and confining layers considered present when in fact they are not. In order to determine if miscorrelation or false identifications have occurred would require detailed redescription of the available data. In my expert opinion, conclusions based on such samples, such as the presence or absence of a confining layer, should remain tentative at best.

Moved or missing data
The amount of moved or missing data and its significance is difficult to ascertain from our brief review. It may have been extracted from the set it is part of and relocated to another box, withheld, or destroyed. Only a thorough review and inventory can determine the disposition of the missing data. A review of this data is necessary to form concrete conclusions as to the confining properties of the geological strata.

5. In conclusion, the numerous records of open holes, artesian water, faults, and sinkholes. My prior testimony and opinions regarding Contentions 2 and 3 are supported by the observations recounted here.

6. It is my further expert opinion that NRC-directed "spot check" of 34 borehole logs from somewhere between 1750 and 6000 available borehole logs does not provide a scientifically recognized analysis that can support any hydrogeological conclusion about the project area. In my professional experience, there are numerous methodologies for analyzing the raw data contained in borehole logs. There are also numerous methodologies for presenting the results of the analysis of the raw data. Modern methods typically result in GIS/three-dimensional visualization and modeling of systems or similar computer modelling based on the raw data

in borehole logs. A copy of the website is attached to confirm the widespread and accepted use of these methodologies within the profession.

7. A "spot check" of borehole logs is not proper where analysis has not been carried out and recorded by GIS/three-dimensional visualization and modeling or similar technique. The NRC Staff testimony indicates that Powertech has not conducted the necessary mapping of available data. In such a circumstance, NRC Staff's conclusions are not reliable where NRC Staff accepts assertions of scientific fact made by Powertech that are not supported by accepted methodologies used to review data in borehole logs.

8. The NRC Staff testimony makes no mention of the information contained in the drillers' notes. Drillers' notes are an important source of interpretive information, often revealing information not disclosed by sliding logs. For example, drillers' notes can reveal the location of caves, artesian water, and the intermittent absence of confining layers. Although my review is not complete, the drillers' notes I have reviewed do contain this type of information.

9. The NRC "spot check" of 34 data points does not provide a statistically reliable testimony or basis for any conclusions regarding confinement or hydrology. I teach various math and statistics courses at Oglala Lakota College. Multivariate statistics is one of the formal research tools required for my PhD in Geology from the University of Nebraska-Lincoln. I am charged with review of research students at OLC who frequently apply statistical methods in their capstone research sequence required for their BS in Natural Science. NRC Staff's "random" analysis lacks the basic safeguards applicable to those who would rely on statistical methods.

10. The minimum number of data points for a statistically valid and meaningful sample is generally 10%. In the Powertech instance the minimum acceptable sample size would be a randomly selected sample of at least 175 borehole logs. Based on the recent disclosure of over 4,000 previously withheld borehole logs, the appropriate sample would be 10% of the entire set, or about 575+ borehole logs checked. NRC Staff presents no basis for its so-called "random" selection. Without such information, professionals in my field cannot accept such assertions where it is possible that the limited data set resulted in poor methodology that is the hallmark of modern junk science. Having examined only 37 data points out of thousands available, NRC would have failed my Math 123 Introduction to Statistics class. None of my student researchers would be allowed to publish or present their research findings had they made such a fundamental error.

11. In my experience and training, NRC Staff's methodology is fundamentally flawed and the testimony based on the NRC Staff's review cannot be relied upon for any legitimate scientific purpose.

12. Although I relied on student assistants as appropriate, the testimony and opinion provided herein are based on my direct professional review and personal knowledge. Any errors or misinterpretations of data herein are exclusively my own.

I declare under penalty of perjury that the foregoing is true and correct of my own knowledge. Executed in accord with 10 CFR 2.304(d).

Executed in Chadron, Nebraska on November 21, 2014

Hannan E. LaGarry, Ph.D.

Shea, Valois

From:	Jennifer Bear Eagle [redacted]
Sent:	Monday, June 19, 2017 3:28 PM
To:	Shea, Valois
Cc:	Trina Lone HIll; Jeffery C. Parsons; ostnrrawrd@gwtc.net; suzym@oglala.org; Tiger Brown Bull; Anne Eagle Bull - OST President- PZ [redacted] president.weston@oglala.org; Russell Zephier
Subject:	Oglala Sioux Tribe comments re Dewey-Burdock
Attachments:	2017-06-19 OST Comment Letter re Dewey-Burdock with Addendum (final signed).pdf; OST Ordinance 11-10.pdf; OST Ordinance 07-40.pdf

Please find attached comments from the Oglala Sioux Tribe regarding the Dewey-Burdock Class III and Class V UIC draft area permits. These comments includes a letter and addendum. Copies of OST Ordinance No. 07-40 and Ordinance No. 11-10 are also included. There are several attachments to the addendum and referenced therein. These attachments are submitted in a separate email.

Please let me know if you have any trouble opening the attached documents.

Thank you,

Jennifer Bear Eagle, In-House Counsel
Executive Director's Office
Oglala Sioux Tribe
P.O. Box 2070
Pine Ridge, SD 57770
[redacted]

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AUC LLC
The Reno Creek Project

June 19, 2017

Valois Shea
U. S. Environmental Protection Agency
Underground Injection Control Program, 8WP-SUI
1595 Wynkoop Street
Denver, CO 80202-1129

Re: Comments on Dewey-Burdock Draft Class III Area Permit

Dear Ms. Shea:

AUC LLC, a holder of an NRC Source and By-Product Materials License and of a Class III UIC Permit and Aquifer Exemption for Uranium Mining, hereby objects to the unprecedented and unwarranted new requirements the Environmental Protection Agency (EPA) is proposing for the Dewey-Burdock ISR operation. In addition to not being supported by the statute, regulations, or long-standing agency guidance, EPA has not provided any scientific or factual justification for the imposition of these new and costly requirements.

Over the past 7 years, AUC studied in detail all of the Class III permits issued for uranium ISR operations in the U.S., in preparation for its own application to the State of Wyoming (approved and authorized by EPA). Nowhere in any of the previous Class III permits was there such conditions and obligations listed. The most fundamental problem is that the draft permit fails to identify any data, evidence, or analysis that justifies such increased monitoring or other activities before, during or after mining.

The absence of such analysis, in the context of a more than 30 year history of ISR operations is vivid and compelling: both the NRC and the State of Texas have publicly stated after extensive investigation that no off site underground sources of drinking water have ever been contaminated by ISR mining of Uranium.

We summarize below our most substantial concerns:

- Conduct post-restoration groundwater monitoring for each wellfield after the Nuclear Regulatory Commission (NRC) approval that groundwater restoration has been successfully completed;
- Install a new down-gradient compliance boundary monitoring well network for each wellfield inside of that currently required by NRC license requirements and quarterly sampling to determine initial baseline values;
- Collect core samples prior to operations, storing these for years and then testing these in "pass/fail" laboratory column tests, where a single constituent measured above background concentration would signal a failed test;

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- Additional monitoring and corrective action requirements for an excursion detected in a non-injection interval monitoring well beyond those reviewed and approved by NRC; and
- Additional monitoring and corrective action requirements for an "expanding excursion plume" and a "remnant excursion plume", despite citing no evidence that these have occurred at an ISR facility.
- The conditions are also highly prescriptive, being focused on nuts and bolts activities rather than creating successful outcomes in uranium mining and restoration of ground water. This creates a strong disincentive to innovation and research currently being carried out by the uranium industry and academia, some with EPA funding.

It also appears that Region 8 is attempting to apply standards similar to those included in a revised proposed rule issued by the EPA in January 2017 – Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings (82 FR 7400). That rulemaking is not finalized and the comment period is still open. The EPA previously issued and later withdrew a substantially similar proposed rule. It is inappropriate for Region 8 to create wholly new requirements in a draft permit that have no approved basis in regulation, and should be excluded.

We urge Region 8 to revise the draft permit in light of the above, and issue the Permit in a form that is scientifically justified and in line with the existing rules and regulations.

Sincerely,

Jim Viellenave
President
AUC LLC

COLORADO OFFICE
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TEL: 866.981.4588
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Comments from Ur-Energy Inc. and its Subsidiaries on Draft Area UIC Class III Permit No. SD31231-00000, Dewey-Burdock Uranium In-Situ Recovery Project

Ur-Energy, whose scientists and engineers have decades of experience permitting, constructing, operating, and reclaiming in situ uranium mines, provide the following general and specific comments on the Draft UIC Class III Area Permit for the Dewey-Burdock Project.

General Comments

Ur-Energy is concerned that despite decades of successful regulation of in situ uranium mining by various states and the Nuclear Regulatory Commission ("NRC"), the EPA has elected to devise a new regulatory scheme for the Dewey-Burdock Project. The new and unprecedented requirements include:

- Conducting post-restoration groundwater monitoring for each wellfield after NRC approval that groundwater restoration has been successfully completed;
- Installing a new down-gradient compliance boundary ("DGCB") monitoring well network for each wellfield inside of that currently required by NRC license requirements;
- Collecting core samples prior to operations and testing these in "pass/fail" laboratory column tests, where a single constituent measured above background concentration would signal a failed test;
- Quarterly groundwater sampling from the DGCB monitoring wells to establish initial baseline values before injection begins in the wellfield;
- Additional monitoring and corrective action requirements for an excursion detected in a non-injection interval monitoring well beyond those reviewed and approved by NRC;
- Additional monitoring and corrective action requirements for an "expanding excursion plume;" and
- Additional monitoring and corrective action requirements for a "remnant excursion plume"

The EPA's attempt to create a new regulatory approach seems to be based largely on concerns that post restoration residual contaminates will damage USDWs. We are certain the EPA is aware of the 2009 NRC staff memorandum to the Commission in which they stated they were unaware of any situation indicating that: (1) the quality of groundwater at a nearby water supply well has been degraded, (2) the use of a water supply well has been discontinued, or (3) a well has been relocated because of impacts attributed to an ISR facility. Similar statements can be found in other NRC documents as well as from the Texas Commission on Environmental Quality ("TCEQ"). Comments by these experienced agencies who operate under mandates to protect the environment should be carefully considered by the EPA when the agency attempts to justify new and burdensome permit conditions.

Some may justify the onerous conditions in the draft permit by arguing that no groundwater problems have been found because we haven't looked long enough or hard enough. This argument is short on technical merit and shouldn't be given serious consideration by a science driven agency such as the EPA. If, however, despite a lack of credible evidence the EPA believes USDWs are being negatively impacted by in situ uranium mining, the agency should fund research to verify and define the problem instead of drafting permit conditions based on unsubstantiated concerns.

In conclusion, we strongly encourage the EPA to remove all unprecedented permit conditions and consult with the NRC and states to develop a draft permit that is consistent with long-standing regulatory practices that have proven to be protective. Failure to do so will place Powertech, as well as any future in situ uranium mines in South Dakota, at a distinct disadvantage while providing no known benefit to the environment.

Specific Comments

1. Part I Section B, pg.2. The first paragraph references 40 CFR §147.2100 which pertains to Class II wells in South Dakota. It appears the reference should be to §147.2101 which discusses EPA's authority with respect to Class III wells.
2. Part II, Section A, pg. 6. Requires wellfields to be at least 1,600 feet from the Permit Area boundary (0.3 miles). The determination of this distance seems arbitrary and is overly restrictive while providing little or no benefit. We believe this distance sets an unreasonable precedent that will likely prevent the complete recovery of mineral resources at future mines. A science based approach to determine this distance is in order. We suggest the EPA work with the proponent to determine an appropriate minimum distance between the wellfields and the permit boundary that is protective of surrounding USDWs (with sound technical justification consistent with requirements of the NRC and other states) while at the same time allowing for recovery of the majority of the resource.

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3. Part II Section E(2)(b)(i)(A), PG. 13. Requires the use of Low-Stress (Low Flow) purge/sampling methods. We believe this is too prescriptive for a Class III permit; especially since there are other EPA approved methods for purging of wells which may be more appropriate based on the circumstances. Did EPA consider that some wells may be too deep to be sampled utilizing this technique (this type of pump relies on air pressure to push the water to the surface and there are practical limitations on air compressors as wells as this type of pump)? We suggest replacing this language with a statement that requires the Permittee to sample wells using any appropriate EPA approved method. Further to this discussion, section (C) requires purging three to six casing volumes if stabilization doesn't occur prior to sampling. If a Low-Stress (Low Flow) pump is used to purge three to six casing volumes, it could take an inordinate amount of time to sample a well. For example, a common low flow pump advertised on-line has a maximum pump rate of 100 ml/min. If a monitor well has 230 gallons per casing volume it would take over 400 hours to purge three casing volumes utilizing the low flow pump.
4. Part II Section E, Table 8, pg. 14. This table lists a total of 45 parameters, several of which are not typically found in this geologic setting or are typically not found at levels of concern. We urge the EPA to remove the following parameters from Table 8 or require only one round of analysis to demonstrate the ions aren't present in baseline conditions (Aluminum, Antimony, Beryllium, Boron, Fluoride, Mercury, Nickel, Silver, Strontium, Thallium and Thorium). We suggest the EPA review the list of parameters that NRC requires in Table 2.7.3-1 of NUREG 1569 (also see language immediately above Table 2.7.3-1 that discusses the selection of parameters). Table 8 in the draft permit should more clearly specify if the analysis is to be performed for particulates or dissolved fraction. Finally, the EPA should clarify that gross alpha excludes both radon and uranium in accordance with drinking water MCLs.
5. Part II Section G. It appears the EPA is attempting to establish an experimental method to demonstrate downgradient waters won't be negatively impacted by residual contamination. However, the core testing described in this section is fraught with technical problems that will likely render the results meaningless. For example, it is not reasonable to draw conclusions based on testing a relatively finite sample for a finite period of time. Instead of attempting to develop an experimental method with no previous field verification, we recommend this entire section be deleted. In its place, EPA should rely on geochemical modeling, perhaps based in part on data collected from core samples, to ensure that any residual contamination of concern, if it exists, will not harm downgradient USDWs. We recommend that the EPA consider the NRC's and state's approaches to this matter since they have many decades of experience successfully regulating in situ mines.
6. Part IV. We are concerned that the EPA is attempting to develop a down-gradient monitoring scheme that is inconsistent with requirements currently implemented by any state program or by the NRC. We wonder why the EPA feels the need to implement such onerous standards when we know of no evidence that such drastic measures are warranted; even though commercial in situ mining has been utilized in the U.S. since the mid 1960's. We strongly encourage EPA to delete this entire section and consult with the various states who have primacy as well as the NRC to determine a course of action that is commensurate with the

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hazard. Implementation of this section will, in our educated opinion, significantly harm the economics of in-situ mining in the state of South Dakota.

7. Part V, Section E(4), pg. 33 requires 120% of the calculated volume be used. This statement isn't clear since I assume the EPA isn't requiring the cement be forced with pressure into the open hole. We assume the statement means the permittee must prepare at least 120% of the calculated volume. This practice will result in the waste/disposal of cement. We encourage the EPA to allow the permittee to prepare 100% of the calculated volume. Any remaining void should be top filled after the cement has cured.
8. Part VII, Section C(4)(d) states the permittee may use air to induce pressure during an MIT. Instead of using "air" we suggest the permittee be allowed to use "compressed gas" which could include air.
9. Part VIII, Section F(4)(b)(i), page 44, requires the water level at the perimeter monitor wells be consistently lower than baseline levels to demonstrate hydraulic control. While it is possible to generally maintain the water level at these measurement points lower than baseline, it will be impossible to keep the water levels below baseline values "consistently." For example, if a single downhole pump breaks down, a resulting pressure wave will quickly migrate out to the monitor well ring and could cause the local water level to temporarily exceed baseline. A temporary pressure wave like this does not indicate that hydraulic control has been lost. However, extended time periods with elevated water levels is an indication that hydraulic control has been lost or may be lost. We recommend the wording be changed to either require a specified percent bleed rate (typically 0.5 to 1%) or allow the permittee a specified time to bring the water level below the baseline level (on the order of one week).

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Shea, Valois

From: John Cash [redacted]
Sent: Wednesday, June 14, 2017 7:48 AM
To: Shea, Valois
Subject: Comments on Dewey-Burdock UIC Class III Draft Area Permit (SD31231-00000)
Attachments: UR-Energy Comments on Draft UIC Class III Permit.doc

Dear Valois,

Please find attached comments from Ur-Energy Inc. and its subsidiaries on the UIC Class III Draft Area Permit for the Dewey-Burdock project. We hope that you will find our comments objective and helpful in the development of the permit. If you have any questions please don't hesitate to call.

Regards,

John W. Cash
Vice President of Regulatory Affairs
Ur-Energy Inc.
[redacted]

ED_005364K_00000157-00252

May 19, 2017

Valois Shea
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80202-1129

RE: Comments for Dewey-Burdock Class III and Class V UIC Permits and Aquifer Exemption

Dear Ms. Shea:

Please accept these comments on behalf of Native Research Solutions (NRS). Native Research Solutions (NRS) is an Indigenous-led organization that provides legal research to grassroots communities working on social justice and human rights issues. NRS specializes in Federal Indian Law, Environmental Law and Water Law. NRS is dedicated to supporting and working with communities impacted by natural resource exploitation, racial discrimination, and other social injustices. NRS works with communities to protect the health and livelihood of the people, the environment, sacred sites, and water resources. NRS works with tribal governments and organizations to assert tribal sovereignty and fulfill tribal self-determination. NRS stands in solidarity with the Lakota Nation and other tribes in enforcing treaty rights and protecting sacred sites.

Currently, the EPA does not have all the necessary data to make a thoughtful, well-planned decision on these permits. The impacts of past drilling and improperly plugged boreholes and how ISL mining will further impact these boreholes is largely unknown. Cultural data, including archaeological and burial sites, need to be inventoried in order to ensure sites are protected. Making a decision on the permits and exemption now without the necessary data is unwise and premature. Proceeding with the permits before all the information is available denies the public a meaningful opportunity to participate and be heard.

Every other UIC mine in the country is governed by an individual state regulatory scheme. This is the first time EPA is directly permitting and regulating a UIC mine. EPA has neither the specific regulations nor the expertise to permit the UIC mine. In this instance, the EPA should tread especially carefully and create a thorough process in order to best protect the environment and communities EPA serves.

NRS joins the tribes, the local communities, farmers and ranchers, and environmental and social justice organizations in asking the EPA to deny the UIC permits and deny the requested aquifer exemption. Given the recent history and the events that occurred in Standing Rock regarding the Dakota Access Pipeline, it is incumbent on the EPA to adhere to the most open and inclusive process, providing the public with all information necessary to provide a meaningful opportunity to be involved in matters most intimately impacting our lives.

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I. The Class III and Class V UIC Permits Should Be Denied Because Contamination from ISL Mining Operations is Certain and Irreversible.

While touted by the uranium industry as "advanced"[1] technology, ISL mining has been used in the U.S. and around the world since the 1960s.[2] The process of ISL mobilizes uranium that would otherwise be locked in place and releases it into the groundwater. Through this process, the ISL method purposefully contaminates groundwater by mobilizing uranium into the groundwater that would otherwise have been held captive in the bedrock.[3] Meanwhile, contamination from the mines and impacts on the underlying aquifers would last long after the Dewey-Burdock mining operations ended.

Communities in the area are concerned that impacts to their groundwater source may be irreversible, as has been the case in other places that have experienced ISL mining. Texas has the greatest number of *in-situ leach* uranium mines in the U.S.[4] Uranium Resources, Inc. owns the Kingsville Dome uranium mine in Texas where contamination from an ISL mine has spread throughout the aquifer to nearby drinking wells.[5] According to a USGS study that studied the effectiveness of groundwater restoration at ISL sites in Texas, more than half of the uranium production areas surveyed had higher levels of uranium in groundwater after mining and reclamation, than before mining began.[6] Equally important, all of the studied sites had received "amended restoration goals for at least one element after operators have expended a reasonable degree of effort to restore groundwater."[7] Amended restoration goals occur when a party is unable to restore the groundwater to the previously agreed-upon water standards. The experience in Texas confirms community concerns that restoring groundwater to a usable condition after mining is unlikely.

The NRC itself has conceded that restoring an aquifer to a pre-mining condition after ISL mining has ended is "virtually impossible".[8] The EPA has also stated, "Based on EPA's experience with other in-situ mining projects, EPA believes there is a high likelihood that, following mining activities, residual waste from mining activities will not remain in the

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[1] D.W. McCarn, Innovative Projects International, The Crownpoint and Churchrock Uranium Deposits, San Juan Basin, New Mexico: An ISL Mining Perspective 171 (2001).
[2] World Information Service on Energy Uranium Project, http://www.wise-uranium.org/uisl.html (last visited Oct. 25, 2016).
[3] Radiation Protection Division, US Environmental Protection Agency, Considerations Related to Post Closure Monitoring Of Uranium In-Situ Recovery Sites 18 (2014).
[4] Susan Hall, Groundwater Restoration at Uranium In-Situ Recovery Mines 1 (U.S. Geological Survey ed., 2009).
[5] George Rice, *Excursions of Mining Solution at the Kingsville Dome In-Situ Leach Uranium Mine*, 9 Austin Geological Society Bulletin, 2012-2013 at 18.
[6] *Id.* at 30.
[7] Susan Hall, Groundwater Restoration at Uranium In-Situ Recovery Mines 9 (U.S. Geological Survey ed., 2009).
[8] Bill von Till, NRC Regional Licensing Branch Chief, NRC Regulatory Commission meeting. Dan Kelley, *As Uranium Mines Closed, State Altered Cleanup Goals*, Corpus-Christi Caller-Times, Nov. 4, 2006, http://archive.caller.com/news/as-uranium-mines-closed-state-altered-cleanup-goals-ep-365758114-317145331.html.
http://www.i2massociates.com/Downloads/Kelley_story_ISL_restoration.pdf

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exempted area" and waste will travel throughout the aquifer.[9] These statements confirm community fears that certain and irreversible contamination will occur in the overlying and underlying aquifers which residents rely on.

The proposed mine and deep disposal wells are in an area that is documented to have faults, fractures, breccia pipes, and over 7,000 old boreholes that have not been properly plugged.[10] It will be impossible to contain mining fluids or waste liquids, and contamination of groundwater resources is certain. The problems of leaks and spills and contamination of water resources begin even before the mines close.

To Indigenous peoples, contamination of water also raises cultural concerns. To Indigenous peoples, water, in particular, holds special meaning and is regarded as a sacred element. Indigenous cultures all over the world recognize a simple predicate: water is life. Water is identified as the first medicine. It is the first environment in which we live while we are being carried in our mothers. It is an offering made in prayer ceremonies and is a spiritual being in and of itself. All of these factors should be considering in evaluating the requested permits.

II. The Proposed Aquifer Exemption Should Be Denied Because it is Inconsistent with the Purpose and Intent of the Safe Drinking Water Act.

The Safe Drinking Water Act (SDWA) was passed in 1974 and amended in 1996.[11] The purpose of the SDWA is to assure that drinking water sources meet minimum national standards for the protection of public health "to the maximum extent feasible."[12] The SDWA accomplishes its purpose of protecting drinking water supplies throughout the nation by setting national health-based standards for drinking water, creating barriers against pollution, providing grants to states to implement state drinking water programs, and by disseminating information to the public about water systems in their area and where their water comes from.[13] Standards for drinking water set "enforceable maximum contaminant levels for particular contaminants in drinking water."[14] Barriers against contamination include source water protection, treatment, distribution system integrity, and public information.[15]

It was Congress's intent that the SDWA be "liberally construed so as to effectuate the preventative and public health protective purposes of the bill."[16] Congress sought to protect not only currently-used sources of drinking water, "but also potential drinking water sources for the future."[17] Congress noted that contamination of potential drinking water sources should "not be

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[9] Letter from William Honker, Acting Director, Water Quality Protection Division, US EPA to Zak Covar, Exec. Dir., Texas Comm'n on Envtl. Quality (May 16, 2012) (on file with author).
[10] EARTHWORKS, http://org.salsalabs.com/o/676/p/dia/action4/common/public/?action_KEY=21716&tag=mining (last visited May 19, 2017).
[11] MARY TIEMANN, SAFE DRINKING WATER ACT: A SUMMARY OF THE ACT AND ITS MAJOR REQUIREMENTS, 1 (Congressional Research Specialists 2014).
[12] H.R. REP. NO. 93-1185, at 6455 (1974).
[13] U.S. ENVIRONMENTAL PROTECTION AGENCY, UNDERSTANDING THE SAFE DRINKING WATER ACT (U.S. EPA 2004).
[14] *Id.*
[15] *Id.*
[16] *Id.* at 6484.
[17] *Id.*

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permitted if there is any *reasonable likelihood that these sources will be needed in the future* to meet the public demand for drinking water and if these sources may be used for such purposes in the future."[18]

The SDWA creates the framework for the Underground Injection Control (UIC) program. The SDWA directs EPA to establish minimum requirements for control of underground injection processes in order to protect sources of drinking water.[19] The UIC program governs the ISL process.

An aquifer exemption allows mining activity to occur in groundwater that would otherwise be protected as a drinking water source. EPA promulgated rules for exempting aquifers from the SDWA in 1980.[20] The EPA allowed for the creation of aquifer exemptions so as not to severely limit certain types of energy production, such as ISL mining.[21] The EPA Administrator was given the authority to exempt certain underground sources of drinking water when those sources have "no real potential to be used as drinking water sources."[22] As of 2014, more than 4,000 exemption permits have been approved by EPA throughout the country.[23]

An aquifer meets the criteria for exemption if:

> (a) It does not currently serve as a source of drinking water; and (b) it cannot now and will not in the future serve as a source of drinking water because: (1) it is mineral, hydrocarbon or geothermal energy producing, or can be demonstrated by a permit applicant as part of a permit application for a Class II or III operation to contain minerals or hydrocarbons that considering their quantity and location are expected to be commercially producible; (2) It is situated at a depth or location which makes recovery of water for drinking water purposes economically or technologically impractical; (3) It is so contaminated that it would be economically or technologically impractical to render that water fit for human consumption; or (4) It is located over a Class III well mining area subject to subsidence or catastrophic collapse; or (c) The total dissolved solids content of the ground water is more than 3,000 and less than 10,000 mg/l and it is not reasonably expected to supply a public water system.[24]

In this case, Powertech is requesting the aquifer exemption under (a) and (b)(1). Subsection (a), requiring current use of an aquifer is clearly inconsistent with Congress's intent that aquifers be protected if it is reasonable they could be used in the future. Subsection (b)(1) is

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[18] *Id.* (emphasis added)
[19] 42 U.S.C. § 300h (2005).
[20] U.S. ENVIRONMENTAL PROTECTION AGENCY, https://www.epa.gov/uic/aquifer-exemptions-underground-injection-control-program#role_respon (last visited Oct. 26, 2016).
[21] Memorandum from Peter Grevatt, Director, Office of Ground Water and Drinking Water to Water Division Directors Regions I-X (July 24, 2014) (on file with author).
[22] 40 CFR 144.7. Consolidated Permit Regulations, 45 Fed. Reg. 33, 290 (May 19, 1980).
[23] Memorandum from Peter Grevatt, Director, Office of Ground Water and Drinking Water to Water Division Directors Regions I-X (July 24, 2014) (on file with author).
[24] *Id.* at § 146.4.

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similarly inconsistent with Congress's intent that water sources be protected, regardless of whether there are economically valuable minerals in the aquifer.

III. The Federal Government Has a Legally-Recognized Federal Trust Responsibility to Protect Native American Sacred Sites.

While the necessary cultural data still needs to be collected and analyzed and the granting of the mine permits is premature without this cultural data, one thing is certain- the federal government has a trust responsibility to protect Native American sacred sites. The National Historic Preservation Act, the Native American Graves Protection and Repatriation Act, the Religious Freedom Restoration Act, and Executive Order No. 13007 all offer protections for Native American sacred sites and weigh in favor of denying the permits.

The federal government and Indian tribes have a unique legal relationship, known as the trust relationship, in which the federal government has legal obligations and duties to Indian tribes.[25] This trust relationship requires the federal government to protect the property and resources of Indian tribes, including rights to water and protection of sacred sites.[26] Here, there is no doubt that the proposed mining project would impact Indian people and communities.

EPA itself has taken a broad view of the role of tribal governments in policy decision-making. In the EPA Policy for the Administration of Environmental Programs on Indian Reservations, the EPA states, "the Agency will view tribal governments as the appropriate non-federal parties for making decisions and carrying out program responsibilities affecting Indian reservations, their environments, and the health and welfare of the reservation populace."[27] In addition, EPA states it will "look directly to Tribal Governments to play this lead role for matters affecting reservation environments."[28] Here, the proposed permits significantly impact tribal communities and resources. EPA should adhere to its own policy and follow the lead of the tribe. The tribe has been clear in its position and its opposition to uranium mining in the sacred Black Hills.

The Black Hills, known as *Paha Sapa* to the Lakota, are the center of their spiritual and cultural universe. To the Lakota, throughout all of Creation, *Paha Sapa* has been "The Heart of Everything That Is." Lakota medicine man Pete Catches, describes the relationship between *Papa Sapa* and the Lakota:

> To the Indian spiritual way of life, the Black Hills is the center of the Lakota people. There ages ago, before Columbus came over the sea, seven spirits came to the Black Hills. They selected that area, the beginning of sacredness to the Lakota people . . . The seventh spirit brought the Black Hills as a whole--brought it to the Lakota

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[25] *See* Felix S. Cohen, Handbook of Federal Indian Law § 5.04[4][a] at 418-422 (2005).
[26] *Id.*
[27] Environmental Protection Agency, *EPA Policy for the Administration of Environmental Programs on Indian Reservations (1984 Indian Policy)*, https://www.epa.gov/sites/production/files/2015-04/documents/indian-policy-84.pdf.
[28] *Id.*

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> forever, for all eternity, not only in this life, but in the life hereafter. The two are tied together. Our people that have passed on, their spirits are contained in the Black Hills. This is why it is the center of the universe, and this is why it is sacred to the Oglala Sioux. In this life and the life hereafter, the two are together.[29]

Many sites are sacred because it is a location where an event of great spiritual significance occurred. The late Native American scholar Vine Deloria, Jr. writes, "Tradition tells us that there are, on this earth, some places of inherent sacredness, sites that are Holy in and of themselves."[30] Vine Deloria, Jr. writes, "Every society needs these kinds of sacred places. They help to instill a sense of social cohesion in the people and remind them of the passage of the generations that have brought them to the present. A society that cannot remember its past and does not honor it is in peril of losing its soul."[31]

The EPA should deny the permits because environmental justice policy requires nothing less. The EPA should deny these permits in order to restore relationships with tribal communities and in recognition of the long history of environmental racism towards Native American communities as they have endured the burdens of energy production for this country.

The EPA defines "environmental justice" as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." Here, fair treatment and meaningful involvement of Indian tribes requires doing more. Instead of proceeding through the process with the end goal being approving the permits in the most hasty, least expensive manner possible, consider the long-term impacts from these mines. Consider at what cost these mines are approved- destruction of historic sites, the unburying of Native American gravesites, desecration of sacred sites, lost water resources, and a continued policy of treating Indian communities as expendable populations.

The EPA needs to visit tribal reservations, view the conditions, learn the history, and listen to Indian communities most impacted. Simply consulting the tribes, receiving comments without truly considering the alternative of denying the mine permits, is nothing more than going through the motions and checking off a box. The trust responsibility places additional duties on the federal government to protect places of prayer relied on by Indian communities.

IV. The Treaty Rights of the Lakota People Under the 1868 Fort Laramie Treaty Should Be Recognized and Honored.

The Lakota have exclusive treaty rights to the Black Hills and have never waived those rights. After the Lakota were successful in defending their lands from white settlers and their victory over the U.S. military in the Powder River War of 1866-1867, the United States government sought to end the conflict in the region and initiated treaty negotiations, resulting in the 1868 Fort Laramie Treaty. The Lakota agreed to withdraw their opposition to the

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[29] National Park Service, 294, https://www.nps.gov/wica/learn/historyculture/upload/-9B-9-Chapter-Nine-Nature-and-Cosmos-Pp-282-304.pdfnps.gov.
[30] Vine Deloria, Jr. THE SACRED LAND READER 18 (2003) https://www.sacredland.org/PDFs/SLReader.pdf.
[31] *Id.* at 19.

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construction of railroads, to not attack settlers, and to withdraw their opposition to military posts in exchange for absolute rights to the land as well as hunting grounds outside the reservation.[32]

The United States pledged that the Great Sioux Reservation and the Black Hills would be "set apart for the absolute and undisturbed use and occupation of the Indians."[33] The U.S. agreed that no unauthorized persons "shall ever be permitted to pass over, settle upon, or reside in [the] territory."[34] However, after gold was discovered in the area, the U.S. government, under the direction of President Grant, failed to uphold their treaty obligations and allowed miners and non-Indians to invade lands set aside exclusively for the Lakota.[35]

After the U.S. government breached its treaty obligations by allowing miners onto land expressly reserved for the Lakota, the U.S. Supreme Court found the government guilty of an unconstitutional taking of the Black Hills from the Lakota.[36] In 1876, the government withheld food rations from the Lakota in an attempt to starve them into signing an agreement giving away the Black Hills.[37] The Lakota refused.

Article XII of the Treaty provided "No treaty for the cession of any portion or part of the reservation herein described which may be held in common shall be of any validity or force as against the said Indians, unless executed and signed by at least three-fourths of all the adult male Indians."[38] Even in the face of starvation, the U.S. government was only able to secure signatures from 10% of the adult male population, far fewer than the three-fourths of adult male signatures legally required by the Treaty.[39] As such, the Lakota never consented and never agreed to give their rights to the Black Hills away.

The Lakota retain their treaty rights to the Black Hills and their opposition to uranium mining in the Black Hills should be recognized and adhered to. Without following the direction of the tribe, the United States continues an unconstitutional taking and carries on a legacy of disrespect and dishonorable dealings with Indian tribes.

V. Rates of Violence Towards Native American Women Increase in Mining Towns and the EPA Has an Obligation to Consider These Impacts and Deny the Mine Permits.

The EPA should deny the mine permits due to the social dangers that accompany mine projects, particularly the impacts to Native American women. When a mine operation opens, transient workers move in for employment, primarily male workers, often skewing the male-female ratio in the community. This has led to an increase in more women working in strip clubs and bars. This new sex industry has brought unwanted problems to once-smaller communities. Crimes against women, particularly domestic violence and sexual assaults, rise as the population

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[32] United States v. Sioux Nation of Indians, 448 U.S. 371, 376 (1980).
[33] *Id.* at 374.
[34] *Id.*
[35] *Id.* at 378.
[36] *Id.* at 384.
[37] *Id.* at 379.
[38] *Id.* at 376.
[39] *Id.* at 382.

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of mine workers grows.[40] In North Dakota, the oil boom resulted in a 162% increase in the violent crime rate from 2002 to 2012.[41] On the Fort Berthold Reservation, sexual assaults have increased by 75%.[42] Sexual violence against Native American women is extremely high as 1 in 3 Native women has been raped or experienced an attempted rape.[43]

Bringing in transient mine workers only exacerbates these problems. Sex trafficking among young Native people has also increased in communities after mine operations begin.[44] The EPA has a responsibility to study and evaluate increased rates of violence towards Native American women as a result of mining booms, and other secondary impacts to vulnerable populations.

VI. EPA Should Recognize and Follow United Nations Human Rights Principles and Deny the Permits.

The EPA should look to principles of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) when working with Native American communities. The UNDRIP requires that state and federal governments, in good faith, receive "free, prior, and informed consent" from tribal nations on any project affecting their lands, territories, or resources.[45] Clearly, the Lakota have not given consent to mine uranium in the Black Hills. UNDRIP recognizes that "respect for indigenous knowledge, cultures, and traditional practices contributes to sustainable and equitable development and proper management of the environment."[46]

Indigenous peoples throughout the world believe in principles of natural law as opposed to western concepts of law. Whereas western law prohibits the mix of church and religion with law, Indigenous peoples rely on cultural and religious teachings as the ultimate source of law. Natural law is a set of laws that originates from the earth and recognizes all living beings as equal. It is the belief that all beings in creation are connected and that there are familial relationships among all of creation. Natural law recognizes the role of a human as a steward of the land, to look after the land, and protect the land for future generations rather than using the earth and its resources for temporary gain. It is a concept that recognizes that the lives of human beings may end, but the world will regenerate and continue on without humans.[47]

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[40] Nikke Alex, *Dark Side of Development: Bakken Oil Boom Pumping Sexual Violence into Fort Berthold Reservation*, MISS NIKKE http://missnikke.com/post/108614556446/dark-side-of-development-bakken-oil-boom-pumping.
[41] *Id.*
[42] *Id.*
[43] *Id.*
[44] Rachel Knight, *Trafficking of Native Women Begins in Fracking Towns After Influx of Oil Workers*, FATAL SINCERITY (April 9, 2013) https://fatalsincerity.com/2013/04/09/trafficking-of-native-women-begins-in-fracking-towns-after-influx-of-oil-workers.
[45] UN Declaration on the Rights of Indigenous Peoples, art. 32, G.A. Res. 61/295, U.N. Doc. A/RES/61/295 (Sept. 13, 2007).
[46] *Id.*
[47] Oren Lyons, Faithkeeper of the Turtle Clan, Onondaga Council of Chiefs, Six Nations Iroquois Confederacy, YOUTUBE, https://www.youtube.com/watch?v=q3t12TZw-nA (last visited April 1, 2017).

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Natural law is based on principles of respect and responsibility. These principles are reflected in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). Article 25 of the Declaration states, "Indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally-owned or otherwise occupied and used lands, territories, waters and coastal seas and other resources and to uphold their responsibilities to future generations in this regard."[48] To grant the proposed permits to Powertech, the EPA violates this internationally-recognized human right.

In early 2017, United Nations Special Rapporteur on the Rights of Indigenous Peoples, Victoria Tauli-Corpuz visited Indigenous communities throughout the US. Ms. Tauli-Corpuz summarized her findings, recommending that a full environmental impact statement be done in every case where an extractive industry project affects Indian tribes.

In addition, the UN Special Rapporteur noted the challenges that exist in the consultation process between tribal governments and the US government. The Special Rapporteur mentioned Executive Order 13175 as a well-intentioned but confusing and disjointed framework that "suffers from loopholes, ambiguity, and a general lack of accountability."[49] The Special Rapporteur went on to write, "The

[48] UN Declaration on the Rights of Indigenous Peoples, art. 25, G.A. Res. 61/295, U.N. Doc. A/RES/61/295 (Sept. 13, 2007).
[49] Victoria Tauli-Corpuz, End of Mission Statement by the United Nations Special Rapporteur on the Rights of Indigenous Peoples (March 3, 2017), available at http://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=21274&LangID=E#sthash.EgERylVE.g1rWKRsr.dpuf.
[50] *Id.*
[51] *Id.*

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The EPA should fulfill its human rights responsibilities under the UN Declaration on the Rights of Indigenous Peoples and deny the mine permits.

Thank you for your consideration of these comments.

Sincerely,

Nadine Padilla

Travis Miller

Native Research Solutions
[redacted]

Shea, Valois

From: Nadine Padilla [redacted]
Sent: Friday, May 19, 2017 6:10 PM
To: Shea, Valois
Cc: Miller, Travis
Subject: Comments Re: Dewey Burdock Uranium Mine
Attachments: NRS_ Comments for Dewey Burdock ISL Uranium Mine.pdf

Ms. Shea,

Please find comments attached regarding the Dewey Burdock Uranium Mine in the Black Hills. We strongly urge you to deny the requested permits and the aquifer exemption.

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Thank you,

Nadine Padilla
Travis Miller
Native Research Solutions

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Shea, Valois

From: Nancy Hilding [redacted]
Sent: Thursday, May 11, 2017 11:45 AM
To: Shea, Valois
Cc: Nancy Hilding; Lilias Jarding
Subject: Comments on Dewey Burdock. - Bonds and NEPA

Nancy Hilding
[redacted]
and
Nancy Hilding
Prairie Hills Audubon Society
[redacted]
May 11th, 2017

Valois Shea (shea.valois@epa.gov)
Fax: 303-312-6741
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80202-1129

Comments on the 2 Underground Injection Control (UIC) Draft Area Permits to Powertech (USA) Inc. & the associated aquifer exemption & Cumulative Effects Analysis, -- One Permit is a potential UIC Class III Area Permit for injection wells for the ISR of uranium; the second is a a potential UIC Class V Area Permit for deep injection wells that will be used to dispose of ISR process waste fluids into the Minnelusa Formation

BONDS,

Please fully disclose all bonds or other financial assurances that the various federal, State, Local and/or tribal governments require for the entire Project, under all potential scenarios for potentially permitted actions.

Please discuss if the project can go forward as just a waste disposal project, before mining begins or completely independent of any mining activities ever occurring at all.

Please discuss if the project can go forward as disposal for in-situ leach mining waste, that was never associated with the mining of uranium, thorium, rare earth minerals or other mining that might be under the NRC's regulatory jurisdiction.

Can not-radiactive wastes from other types of in-situ leach mines, that are not currently regulated by the NRC be placed into a disposal site regulated by the NRC? Does the NRC have jurisdiction to make a decision about placement of wastes from a mine, that the NRC does not regulate into a facility that the NRC does in fact regulate or permit? If the facility never is associated with handling of any radioactive material... does the NRC have any regulatory jurisdiction, any ability to make regulatory decisions and if so which NRC bonds apply (if any)?

If the facility never does any mining... which bonds or financial assurances of state, local, tribal or federal government apply?

NEPA

Please identify all ACTION ALTERNATIVES in any related NEPA document, that discuss all the possible mining and waste disposal scenarios . including listing of the pages showing where any related NEPA document discusses disposal of other remote mines ISR wastes at the facility?

Where is the ACTION ALTERNATIVE that that envisions a 4,000 well well field instead of 642 wells?

Thanks

Nancy Hilding

cc Lilias Jarding

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Nancy Hilding
[redacted]
or
Prairie Hills Audubon Society
[redacted]
www.phas-wsd.org
[redacted]

[redacted]

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Shea, Valois

From: Nancy Hilding [redacted]
Sent: Thursday, May 11, 2017 1:15 PM
To: Shea, Valois
Subject: Purpose and Need of NRC/BLM SEIS - PHAS letter # 2

Nancy Hilding,
[redacted]

and

Nancy Hilding,
Prairie Hills Audubon Society [redacted]

May 11th, 2017

Valois Shea (shea.valois@epa.gov)
Fax: 303-312-6741
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80202-1129

Comments on the 2 Underground Injection Control (UIC) Draft Area Permits to Powertech (USA) Inc. & the associated aquifer exemption & Cumulative Effects Analysis, -- One Permit is a potential UIC Class III Area Permit for injection wells for the ISR of uranium; the second is a a potential UIC Class V Area Permit for deep injection wells that will be used to dispose of ISR process waste fluids into the Minnelusa Formation

From page xxx of the Executive Summary of SEIS on Dewey Burdock:

"The purpose and need for the proposed federal action is to either grant or deny the applicant a license to use ISR technology to recover uranium and produce yellowcake at the proposed project site."
From page xxx of Executive Summary" Environmental Impact Statement for the Dewey-Burdock Project in Custer and Fall River Counties, South Dakota Supplement to the Generic Environmental Impact Statement"

How is any intention to deposit ISR wastes from other facilities part of the SEIS's "Purpose and Need"?

If actions allowed under license are additional to and not included in the SEIS's - Purpose & Need, how is that justified? How can
NRC have created a sufficient "range of alternatives"?

Thanks,

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Nancy Hilding
[redacted]
or
Prairie Hills Audubon Society
[redacted]
www.phas-wsd.org
[redacted]

[redacted]

Shea, Valois

From: Nancy Hilding [redacted]
Sent: Monday, May 15, 2017 4:54 PM
To: Shea, Valois
Subject: Question on Dewey-Burdock Class 3 and 5 injection well permits

Nancy Hilding to Valois Shea,

RE: "Administrative Record for the Dewey-Burdock Class III and Class V Injection Well Draft Area Permits

The public notice says:

"Written comments must be received by midnight on May 19, 2017."

How does this apply to comments sent by postal mail... must they be in your mail box arriving during the work day on May 19th?
Sometimes Federal agencies.. require it received and sometimes they require it postmarked by a certain date for postal mail.
Denver may have a post office open till midnight... so what is the rule for postal mail deadlines.

How does this apply to faxes... must faxes be sent during the working hours, or does the fax record transmissions till 11:59 pm on May 19th?

==========
Nancy Hilding
[redacted]
or
Prairie Hills Audubon Society
[redacted]
www.phas-wsd.org
[redacted]

[redacted]

Shea, Valois

From: Nancy Hilding <nhilshat@rapidnet.com>
Sent: Tuesday, May 16, 2017 11:39 AM
To: Shea, Valois
Subject: Dewey Burdock In-situ Leach Mining Injection well comments

Nancy Hilding
Prairie Hills Audubon Society
P.O. Box 788, Black Hawk, SD 57718

Dear Valois Shea

Here is a link to the National Environmental Policy Act:

https://www.fws.gov/r9esnepa/RelatedLegislativeAuthorities/nepa1969.PDF

If the EPA is allowed an equivalent process to NEPA... please discuss how are you meeting NEPA's goals and objectives
in an equivalent way, especially please discuss how you meet Sec. 102 [42 USC § 4332 (C) (iii) and (E).:

I quote some of the text below

"Sec. 102 [42 USC § 4332.....

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on --
(i) the environmental impact of the proposed action,
(ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
(iii) alternatives to the proposed action,
(iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and
(v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available

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to the President, the Council on Environmental Quality and to the public as provided by section 552 of title 5, United States Code, and shall accompany the proposal through the existing agency review processes;.....

(E) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources;" (Emphasis added.)

Thanks,

Nancy Hilding
comments submitted on behalf of the Society and myself
as an individual.

==========
Nancy Hilding
[redacted]
or
Prairie Hills Audubon Society
[redacted]
www.phas-wsd.org
[redacted]

[redacted]

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Shea, Valois

From: Nancy [redacted]
Sent: Friday, June 16, 2017 3:45 PM
To: Hoppe, Allison; Shea, Valois
Cc: Nancy Hilding
Subject: Dewey Burdock Mine Permit- Federal Register review of EPA's CRF 40 CFR 124.9 (b) (6)

Nancy Hilding
President Prairie Hills Auduobn Society
[redacted]

Dear Allison Hoppe and Valois Shea,

RE: Rule creation for EPA's CRF 40 CFR 124.9 (b) (6)

Can either of you give me the publication date for the Federal Register Notice of publication of the CFR rule set that CRF 40 CFR 124.9 (b) (6) belongs within. This rule exempts EPA permitting via underground injection control (UIC) from NEPA.
I wish to see the justifications for adoption of this rule set and that would normally be exlained in a preamble for the rule in the Federal Register,
when it was adopted.

I ask for this information to help write my comments on Dewey Burdock In-situ Leach Application.
I wish to understand which legal argument EPA uses to exempt itself from NEPA for UIC.
As I understand it courts have exempted agencies from the procedural requirements under NEPA where the court thinks that either:
(1) a direct conflict between NEPA and the organic statute authorizing agency action exists, or
(2) NEPA procedures will be redundant with those provided for under the organic statute due to either displacement or functional equivalence.

I ask that you fully disclose those legal arguments in your final permit documents... fully explain how and why EPA chose to pass CFRs exempting itself from NEPA for UIC. Please fully disclose which legal rationale you tier to. If it is "functional equivalence"; we believe you need to show how you are achieving "functional equivalence" or have redundant procedures to NEPA.

Thanks,

Nancy Hilding

Nancy Hilding
President
Prairie Hills Audubon Society
[redacted]

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www.phas-wsd.org

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Shea, Valois

From: Nancy Hilding [redacted]
Sent: Monday, June 19, 2017 9:15 PM
To: Shea, Valois
Cc: Nancy Hilding; Lilias Jarding
Subject: Additional Comments, on Dewey Burdock In-situ Leach Uranium Mine application
Attachments: Dewey_Burdock_Project Sign-On Letter 6-17.docx

Nancy Hilding
President
Prairie Hills Audubon Society
[redacted]
[redacted]
June 19th

Dear Valois Shea,

Prairie Hills Audubon Society attaches the Clean Water Alliance (CWA) letter. We thank Lilias Jarding for writing this "sign on letter" and we incorporate the CWA comments by reference & we would love to see you do NEPA analysis on this project..

Lilias Jarding repeatedly argues a NEPA argument and asks you to achieve NEPA standards & compliance. We wish to present CWA letter's points skewed in a slightly different way. We are aware that the EPA adopted 40 CFR 124.9 (b) 6, which the EPA uses to avoid NEPA on UIC approvals. We have not found in writing the EPA's justification, in which it explains why it believes can avoid federal law (NEPA) , but we suspect it is tiering to the legal precedent for "functional equivalence" - an winning argument from various court cases. We don't know if 40 CFR 124.9 (b) 6, has ever been put to a court challenge, to see if the EPA's UIC application review process meets a Judge's view of "functional equivalence". We are not sure if the EPA has ever directly approved an In Situ Leach Uranium mine vs allowing States primacy over UIC. Has the EPA done such an mine waste injection UIC approvals, (citing 40 CFR 124.9 (b) 6 to escape NEPA) & actually survived a court challenge?

Since you all believe you can escape NEPA, we suggest you reread/reconsider all Lilias's NEPA arguments, to say you must demonstrate "functional equivalence" with NEPA. If you must supplement the record to address the issues Lilias raises.. you must then release the revised/supplemented set of EPA review documents also for public comment. If you don't do this additional step, there will be another NEPA or NEPA "functional equivalence" argument that maybe can be litigated.

We believe that the project is being approved by multiple entities (EPA, SD-WMB, SD-BME and NRC) and ironically the project description changes. Is the project a slippery moving target? We fear the Applicant will incrementally ratchet up the scope of the project each time some new entity reviews it and expect the new entity to be impressed by and tier to the older reviewing entity's prior approval, who actually reviewed and approved a different and maybe smaller project. We then fear the Applicant will go back to the earlier entity with the later approval of the revised project from the second agency. Maybe this could be an agency manipulation strategy? This also creates special review confusion as the NRC review follows NEPA and the EPA review does not but does "functional equivalence" of NEPA.

Please be extremely clear about how the project morphs constantly. Please present all it's modalities, perhaps as a "range of action alternatives" . Lilias Jarding lays out the conflicting project versions out for you in her Clean Water Alliance letter. You must develop the various alternatives in detail -- with smaller footprint and larger footprint "action alternative" versions. And you must do each alternative's impact analysis. NRC must then do another SEIS.

If ISR wastes from other remote ISR mining sites are allowed to be injected, then mining at those sites would be "connected actions" and/or "cumulative actions" and the remote sites and all the impacts from them must be also considered. For example Uranium mines

in Wyoming may be closer to active greater sage grouse leks, than in SD. Future processing of the mine's yellow cake is also a "connected actions" and/or "cumulative actions" as is the waste disposal of stuff from the mine site. The eventual use of the processed mineral and the waste and exposures that future unknown use will create and the future radioactive wastes generated by future use is also a cumulative or connected action. Radioactive material is not benign and it can keep on releasing pollution -- sort of like the energizer bunny.

If it is the NRC who has ordered/concluded that third party remotely generated ISR waste is allowed into injection wells, why did they not discuss that in their SEIS? The NRC has authority over radioactive material..so how can they have jurisdiction to make decisions in ISR mining wastes from other recovery of a mineral that is not radioactive (such as potash or copper).

Thanks,

Nancy Hilding
President
Prairie Hlls Audubon Society

CWA Sign-on letter attached

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Nancy Hilding
[redacted]
or
Prairie Hills Audubon Society
[redacted]
www.phas-wsd.org
[redacted]

[redacted]

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Sent: Monday, June 19, 2017 9:15 PM
To: Shea, Valois
Cc: Nancy Hilding; Lilias Jarding
Subject: Additional Comments, on Dewey Burdock In-situ Leach Uranium Mine application
Attachments: Dewey_Burdock_Project Sign-On Letter 6-17.docx

Nancy Hilding
President
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[redacted]
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Nancy Hilding
President
Prairie Hlls Audubon Society

CWA Sign-on letter attached

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Oglala Sioux Tribe
Office of the President
P.O. Box #2070
Pine Ridge, South Dakota 57770
1(605) 867-5821 Ext. 8420 (O) / 1(605) 867-6076 (F)

Troy "Scott" Weston

June 19, 2017

Valois Shea
U.S. Environmental Protection Agency Region 8
Mail Code 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80802-1129

Via email to shea.valois@epa.gov

RE: Oglala Sioux Tribe Comment in Opposition of the Dewey-Burdock Class III and Class V Underground Injection Well Draft Area Permits

Dear Ms. Shea:

I serve as President of the Oglala Sioux Tribe, and I write to submit testimony on behalf of the Oglala Sioux Tribal Council, in opposition to the application by Powertech, Inc. for a Class V Underground Injection Control (UIC) permit, for uranium mining waste at the proposed Dewey-Burdock project site.

An overview of our concerns is as follows:

The proposed waste injection site is within the boundaries of the Great Sioux Reservation, as defined in the Treaty of Fort Laramie of April 29, 1868. (15 Stat. 635). The United Nations Declaration of the Rights of Indigenous peoples prohibits approval of the permits without our consent, and we do not consent. In fact, the Oglala Sioux Tribe adopted Ordinance No. 07-40 explicitly declaring the Pine Ridge Indian Reservation, including its aboriginal territory boundaries, to be a nuclear-free area. Executive Order 13175 on Consultation and Coordination with Indian Tribal Governments requires all agencies to respect Treaty rights, and approval of the Dewey-Burdick permit violate the 1868 Fort Laramie Treaty. Under the Fort Laramie Treaty, and applicable principles of federal and international law, the permit must be denied.

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The Oglala Sioux Tribe possesses reserved water rights to the Cheyenne River, under the legal principles established in *United States v. Winters*, 207 U.S. 564 (1908). The interconnection of the Madison and Minnelusa aquifers and of ground and surface water at artesian springs threatens the Cheyenne headwaters with contamination. The EPA lacks adequate data to demonstrate that our waters will remain protected.

Under section 106 of the National Historic Preservation Act, the EPA must consult with the Oglala Sioux Tribal Historic Preservation Office in the identification, evaluation and determination of potential impacts to historic properties by the proposed Dewey-Burdock injection wells. (54 U.S.C. §306108). Under Executive Order 13175, the EPA must also engage in government-to-government consultation with the Oglala Sioux Tribal Council on the proposed UIC permit. (65 Fed. Reg. 67249). The attempt by EPA to combine Section 106 consultation meetings with government-to-government consultation resulted in confusion and lack of compliance with either consultation requirement.

As discussed in more detail below, for these reasons, the permit application must be denied.

THE PROPOSED DEWEY BURDOCK PERMIT VIOLATES THE 1851 FORT LARAMIE TREATY AND 1868 FORT LARAMIE TREATY

In 1848, the United States needed the permission of the *Oceti Sakowin Oyate* to establish the Oregon Trail. This resulted in the Fort Laramie Treaty of 1851, in which the United States recognized as Sioux Country a vast territory in the northern plains. (11 Stat. 749). Article V defines the territory of the Great Sioux Nation as follows:

> The territory of the Sioux or Decotah Nation, commencing at the mouth of the White Earth River on the Missouri River: thence in a southwesterly direction to the forks of the Platte River; thence up the north fork of the Platte River to a point known as the Red Butte, or where the road leaves the river; thence along the mountain range known as **the Black Hills**, to the headwaters of the Heart River; thence down Heart River to its mouth and thence down the Missouri River to the place of beginning.

(11 Stat. 749).

The proposed Dewey-Burdock underground injection wells are clearly within the boundaries of Sioux Country as defined in Article V of the 1851 Fort Laramie Treaty. The permit application, if granted, will violate the Treaty rights of the Oglala Sioux Tribe under the 1851 Treaty.

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Soon after the Treaty was ratified by Congress, the 1863 Montana gold rush resulted in trespassers entering Sioux Country. The United States began building military outposts in Wyoming Territory, in violation of the 1851 Fort Laramie Treaty. Oglala Lakota forces led by Chief Red Cloud defeated the United States in the Powder River War of 1866-1867, forcing closure of the military forts. The United States then negotiated the Fort Laramie Treaty of April 29, 1868.

In the 1868 Treaty, the Oglala and other bands of the *Oceti Sakowin Oyate* reserved the Great Sioux Reservation, as described in Article II:

> The United States agrees that the following district of country, to wit, viz: commencing on the east bank of the Missouri river where the 46th parallel of north latitude crosses the same, thence along low-water mark down said east bank to a point opposite where the northern line of the State of Nebraska strikes the river, thence west across said river, and along the northern line of Nebraska to the 104th degree of longitude west from Greenwich, thence north on said meridian to a point where the 46th parallel of north latitude intercepts the same, thence due east along said parallel to the place of beginning; and in addition thereto, all existing reservations of the east back of said river, shall be and the same is, set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from time to time they may be willing, with the consent of the United States, to admit amongst them; and the United States now solemnly agrees that **no persons**, except those herein designated and authorized so to do, and except such officers, agents, and employees of the government as may be authorized to enter upon Indian reservations in discharge of duties enjoined by law, **shall ever be permitted to pass over, settle upon, or reside in the territory described in this article.**

(15 Stat. 635).

Thus, the Great Sioux Reservation comprised all of present-day South Dakota west of the Missouri River (to the east bank), including the Black Hills. Article II recognizes the right of our Tribe to exclude PowerTech. The sacred nature of the Black Hills to the *Oceti Sakowin Oyate* is well documented – these are sacred lands that should not be desecrated in the manner described in the draft UIC permit. The Black Hills are integral to our creation story, and remain an important place for pilgrimage and ceremony by our Tribal members. Ultimately, the proposed permit violates Article II of the 1868 Fort Laramie Treaty and must be denied.

The recharge area for the Black Hills aquifers affected by the proposed DeweyBurdock permit is also protected under the 1868 Treaty. The Powder and Platte River basins were identified as Sioux Country in the 1851 Treaty. Although they lay outside

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of the Great Sioux Reservation as described in Article II of the 1868 Treaty, we retained title to these lands for hunting. Under Article XVI of the Fort Laramie Treaty of 1868, these areas are defined as unceded, and remain in Sioux ownership:

> The United States hereby agrees and stipulates that the country north of the North Platte River and east of the summits of the Big Horn mountains shall be held and considered to be **unceded**. Indian territory, and also stipulates and agrees that no white person or persons shall be permitted to settle upon or occupy any portion of the same; or without the consent of the Indians, first had and obtained, to pass through the same.

(15 Stat. 639).

Article XI of the 1868 Treaty established a process by which a Commission would be formed, to include our head men, prior to approval of "works of utility or necessity" that may affect the Great Sioux Reservation. The Dewey-Burdock permit application may not be approved by EPA in the absence of the formation of a commission as required by Article XI of the 1868 Fort Laramie Treaty.

Under Article XII of the 1868 Treaty:

> No treaty for the cession of any portion or part of the reservation herein described which may be held in common shall be of any validity or force as against the said Indians, unless executed and signed by at least three-fourths of all the adult male Indians.

15 Stat. 638.

The United States violated Article XII in every unilateral land taking against the *Oceti Sakowin Oyate*.

In any event, these treaty obligations remain in effect today. As explained by the Chief Justice John Marshall –

> The Indian nations had always been considered as distinct, independent communities, retaining their original natural rights, as the undisputed possessors of the soul from time immemorial… The very term 'nation," so generally applied to them, means "a people distinct from all others." The constitution, by declaring treaties already made, as well as those to be made, the supreme law of the land, has adopted and sanctioned the previous treaties with the Indian nations, and consequently admits their rank among those powers who are capable of making treaties. The words "treaty" and "nation" are words of our own language, selected in our diplomatic and legislative

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> proceedings by ourselves, having each a definite and well understood meaning. We have applied them to Indians as we have applied them to other nations of the earth. They are all applied in the same sense.

(*Worcester v. Georgia*, 31 U.S. (6 Pet.) 515, 559-560 (1832)).

Consequently, the obligations of the United States to the Oglala Sioux Tribe under the 1851 and 1868 Fort Laramie Treaties remain in effect today. The Fort Laramie Treaties enjoy a legal status comparable to treaties with foreign nations. For this reason, the requirements of the United Nations Declaration of the Rights of Indigenous Peoples apply to the Dewey-Burdock UIC permits. Article 29 paragraph 2 prohibits approval of the proposed permits without the consent of the Oglala Sioux Tribe:

> States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent.

(U.N. Doc. A/RES/61/295, Sept. 13, 2007).

In Article 37, paragraph 1, the U.N. Declaration requires compliance with our Treaty rights:

> Indigenous peoples shall have the right to the recognition, observance and enforcement of treaties.

These requirements gain special significance under international law where, as here, sacred lands are at risk. Article 25 of the U.N. Declaration provides that:

> Indigenous people have the right to maintain and strengthen their distinctive spiritual relationship with their traditionally owned or otherwise occupied lands.

The Dewey-Burdock UIC permit application threatens Treaty land and water of the Oglala Sioux Tribe. The applicable principles of international law require EPA to deny the permit.

These requirements are incorporated into the laws of the United States, pursuant to Executive Order 13175 on *Consultation and Coordination with Indian Tribal Governments*. E.O. 13175 provides that:

> The United States continues to work with Indian tribes on a government-to-government basis to address issues concerning

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> Indian… treaty and other rights. **Agencies shall… honor treaty rights** and other rights.

(65 Fed. Reg. 67249).

The title to the Dewey-Burdock project area remains disputed by the Oglala Sioux Tribe. In the case of *United States v. Sioux Nation of Indians*, 448 U.S. 371, 387 (1980), the United States Supreme Court ruled that the taking of Sioux Nation treaty lands under the Act of February 2, 1877 and other laws violated the 5th Amendment of the United States constitution. In affirming a judgment of $108 million, the Court described the treatment of the Sioux Nation by the United States as "(a) more ripe and rank case of dishonorable dealings will never, in all probability, be found in our nation's history."

The Oglala Sioux Tribe and *Oceti Sakowin Oyate* have not accepted the award of money damages, and have continuously insisted that land restoration be the cornerstone of a settlement of the outstanding Treaty claims under the 1851 and 1868 Treaties. As explained by South Dakota District Judge Lawrence Piersol, "If there is to be any other resolution for these past wrongs… then (it) must come from Congress." (*Different Horse v. Salazar*, Civ. 09-4049, Memorandum Op. and Order p. 9, (D.S.D. 2009)).

Legislation has been introduced in past Congress' to return title to the lands affected by the proposed Dewy Burdock project to the *Oceti Sakowin Oyate*. E.g. 99th Cong., S. 1453 ("Sioux Nation Black Hills Act"). Indeed, the centuries-long efforts of the Oglala Sioux Tribe for the return of our sacred Black Hills has been well documented, and is on-going. Ultimately, as the largest band of the *Oceti Sakowin Oyate*, the Oglala Sioux Tribe retains an unresolved claim under the 1868 Fort Laramie Treaty to the title to the land within and surrounding the project area.

The EPA cannot ignore this claim. The proposed Class V UIC permit violates the 1851 and 1868 Fort Laramie Treaties, the United Nations Declaration of the Rights of Indigenous Peoples and Executive Order 13175. The EPA must deny the Dewey-Burdock permit application.

THE PROPOSED INJECTION WELLS THREATEN WATERS OF THE OGLALA SIOUX TRIBE

Under the principles enunciated by the United States Supreme Court in *Winters v. United States*, 207 U.S. 564 (1908), in the Fort Laramie Treaties, the Oglala Sioux Tribe reserved water rights for all present and future beneficial uses on the Pine Ridge Indian Reservation. The waters sources to fulfill our rights extend to all waters arising upon, flowing over, and bordering our Reservation, as well as to groundwater. Indian water rights are prior and superior to the state law water rights of non-Indians, because they derive from Treaties with an earlier priority date, and are recognized by federal law, and are not dependent upon state law.

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Our reserved water rights extend to the Cheyenne River. The proposed injection wells threaten the Cheyenne River watershed near its headwaters. The proposed DeweyBurdock injection wells and potential migration pathways lead to the Cheyenne River. Dewey Burdock directly threatens waters subject to the Winters Doctrine water rights claims of the Oglala Sioux Tribe.

Water rights are property rights, reserved in our Treaties. In addition to our reservation of land, our forefathers reserved the water necessary to transform our remaining landholdings into a permanent homeland for our people. This is specified in Article XV of the 1868 Fort Laramie Treaty:

> The Indians herein named agree that when the agency-house or other buildings shall be constructed on the reservation named, **they will regard said reservation their permanent home**.

15 Stat. 639.

Thus, our water rights extend to all waters needed for a permanent homeland. This includes the right to water free from contamination or degradation (*United States v. Gila Valley Irrigation Dist.*, 920 F.Supp. 1444 (D. Ariz. 1996). Consequently, the risk to water quality posed by approval of Dewey-Burdock will violate the Winters Doctrine water rights of the Oglala Sioux Tribe.

The administrative record fails to support the contention that the Dewey-Burdock injection wells will not result in the release of injectate into the Minnelusa formation, or to surface water in the project area. Available data demonstrates that there is potential communication between the Minnelusa and Madison aquifers, and with the surface water.

The U.S. Geologic Survey has explained:

> Ground and surface-water resources in the Black Hills area are highly inter-connected. The quality of the surface water can affect the quality of ground water, and vice versa... The Madison, Minnelusa, and Minnekahta aquifers are especially sensitive to contamination, because of secondary permeability and potential for streamflow recharge.

(USGS, *Atlas of Water Resources in the Black Hills Area, South Dakota*, Water Resources Investigations Atlas HA-747, 2002, pp. 59, 71).

The EPA acknowledges that there is downward flow from the Minnelusa formation into the Madison formation, but discounts the potential for migration upward. (EPA, *Dewey-Burdock Class V Draft Area Permit Fact Sheet*, p. 30). The Madison aquifer is the source for artesian springs in this area. Contamination of the Madison formation potentially impacts surface water through artesian springs. According to

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USGS,

> Aquifer interactions can occur at artesian springs, which discharge about one-half of average recharge to the Madison and Minnelusa aquifers in the Black Hills area. Various investigators have hypothesized that the Madison aquifer is the primary source for many artesian springs.

(Naus et al, *Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota*, Water Resources Investigations Report 01-4129, 2001, p. 2).

The potential pathway for migration of injectate into the Madison aquifer (per EPA) and then into surface water (per USGS) is improperly discounted by EPA. The agency has failed to given proper consideration of the potential existence of pathways resulting from unidentified faults or future seismic activity. The EPA finding that "the nearest potential pathway for fluid movement out of the injection zone in the Dewey area is the Dewey fault," is not supported by adequate data, in light of the regional seismology. (EPA, *Dewey Burdock Class V Draft Area Permit Fact Sheet*, p. 26).

Abandoned exploration wells are ubiquitous in the project area, and likewise provide potential pathways for injectate. (*In re PowerTech (USA) Inc.*, LaGarry, Supplemental Written Testimony, ASLB, Doc. 40-9075-MLA, Nov. 21, 2014). The EPA has failed to consider the potential for abandoned or poorly constructed wells to affect the migration of contaminants.

The directional flow of the groundwater confirms our concern with the migration of pollutants. Horizontal flow has been confirmed for the Inyan Kara formation, and is possible for the Minnelusa aquifer. The recharge area from outcroppings flows toward the Cheyenne watershed. There is an interconnection between surface and groundwater in this area, especially at artesian springs.

The EPA lacks adequate data to support a finding of no migration pathways for contaminants that may be released from the injection wells. The proposed permit relies upon future test results and findings by PowerTech Inc. But EPA has already determined that data provided by PowerTech is unreliable.

The *Dewey Burdock Class V Draft Area Permit Fact Sheet* indicates that PowerTech overstated the critical pressure calculations for injectate into the valuable Madison aquifer by 400-500 percent. (EPA, *Dewey Burdock Class V Draft Area Permit Fact Sheet*, p. 26). Yet the proposed permit relies upon data from PowerTech to determine thickness and interconnection of aquifer formations, test results, and corrective action. The reliance upon PowerTech to provide reliable data to determine the impacts of underground injection is a fatal flaw for the protection of public health and the environment.

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This actual risk posed to water quality in the Cheyenne River watershed is likewise discounted in EPA's *Draft Cumulative Effects Analysis*. The analysis fails to calculate the combined impact of the risk posed by the Dewey-Burdock wells with the impoundment of the Cheyenne River at the Bureau of Reclamation Angostura Unit. Angostura Dam diminishes the water flows of the Cheyenne River on the Pine Ridge Indian Reservation. It interrupts the high spring flows needed for cottonwood regeneration, diminishing the abundance of important plant species used by the Lakota people in ceremonies. Operation of the dam also degrades wildlife habitat on the Pine Ridge Indian Reservation. The return flows from irrigation contain pesticides, heavy metals, and sodium.

According to the South Dakota Department of Environment and Natural Resources:

> The Cheyenne River water quality continues to be generally poor, due to both natural and agricultural sources… During normal or lower flow periods, the upper Cheyenne often exceeds irrigation water quality standards for specific conductance and sodium absorption ratio.

(SD DENR, 2016 Integrated Report for Surface Water Quality, p. 89).

Dewey-Burdock imposes additional risk to an already-impaired Cheyenne River watershed. The cumulative impact of the risk posed by the injection of waste from in situ Uranium extraction with the degradation caused by the Angostura Unit is necessary. However, the EPA *Draft Cumulative Effects Analysis* fails to do so.

Moreover, the accumulation of heavy metals and radionuclides at Angostura must be taken into account by EPA. According to Sharma, et al:

> Delta sediments of Angostura Reservoir were markedly enriched in V, Zn, and U. Uranium was also elevated from the mine spoil and drainages at near U mines sampled near Dewey… Generally, elevated heavy metal concentration existed in both the upper and lower reaches of the Cheyenne River catchment, with higher concentration in the upper reaches indicative of rapid sedimentation processes.

Rohit Sharma, et al, *Stream Sediment Geochemistry of the Upper Cheyenne River Watershed within the Abandoned Uranium Mining Region of the Southern Black Hills, South Dakota, USA*, ENVIRON. EARTH. SCI. (2016) 75:823.

Thus, researchers from the S.D. School of Mines and Technology have uncovered that uranium and mining waste have contaminated the upper Cheyenne River. Contaminants have migrated to Angostura Reservoir, and the active transportation process threatens the Pine Ridge Indian Reservation downstream. The EPA fails to give adequate consideration to the combined risk posed by this pollution with the proposed injection of mining waste

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at Dewey-Burdock. As a result, the *Draft Cumulative Effects Analysis* fails to accurately describe the risk posed to the Oglala Sioux Tribe.

Ultimately, the proposed Dewey-Burdock injection wells pose a risk of potential migration of injectate, through faults and secondary porosity in areas connecting with artesian springs. As a result, the proposed waste injection project directly jeopardizes the waters of the Oglala Sioux Tribe. EPA must deny the Dewey-Burdock permit.

EPA FAILED TO COMPLY WITH THE CONSULTATION REQUIREMENTS OF NHPA SECTION 106

Under Section 106 of the National Historic Preservation Act, "The head of any Federal agency… prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, shall take into account the effect of the undertaking on any historic property." (54 U.S.C. §306108). In the administrative record, EPA has acknowledged that the need to comply with this requirement. However, EPA's *National Historic Preservation Act Draft Compliance and Review Document* fails to demonstrate compliance with NHPA Section 106.

The draft document purports to demonstrate consultation with the OST THPO by reference to a separate document of the Nuclear Regulatory Commission, captioned *Summary of Meeting with OST Regarding the Dewey-Burdock In Situ Uranium Recovery Project. May 19, 2016*. This meeting does not constitute Section 106 compliance by EPA.

The *Summary of Meeting* document states:

> The purpose of the meeting was twofold: (i) to introduce the NRC's new management team responsible for the consultation process with the Oglala Sioux Tribe and the Tribe's new Tribal Historic Preservation Office staff, and (ii) to start the dialogue, on a Government-to-Government basis, regarding a path forward for consultation with the Oglala Sioux Tribe to address the Atomic Safety and Licensing Board's findings…

(www.nrc.gov/docs/ml1618ml16182a069.pdf).

The meeting was about a related action by a separate agency, and not specifically about the identification, evaluation and determination of impacts from the proposed UIC injection wells to be permitted by EPA. It does not constitute compliance by EPA with NHPA Section 106. There were no members of the Oglala Sioux Tribal Council at the meeting. It was not government-to-government consultation in compliance with E.O. 13175. The meeting combined and confused the two separate consultation requirements, and complied with neither requirement.

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The Table beginning on page 7 of the *National Historic Preservation Act Draft Compliance and Review Document* likewise combines the issues of section 106 consultations and government-to-government meetings. On page 9, the Table lists "April 28, 2016 Consultation meeting with the Oglala Sioux Tribe," described as "In-person meeting at the Oglala Sioux Justice Center." The EPA totally confused the governmentto-government consultation requirement under E.O. 13175 with the NHPA Section 106 consultation requirement – and complied with neither requirement.

The lack of NHPA Section 106 consultation is evidenced by the failure to address the OST THPOs concerns with the Programmatic Agreement, as discussed in the May 19, 2016 meeting between the Tribe and NRC. The lack of government-to-government consultation is evidenced by EPA's failure to comply with OST Ordinance No. 11-10 (*Ordinance Establishing Procedures for Government-to-Government Consultation Between the Oglala Sioux Tribe and the United States*). Ultimately, EPA failed to comply with the consultation requirements of federal law, and the Dewey-Burdock UIC permit applications must be denied accordingly.

I further express my support for the related concerns of the consolidated intervenors in this docket, as well as the testimonies of the Tribal Historic Preservation Officers of the *Oceti Sakowin Oyate*.

The concerns of the Oglala Sioux Tribe must be fully considered and acted upon by EPA. Approval of the Dewey-Burdock injection well application would violate the 1851 and 1868 Fort Laramie Treaties. Consequently, it violates federal and international law. It poses extreme risk to the waters of the Oglala Sioux Tribe, reserved under the Winters Doctrine. The EPA has given no consideration to these valuable property rights of our Tribe. Important consultation requirements under NHPA Section 106 and E.O. 13175 have been avoided and confused. EPA has failed to comply with these important consultation requirements. Further, the EPA has failed to consider the cumulative impacts of its actions on water quality and impact on the Pine Ridge Indian Reservation. For these reasons and as further described in the attached addendum, the Dewey-Burdock Class V UIC permit application must be denied.

Additional comments of the Oglala Sioux Tribe providing more detail are attached in the addendum hereto and incorporated herein.

Sincerely,

Troy S. Weston

Troy S. Weston, President
Oglala Sioux Tribe

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ADDENDUM TO OGLALA SIOUX TRIBE COMMENTS

The federal courts have addressed the strict mandates of the National Historic Preservation Act:

> Under the NHPA, a federal agency must make a reasonable and good faith effort to identify historic properties, 36 C.F.R. § 800.4(b); determine whether identified properties are eligible for listing on the National Register based on criteria in 36 C.F.R. § 60.4; assess the effects of the undertaking on any eligible historic properties found, 36 C.F.R. §§ 800.4(c), 800.5, 800.9(a); determine whether the effect will be adverse, 36 C.F.R. §§ 800.5(c), 800.9(b); and avoid or mitigate any adverse effects, 36 C.F.R. §§ 800.8[c], 800.9(c). The [federal agency] must confer with the State Historic Preservation Officer ("SHPO") and seek the approval of the Advisory Council on Historic Preservation ("Council").

Muckleshoot Indian Tribe v. U.S. Forest Service, 177 F.3d 800, 805 (9th Cir. 1999). See also 36 C.F.R. § 800.8(c)(1)(v)(agency must "[d]evelop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties and describe them in the EA.").

The Advisory Council on Historic Preservation ("ACHP"), the independent federal agency created by Congress to implement and enforce the NHPA, determines the methods for compliance with the NHPA's requirements. See *National Center for Preservation Law v. Landrieu*, 496 F. Supp. 716, 742 (D.S.C.), *aff'd per curiam,* 635 F.2d 324 (4th Cir. 1980). The ACHP's regulations "govern the implementation of Section 106," not only for the Council itself, but for all other federal agencies. *Id.* See also *National Trust for Historic Preservation v. U.S. Army Corps of Eng'rs*, 552 F. Supp. 784, 790-91 (S.D. Ohio 1982).

NHPA § 106 ("Section 106") requires federal agencies, prior to approving any "undertaking," such as the UIC permits for the proposed Dewey-Burdock Project, to "take into account the effect of the undertaking on any district, site, building, structure or object that is included in or eligible for inclusion in the National Register." 16 U.S.C. § 470(f). Section 106 applies to properties already listed in the National Register, as well as those properties that may be eligible for listing. See *Pueblo of Sandia v. United States*, 50 F.3d 856, 859 (10th Cir. 1995). Section 106 provides a mechanism by which governmental agencies may play an important role in "preserving, restoring, and maintaining the historic and cultural foundations of the nation." 16 U.S.C. § 470.

If an undertaking is the type that "may affect" an eligible site, the agency must make a reasonable and good faith effort to seek information from consulting parties, other members of the public, and Native American tribes to identify historic properties in the area of potential effect. 36 C.F.R. § 800.4(d)(2). See also *Pueblo of Sandia*, 50 F.3d at

859-863 (agency failed to make reasonable and good faith effort to identify historic properties).

The NHPA also requires that federal agencies consult with any "Indian tribe ... that attaches religious and cultural significance" to the sites. 16 U.S.C. § 470(a)(d)(6)(B). Consultation must provide the tribe "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." 36 C.F.R. § 800.2(c)(2)(ii).

Apart from requiring that an affected tribe be involved in the identification and evaluation of historic properties, the NHPA requires that "[t]he agency official shall ensure that the section 106 process is initiated early in the undertaking's planning, so that a broad range of alternatives may be considered during the planning process for the undertaking." 36 C.F.R. § 800.1(c) (emphasis added). The ACHP has published guidance specifically on this point, reiterating in multiple places that consultation must begin at the earliest possible time in an agency's consideration of an undertaking, even framing such early engagement with the Tribe as an issue of respect for tribal sovereignty. ACHP, Consultation with Indian Tribes in the Section 106 Review Process: A Handbook (November 2008), at 3, 7, 12, and 29.

Regarding respect for tribal sovereignty, the NHPA requires that consultation with Indian tribes "recognize the government-to-government relationship between the Federal Government and Indian tribes." 36 C.F.R. § 800.2(c)(2)(ii)(C). See also Presidential Executive Memorandum entitled "Government-to-Government Relations with Native American Tribal Governments" (April 29, 1994), 59 Fed. Reg. 22951, and Presidential Executive Order 13007, "Indian Sacred Sites" (May 24, 1996), 61 Fed. Reg. 26771. The federal courts echo this principle in mandating all federal agencies to fully implement the federal government's trust responsibility. See *Nance v. EPA*, 645 F.2d 701, 711 (9th Cir. 1981) ("any Federal Government action is subject to the United States' fiduciary responsibilities toward the Indian tribes").

Whenever there is ambiguity interpreting or applying NHPA, or other laws, the federal agency staff is not entitled to "deference to an agency interpretation of an ambiguous statutory provision involving Indian affairs. In the usual circumstance, '[t]he governing canon of construction requires that 'statutes are to be construed liberally in favor of the Indians, with ambiguous provisions interpreted to their benefit.' This departure from the [normal deference to agencies] arises from the fact that the rule of liberally construing statutes to the benefit of the Indians arises not from the ordinary exegesis, but 'from principles of equitable obligations and normative rules of behavior,' applicable to the trust relationship between the United States and the Native American people." *California Valley Miwok Tribe v. United States*, 515 F.3d 1262 (D.C. Cir. 2008) *quoting Albuquerque Indian Rights v. Lujan*, 930 F.2d 49, 59 (D.C. Cir. 1991); *Cobell v. Norton*, 240 F.3d 1081, 1101 (D.C. Cir. 2001) (*quoting Montana v. Blackfeet Tribe of Indians*, 471 U.S. 759, 766, (1985)).

EPA states that:

> Based on the information we have reviewed to date, and subject to resolving concerns identified in the NRC administrative review process, the EPA believes that the level of work completed under the auspices of the NRC on the Class III Cultural Resources Survey appears thorough and comprehensive for the APE defined by the NRC, provided the PA stipulations are followed concerning the unexpected discovery of additional historical properties.

EPA states that its consideration of the extent of cultural resource issues at the Dewey-Burdock site is based on "Section 3.9.3 of the NRC Supplemental Environmental Impact Statement prepared for the Dewey-Burdock Project (SEIS) and summarized in Appendix B of the NRC PA."

EPA's characterization of the current status of the NRC Staff's National Environmental Policy Act and National Historic Preservation Act compliance is not consistent with the Nuclear Regulatory Commission's recent ruling. See CLI-16-20 (https://www.nrc.gov/docs/ML1635/ML16358A434.pdf). In fact, the result of the Nuclear Regulatory Commission process was an express holding that the Class III archaeological study conducted at the site failed to satisfy any of the requirements associated with either the National Environmental Policy Act (NEPA) or the National Historic Preservation Act (NHPA) with respect to cultural resources.

Specifically, the NRC affirmed the Atomic Safety Licensing Board's express ruling that:

> The Board finds that the NRC Staff has not carried its burden of demonstrating that its FSEIS complies with NEPA and with 10 C.F.R. Part 40. The environmental documents do not satisfy the requirements of the NEPA, as they do not adequately address Sioux tribal cultural, historic and religious resources.

In the Matter of Powertech USA, Inc., LBP-15-16, 81 NRC 618, 708 (2015). Thus, EPA's reliance on the NRC SEIS is entirely misplaced. Indeed, there has never been a cultural resources survey conducted on the Dewey-Burdock site that took into account any Sioux cultural resources. Moreover, NRC has divided its project approval into segments rendering the scope of NRC's consultation inapplicable to EPA's UIC analysis and approvals. As such, EPA simply cannot rely on the NRC SEIS analysis in any way for such a survey.

Further, the NRC affirmed the Board's ruling that "Meaningful consultation as required by [the NHPA] has not occurred." Id. This ruling was made despite the existence of the Programmatic Agreement, which EPA suggests it might sign on to in an effort to fulfill its NHPA obligations. However, EPA appears to be unaware that the PA it references

was roundly condemned by every single Sioux tribal government that reviewed it. Indeed, not a single Tribe has agreed to be a signatory on the PA. The critique of the terms of the PA from the Tribes was severe. See attached February 5, 2014 Letter from Oglala Sioux Tribe President Bryan Brewer to NRC Staff; February 20, 2014 email from Standing Rock Sioux Tribe Historic Preservation Officer to NRC Staff (marked Exhibit NRC-016). In these letters, the Oglala Sioux Tribe identifies specific terms in the Agreement that fail to provide any detail or specificity as to future analyses of the project area, methodologies proposed for these analyses, or what mitigation measures may be adopted in the future to address the impacts. Id. at 2. The Standing Rock Sioux Tribe raises similar concerns, but goes into highly specific detail, offering not only a letter describing their frustration in dealing with the NRC Staff on this issue, but also providing multiple substantive line by line comments, questions, and critiques to the Agreement. Id. at 7-20. Unfortunately, NRC Staff did not provide any specific substantive response to either set of tribal concerns, nor did NRC Staff incorporate the changes proposed by either tribe. Instead, NRC Staff and Powertech pushed to finalize the PA without addressing the tribes' concerns.

This type of lack of meaningful consultation, in part, is what led to a NRC ruling finding a failure to comply with the NHPA consultation duties. EPA should not compound and exacerbate this failure by endorsing such a deeply flawed PA. Instead, EPA should seek to conduct a consultation effort that complies with the NHPA and meaningfully involves the Tribes in a discussion of the potentially affected cultural resources, the potential impacts to those resources, and possibly mitigation measures that can be implemented to protect those resources.

In any case, the existing PA is currently the subject of further discussion and negotiation as part of the NRC's finding that the NRC Staff has failed to comply with either NEPA or the NHPA with respect to identifying and evaluating impacts to Sioux cultural resources at the site. *See* attached May 31, 2017 letter from Oglala Sioux Tribe Historic Preservation Office; May 19, 2016 and January 31, 2017 Oglala Sioux Tribe/NRC Staff meeting summaries (all specifically identifying changes to the PA as necessary topics of ongoing NHPA consultation). As such, EPA should increase its involvement and either work to develop an agreement with the affected Tribes, including the Oglala Sioux Tribe, that properly takes into consideration the Tribes' perspectives. In the alternative, EPA should engage in the ongoing discussions between NRC and the Tribes, including the Oglala Sioux Tribe, and work toward a PA that satisfies all parties. The Oglala Sioux Tribe has a formal ordinance in effect regarding consultation, which requires the involvement of the Oglala Sioux Tribal Council. See Ordinance No. 11-10 of the Oglala Sioux Tribal Council of the Oglala Sioux Tribe.

Notably, the record developed during the NRC hearing process demonstrates that the proposed Dewey-Burdock site contains significant cultural resources that could be impacted by the project. This fact is made clear even though no meaningful cultural resources survey has been conducted on the property. Even the Augustana Class III archaeological survey upon which EPA attempts to rely recognizes that "the sheer volume of sites documented in the area is noteworthy." Report at page 7.8. Despite this

acknowledgement, no competent Sioux cultural resources survey has ever been conducted on the site.

The NRC hearing record demonstrates that EPA simply cannot rely on the Powertech-produced Class III archaeological survey for purposes of identifying impacts to cultural resource so as to satisfy its environmental impact review or NHPA obligations. Powertech candidly admits "that identifying religious or culturally significant properties in a project area is entirely reliant of the Tribes themselves and the special expertise of the Tribal cultural practitioners.... Simply put, entities such as NRC or Powertech are not equipped with the Tribe-specific knowledge and traditions to adequately instruct a specific Tribe using 'proper scientific expertise' on this subject." See attached Powertech Opening Statement at 34. The record and testimony contains no evidence that NRC Staff successfully equipped itself or acquired the necessary resources to meet NRC's NEPA duties involving religious and cultural resources. The primary reliance by EPA on the Augustana study is not supportable – particularly given the testimony at the NRC hearing. Dr. Hannus, who lead the Augustana study at the behest of the applicant admitted that his team is not "in any way qualified to be conducting TCP surveys" and further conceded that given the heightened cultural issues of the Sioux Tribes that "there will be sites that will need to be addressed archaeologically and there will be probably sites that need to be addressed as traditional cultural properties." See attached August 19, 2014 Transcript at p. 858, lines 4-8; 12-20. See also August 19, 2014 Transcript at p. 859, lines 18-24 (Dr. Hannus) ("And again, that really should clearly, I think, show us that for us to then be able to make some kind of in roads ourselves, being not of Native background, to identification of sites that are traditional cultural properties that have a tie to spirituality and so on, it is not in our purview to do that.").

Applicant witness Dr. Luhman reiterated this point, confirming that "a traditional Level 3 survey may, in fact, encounter some resources that would be associated with Native American groups or which they would identify. But, they wouldn't necessarily identify all of the resources primarily because some of the knowledge is not available to those conducting the Level 3 survey. That would be provided by the Native American groups themselves." August 19, 2014 Transcript at p. 762, line 24 to p.763, line 6. See also, August 19, 2014 Transcript at p. 764, lines 14-18 (OST witness Mr. Mesteth) ("[w]e're the ones that are the experts, not the archaeologists. They make assumptions and hypotheses about our cultural ways and it's not accurate. Some of the information is not accurate. And that's why we object in certain situations."); p. 765, line 25 to p. 766, line 9 (Mr. Mesteth).

Indeed, Dr. Hannus testified that his office has never worked on any projects that considered the cultural resources at a site. August 19, 2014 Transcript at p. 843, lines 4-7. Despite this fact, NRC Staff witness Dr. Luhman testified that NRC Staff relied on Augustana to conduct all of the initial and follow up field survey work at the site, with the exception of the three non-Sioux tribes that submitted reports. August 19, 2014 Transcript at p. 818, lines19-22.

Upon the Sioux Tribes' request as early as 2011 that cultural resource surveys be conducted at the site, NRC Staff prompted the applicant to bring in Dr. Sabastian and her

firm to coordinate this review. August 19, 2014 Transcript at p. 784, lines 20-25 (Dr. Sabastian). However, Dr. Sabastian also testified that she also has never been involved in any kind of "actual physical on-the-ground TCP survey-kind of thing that we're talking about." August 19, 2014 Transcript at p. 846, lines 9-21.

Lastly, Mr. Fosha testified that he worked with the applicant and Augustana "from the very start of the project, so the bulk of this material is a result of myself reviewing what Augustana College had been doing in the field." August 19, 2014 Transcript at p. 865, lines 3-6. Mr. Fosha testified that he met with the applicant and between them discussed methods for identification of sites and the methods and steps to take "throughout the process," but only related to the State of South Dakota permit, and having "nothing to do with the NRC permit or anything like that" – even remarking that "up until the point where Augustana was nearly finished I was the only review agency on this project." August 19, 2014 Transcript at p. 865, line 23 to p. 866, line 5. Despite Mr. Fosha being the only person giving any direction to Dr. Hannus' Augustana team, Mr. Fosha testified that his experience and focus was solely "the field of archaeology" and not culturally as to the concerns of the Tribes. August 19, 2014 Transcript at p. 867, lines 14-20.

The only NRC Staff or applicant witness that testified to having any experience in conducting cultural resource field surveys was NRC Staff witness Dr. Luhman. However, as stated, Dr. Luhman admitted to relying exclusively on Augustana for both the initial field work and the follow up field studies, even though Dr. Hannus' testimony had confirmed that Augustana had no culturally relevant experience. August 19, 2014 Transcript at p. 818, lines19-22 (Dr. Luhman). Dr. Luhman did testify that "in those projects in which I have been involved [a cultural survey] it is typically that [the Tribes] are working alongside with the archaeological survey team as they are going about doing the survey. It could be in the preliminary stages of doing the generalized recognizance (sic) of the project area. Oftentimes the federal agency and other parties will be along that process so that there can be discussions while out in the field, and these are for sometimes very large projects. But in my experience it typically is at the same time when there is an ongoing consultative and survey process." August 19, 2014 Transcript at p. 836, line 18 to p. 837, line 2.

Consistent with the admitted lack of any culturally relevant experience or focus by any of the prior analysts in reviewing sites for cultural resource impacts, at the live hearing NRC Staff witness Ms. Yilma admitted that no written cultural resources analysis prepared during any part of the NEPA analysis included <u>any</u> comments or reports from <u>any</u> Sioux Tribes. August 19, 2014 Transcript at p. 821, lines 3-7; *id.* at p. 875, lines 6-11. This is despite testimony from NRC Staff witness Ms. Yilma as to the Staff's recognition of the importance of the area to the Sioux from a cultural perspective from the earliest stages of the application review stage. August 19, 2014 Transcript at p. 774, line 21 to p. 775, line 1. <u>See also</u>, August 19, 2014 Transcript at p. 771, lines 1-7 (Ms. Yilma). NRC Staff witness Ms. Yilma also testified as to the importance and focus at least as early as 2011 by both the Sioux Tribes and within NRC Staff on the need for culturally-based field surveys in order to fulfill the NEPA and NHPA requirements. August 19, 2014 Transcript at p. 776, line 22 to p. 777, line 3; p. 790, lines 1-17. Indeed, NRC Staff witness Ms. Yilma testified

that after meeting in 2011 with the Oglala Sioux, Standing Rock Sioux, Flandreau Santee Sioux, Sisseton Wahpeton (Sioux), Cheyenne River Sioux, and Rosebud Sioux (see August 19, 2014 Transcript at p. 810, lines 16-22), NRC Staff specifically deliberated about conducting an ethnographic study of the site to ensure incorporation of Sioux cultural and historic perspectives, but "the ultimate decision was instead of an ethnographic study a field survey was necessary, so we focused our attention on the field survey approach." August 19, 2014 Transcript at p. 846 line 22 to 847, lines 8. Despite admitting that it was "necessary" to the analysis, no cultural resources review or field study incorporating any Sioux cultural expertise was ever conducted at the site or incorporated into any NEPA document. August 19, 2014 Transcript at p. 821, lines 3-7 (Ms. Yilma); id. at p. 875, lines 6-11 (Ms. Yilma).

Taken together, this testimony and evidence establishes NRC Staff's failure to conduct the necessary hard look under NEPA, as by their own admission, despite it being necessary to the analysis, no Sioux comments or reports were incorporated into the cultural resources reviews, and none of the parties that conducted any cultural review of the site, including field surveys, were trained, experienced, or competent to review or survey the area for, let alone determine impacts from the project to, the cultural resources of Sioux origin. In answering a follow-up question by Chairman Froehlich to Dr. Hannus asking whether, as Dr. Sabastian had testified, did Dr. Hannus believe that identification of Sioux traditional sites "depends on the knowledge and traditional culture practitioners," Dr. Hannus responded: "Yes, I mean, I absolutely would have to, because there isn't any other way the framework that I work within functions." August 19, 2014 Transcript at p. 860, lines 1-8. In short, admissions and testimony confirm that NRC Staff deferred to the applicant's unqualified consultants, while rejecting proposals to incorporate Sioux cultural expertise.

As a result of Powertech's and NRC Staff's coordinated inability to fulfill their obligations to properly ensure a competent cultural resources survey of the Dewey-Burdock site before approvals are given and the aquifers are impacted, EPA cannot rely on the NRC's NEPA documents to assess the cultural resources impacts of the proposed mine. Instead, the scope of EPA's consultation must match the scope of the UIC duties, which apply to the full life of the proposed mine, not the initial set of NRC-approved segments. Similarly, because NRC Staff has failed to fulfill its government-to-government consultation duties under the NHPA, EPA also cannot rely on the PA or any other NRC Staff consultation to fulfill its own obligations under the NHPA. Rather, EPA must delay any permitting action until a fully competent cultural resources survey is conducted and the Tribe and the public has an opportunity to review and comment on the potential impacts to those important resources. Additionally, EPA should reject the PA as inadequate and engage in meaningful and good-faith consultation with the Oglala Sioux Tribe professional staff and Tribal Council in order to ensure that, in coordination with the Tribe, all cultural resources are identified, impacts are assessed and mitigation measures are developed and implemented.

II. DE FACTO RULEMAKING

A full review of the documents relevant to the proposed Dewey-Burdock project demonstrate that EPA Region 8 has taken efforts to develop what it has referred to in internal documents as "guidance" with respect to how the agency will implement its permitting authority under the Safe Drinking Water Act ("SDWA"), 42 U.S.C. §§ 300h, *et seq.*, Underground Injection Control ("UIC") program, as it relates to ISL mining and processing of uranium. This information came to light in documents obtained via a Freedom of Information Act (FOIA) request submitted in February 2009 on behalf of multiple conservation and Native American organizations in both Colorado and South Dakota. Several significant documents from this period are omitted from the records EPA has made available publicly with respect to this project. The Tribe asserts that all of the documents and records, including all emails, reflecting the coordination between EPA and Powertech and any of its consultants must be made part of the administrative record for this proceeding, and must be disclosed to the public during the public comment process in order to allow for meaningful public review and comment of the proposed Draft UIC permits. Several of these documents are attached, which represent examples of the discussions improperly omitted from the existing public record.

The full set of documents reveal EPA's and Powertech's close coordination in developing regulatory requirements for the UIC permitting process. A draft of the resulting "guidance" is attached. This "guidance" was developed in consultation with the uranium mining industry and without public notice or public involvement. As discussed herein, this process was unlawful. In order to ensure compliance with the federal Administrative Procedure Act ("APA"), 5 U.S.C. §§ 701, *et seq.*, EPA must initiate a national rulemaking to ensure strong involvement from the public and stakeholders for the protection of underground sources of drinking water from the impacts of ISL uranium mining. In the meantime, while this rulemaking process is carried forward, EPA should suspend processing of currently filed applications for ISL uranium mining.

According to the agency's documents, the Dewey-Burdock UIC permit process currently underway through EPA Region 8 is the first instance in the nation where the EPA will be the direct permitting agency for a UIC Class III injection well for the purpose of injecting chemical fluids for dissolving and extracting uranium ores, through ISL uranium mining. The agency's documents also reveal EPA Region 8 staff concern with respect to the adequacy of the existing UIC regulations to provide the specificity necessary to directly implement the program. EPA Region 8's assessment is correct in this regard, which gives rise to serious concerns as to whether the regulations are sufficient to provide protection of underground sources of drinking water from threats posed by ISL uranium mining.

As EPA Region 8 is aware, the proposed Dewey-Burdock ISL project has created considerable controversy and drawn opposition from citizens, local governments, Native American tribal groups and governments, medical organizations, local business, agricultural interests, and conservationists based on the significant threats these ISL uranium mines pose to groundwater, local economies, public health, and cultural resources.

Overall, the documents obtained from EPA Region 8 via FOIA, including extensive email communications between EPA Region 8 staff and mining industry interests, reveal a

troubling lack of transparency and public involvement in the development of the so-called "guidance" documents. Importantly, the proposed "guidance" is highly substantive in nature and, at the least, sketches out several policy conclusions with respect to EPA's regulation of ISL uranium mines. For example, the proposed "guidance" effectively defines the terms "area of review" and "aquifer exemption boundary" as they will apply to all future EPA Region 8 UIC Class III applications. Such decisions will not only establish the equivalent of an obligatory policy for Region 8, but also have national policy implications and long-term environmental impacts. Thus, it appears that Region 8 was engaged in drafting needed changes to the UIC regulations without the benefit of the substantive and procedural protections of notice and comment rulemaking. This process neglects the rulemaking requirements of the APA and the SDWA requirement that only the Administrator may promulgate SDWA regulations. See 42 U.S.C. § 300h(a).

As noted above, there has been a lack of transparency and public involvement. The EPA Region 8 documents demonstrate that while the uranium mining industry and its scientists and consultants were extensively involved in the drafting and development of the new policies from the earliest stages, there were no efforts by EPA Region 8 to include the public or any public interest organization in the development of these important policies. An EPA Region 8 description of its activities in relation to its regulation of ISL uranium mining, including the extensive interaction with uranium industry representatives, is attached. This lack of public participation is difficult to harmonize with EPA Region 8's direct acknowledgement in the documents of the high level of public interest and controversy surrounding the subject of Powertech ISL uranium mining proposal, and its potential impact on local communities, economies, and natural resources in South Dakota. Indeed, as evidenced by the EPA's decision to revisit the uranium recovery standards, these are issues of national significance and interest.

In order to comply with both the APA and SWDA, and especially given the controversial impacts of ISL mining and the precedent-setting nature of any new regulations in this area, EPA (Region 8 or Headquarters) must suspend processing of currently filed applications and initiate a Tier 1 Rulemaking. Such an action is well grounded in past agency practice and will provide the benefit of the sound science, public participation, and careful review of available technologies and SDWA standards which are conducted during formal rulemaking. The regulatory changes are required before any further or final permits are issued. The regulatory deficiencies and changes and details included in the Region's proposed guidance represent a substantive and controversial regulatory development that implicate the agency's obligations under the SDWA and the Administrative Procedure Act ("APA"), 5 U.S.C. § 553. As the EPA is no doubt aware, the APA requires public notice and comment rulemaking whenever a federal agency embarks on substantive changes in or development of regulations. Id. The SDWA itself specifically states that "[a]ny regulation under this section shall be proposed and promulgated in accordance with section 553 of title 5 (relating to rulemaking)...." 42 U.S.C. § 300h(a)(2).

While not all federal agency policy pronouncements require APA notice and comment rulemaking, the federal courts have held that the critical factor in whether an

agency policy is properly considered an agency rule requiring APA compliance on one hand or mere guidance on the other is the extent to which the policy is binding on future agency conduct. Compliance with the APA's notice and comment rulemaking provisions is required whenever such a policy establishes a "binding norm" that effectively dictates the agency's regulatory discretion with respect to individual permitting decisions. See *Pacific Gas and Electric Co. v. Federal Power Commission*, 506 F.2d 33, 38 (D.C.Cir.1974); ***American Min. Congress v. Marshall***, 671 F.2d 1251 (10th Cir. 1982).

The "guidance" developed by Region 8 constitutes a "binding norm" in this instance. As noted above, EPA Region 8's "guidance" contains detailed analysis defining critical terms in the EPA's UIC regulations, which are to be applied to future UIC Class III permit applications (as evidenced by their application in this instance). Such definitive terms create binding norms, and these concepts must be defined by regulations promulgated through notice and comment rulemaking and approved by the Administrator, as required by law. Such notice and comment rulemaking is critical to the protection of groundwater in any proposed ISL uranium mining area. As such, APA notice and comment rulemaking in this instance is beneficial and legally required. At minimum, given the sharp controversy the Powertech ISL uranium mining project has generated in South Dakota, public involvement and participation in this rulemaking process is essential.

III. BASELINE WATER QUALITY INFORMATION IS LACKING

Powertech relies on the same data regarding the baseline water quality for its EPA permit applications as it did for its NRC license applications. The applicant has provided no significant baseline water quality information since the NRC license proceedings were conducted. Indeed, in response to comments from the Tribe during the NRC process specifically detailing the problems with lack of adequate baseline water quality data, NRC Staff confirmed that the applicant collected data from 2007 to 2009 and that "the NRC staff used this information when drafting the affected environmental section of the SEIS as well as analyzing impacts of the proposed action." FSEIS at E-32; Exhibit NRC-009-B-2.

Exacerbating these problems, NRC Staff stated that:

> the applicant will be required to conduct additional sampling if a license is granted to establish Commission-approved background groundwater quality before beginning operations in each proposed wellfield in accordance with 10 CFR Part 40, Appendix A, Criterion 5B(5). However, this does not mean that the NRC staff lacks sufficient baseline groundwater quality information to assess the environmental impacts of the proposed action.

FSEIS at E-32; Exhibit NRC-009-B. The same problems persist in the EPA UIC permitting process. The admitted data gaps, and the failure to gain additional sampling before the draft permits were issued, establishes that, like NRC Staff, EPA has not required or used the collection of any additional baseline data for its characterization of baseline water quality, but and that EPA will require additional data in the form of "well field packages" in order

to establish a credible baseline for use in the regulatory process. Thus, while the existing administrative record contains data from 2007-2009, the background water quality for use in the actual regulatory process for the facility will be established a future date, outside of any public process, and without the benefit of the public's review and comment.

This approach undermines the UIC permitting process, prevents the EPA from accurately assessing the potential impacts from the project, and prevents the public from being able to effectively review and comment on the project. The result is a lack of compliance with the SDWA and the UIC regulations.

The attached Opening Written Testimony of Dr. Robert E. Moran (Exhibit OST-001) submitted during the NRC hearing process demonstrates the failings of EPA's approach. Exhibit OST-001; Dr. Moran Opening Written Testimony at 16-18. Specifically, Dr. Moran notes the lack of analysis of impacts from past mining activities (p. 16), the lack of necessary information as to the chemical compositions and volumes of wastes, among others (p. 17), the potential bias of the data thus far provided (p. 18) along with the scientifically invalid tactic of requiring the Applicant to collect meaningful water quality data to be used in the configuration of mine design in the future and outside of the public review:

> The delayed production of this critical baseline information until after licensing is not scientifically defensible as it prevent establishment of a baseline on which to identify, disclose, and analyze environmental impacts, alternatives, and mitigation measures involved with the Dewey-Burdock proposal. A scientifically defensible monitoring and mitigation of an operating project is not possible based on the baseline data and analyses I have reviewed.

Exhibit OST-001 at 17.

The attached expert Rebuttal Testimony of Dr. Robert Moran also confirms that EPA has not adequately described the baseline conditions at the site using reasonably comprehensive data. Exhibit OST-018. For instance, Dr. Moran specifically opines that despite expectations that post-license collection of data is sufficient to fill in any gaps that currently exist, such a process deprives expert agencies, the public and the parties to this proceeding (and EPA staff) the opportunity to meaningfully review and evaluate the impacts from the proposed project during the permitting process. Exhibit OST-018, Rebuttal Testimony of Dr. Robert E. Moran at 2 (A.2).

Further, any assertions that this additional data cannot be obtained without full construction of final well-fields is unsupported and contradicted by the expert testimony of Dr. Moran. Dr. Moran opines that adequate baseline data can be gathered "without constructing the ultimate wellfield monitoring network." Id. Dr. Moran points to previous studies undertaken by TVA and Knight Piesold that conducted pump tests to gather baseline data prior to NRC approval. Id. Dr. Moran states that Powertech's consultant Mr. Demuth "confuses hydrological testing that is needed to establish, analyze, and disclose

the hydrogeological setting as part of the NEPA-based NRC permit-approval with the more specialized production tests Powertech will conduct on constructed wellfields." Id. In short, there is no legal, technical, or practical basis to forgo gathering this needed data as part of the UIC application process, or at minimum the EPA draft permit process.

At the hearing conducted in the NRC licensing process, Dr. Moran's testimony confirmed that additional data is necessary for a "complete" baseline analysis, including the collection of data for water quality constituents not presented in the company's application materials, such as strontium and lithium. See attached August 20, 2014 Transcript at p. 1007, line 24 to p. 1008, line 1. Consistent with Dr. Moran's testimony, applicant witness Mr. Demuth admitted that additional data is necessary to provide complete baseline data. Id. at p. 1012, lines 16-20.

Thus, Dr. Moran's expert opening, rebuttal, and live hearing testimony in the NRC administrative process demonstrates that EPA lacks the necessary information to meet its requirements for demonstrating a competent set of baseline data – and instead defers meaningful collection, disclosure, and analysis until a later date, only after the public have been denied the opportunity to comment on the baseline that reveals the affected environment that will be impacted. This critique is centered on EPA's plan to defer collection of baseline and to rely on future analysis of future baseline analyses conducted as part of the well field packages, to be provided only after license issuance. This is in effect an identical system adopted by NRC Staff, which deferred meaningful review of baseline information through a so-called Safety and Environmental Review Panel (SERP) – outside of its NEPA process and long after the public's opportunities for comment and review have run.

Further buttressing this argument is the attached Declaration of Dr. Richard Abitz detailing the requisite standards for scientific validity in a baseline analysis. Exhibit OST-001, at 2. See also, Moran Suppl. Decl. at ¶58 ("The [NRC Staff evaluation], like the Powertech Application, fails to define pre-operational baseline water quality and quantity—both in the ore zones and peripheral zones, both vertically and horizontally."); *accord* ¶¶ 47-74, 75, 82-84, 92-94, 95.

Overall, the Powertech submittal fails to adequately describe the affected aquifers at the site and on adjacent lands and fails to provide the required quantitative description of the chemical and radiological characteristics of these waters necessary to assess the impacts of the operation, including potential changes in water quality caused by the operations.

IV. INADEQUATE HYDROGEOLOGICAL ANALYSIS TO ASSESS POTENTIAL IMPACTS TO GROUNDWATER

The EPA analysis fails to provide sufficient information regarding the hydrologic and geological setting of the area. As a result, the documents and information provided, including the data included in the application materials, similarly fails to provide sufficient

information to establish potential effects of the project on the adjacent surface and ground-water resources, as required.

As with the NRC process, EPA relies on the applicant to submit adequate hydrogeologic data – but only **after** the public process is completed, after a final permit is issued, and with no chance for any public review. This approach violates the SDWA, EPA's UIC regulations, NEPA, and the APA because of the lack (and deferral of collection and review to a later date) of necessary data and analysis to ensure a credible review of impacts to groundwater. The evidence in the record demonstrates that the applicant has not conducted the necessary studies to identify "significant discontinuities, fractures, and channeled deposits."

This issue is addressed head-on by Dr. Moran, who provided expert testimony on the significant contradictory evidence in Powertech's data. Exhibit OST-001, at 18-22. Specifically, Dr. Moran opines on the overwhelming body of evidence undermining the conclusion that the production zone is hydraulically isolated from surrounding aquifers. Id. at 18-19. Dr. Moran further demonstrates that numerous potential pathways for groundwater conductivity, including inter-fingering sediments, fractures and faults, breccia pipes and/or collapse structures, and the 4000 to 6000 unidentified exploration boreholes present at the mine site. Id. at 20. Dr. Moran concludes that "these inconsistencies make clear that Powertech . . . failed to define the detailed, long-term hydrogeologic characteristics and behavior of the relevant Dewey-Burdock aquifers and adjacent sediments." Id.

The lack of data extends to the lack of analysis of evidence of "fault zones" in the proposed mining area (Exhibit OST-001, p. 20-21) as well as the existence of a "trench" in the potentiometric surface of the Fall River aquifer. Id. at 21. Breccia pipe formations and collapse features round out the list of potential migration pathways for which the application fails to address. Id. at 21-22.

Similarly, Dr. Moran's attached Rebuttal Testimony reinforces this issue, pointing out that Powertech's own witnesses in the NRC process have contradicted the scientific integrity of the pump test data which form the basis of the applicant's analysis. Exhibit OST-018 at 4. The Powertech consultants also contradict themselves with regard to the impact of the unidentified boreholes, arguing in some places that they may have closed by themselves, but then also that they are open, and that the effect of the boreholes have rendered the existing pump test data suspect. Id. at 3. Further, Dr. Moran affirms that the data currently forming the basis of the hydrogeological analysis underpinning the EPA's draft permits is "inadequate to establish a hydrogeological … baseline." Id. at 3. Dr. Moran concludes based on an extensive review of the information presented, including conclusions by every other scientist (except Powertech's) that has reviewed the historic pump tests at the site, that the supposed aquitards at the site are indeed leaky. Id. at 6. Dr. Moran goes into extensive detail as to the particular bases for the lack of acceptable industry-standard methodology and assumptions employed by Mr. Demuth in his conclusions as to the lack of confining ability of the formations at the site. Id. at 6-7.

These issues of fluid containment were also explored during the NRC hearing, during which serious question was cast on whether the existing analysis and assumptions relied upon by the applicant could demonstrate an ability to contain the mining fluid. As a starting point, Powertech's witness Mr. Lawrence readily admitted that in order to ensure containment of the fluid, the operator would need for the Fuson Shale to be relatively impermeable. August 20, 2014 Transcript at p. 1047, lines 20-23. However, as observed by Judge Barnett, "[i]nterpretations of both the 1979 and 2008 pumping test results were found to be consistent with a leaky confined aquifer model. ... Based on the results of the numerical model, the Applicant concluded that vertical leakage through the Fuson shale is caused by improperly installed wells or improperly abandoned boreholes. So it does appear in the FSEIS that it acknowledges that it is leaky, whether it is coming from boreholes or whatever else, it is leaky." Id. at p. 1050, line 18 to p. 1051, line 5. In response, NRC Staff witness Mr. Prikryl responded: "Yes, that's correct." Id. at p. 1051, line 8. Applicant witness Mr. Lawrence also agreed: "Yes, there were certainly conditions that demonstrated communication." Id. at 1051, lines 15-16.

The applicant witness Mr. Lawrence attempted to explain that such a "leaky" condition would have to be rectified in order to successfully contain the mining fluids. In doing so, applicant witness Mr. Lawrence stated "[t]hat goes back to the development of the wellfield data package. If you run a specific test in the area that you plan to mine, and identify leakage that is occurring, particularly if you can identify that it is an improperly abandoned borehole or improperly constructed well, as was the case in these tests, you can remedy that situation, plug the borehole, rerun the tests and show that basically you have retained confinement." Id. at p. 1051, line 22 to p. 1052, line 5. Critically, however, Mr. Lawrence then admitted that any such additional work of actually demonstrating the ability to contain the fluid would occur "outside of the FSEIS." Id. at p. 1052, lines 6-8. This admission is critical because it demonstrates that, although the applicant has admitted that impermeability of the Fuson shale is critical to effective fluid migration, and that the Fuson shale is leaking, all additional review of that significant problem will be deferred until after the EPA's draft permit process, and after any ability of the public to review and/or comment on this critical information.

Such a scheme negates the ability of the public to provide meaningful comment on the EPA's UIC permitting process. The applicant's materials and EPA draft permits provide no information on where these mysterious leaking boreholes are, or why the applicant and EPA could not have conducted available analyses described by Dr.Moran's written expert testimony to demonstrate whether they in fact could find and plug the boreholes, rerun the test(s) and demonstrate the ability to retain confinement. This lack of analysis unacceptably leaves the public in the dark as to whether this mitigation will work or what the potential impacts may be should the remedy not be successful.

Upon further questioning by Judge Barnett, the applicant witness Mr. Demuth admitted that the applicant's test data did show a lack of sufficient confinement at least in portions of the project area "where we have a well which is completed in both zones and allows it to communicate." Id. at p. 1054, lines 11-13. In that case, Mr. Demuth states, "there may be one or two unplugged exploration boreholes which are identified in the

application. So in that area, the wellfield, any wellfield test is going to have to be examined very carefully." Id. at 1054, lines 12-17. Thus, the applicant witnesses admit that sufficient study has not been completed to demonstrate the ability to contain the mining fluids, but rather a later, post-permit, detailed scientific review will be necessary to "examine" this issue "very carefully." Where such serious questions exist as to such fundamental issues as the ability to contain mining fluids, those issues must be explored and resolved prior to the close of the public's ability to comment on EPA's draft permits.

Tellingly, when NRC Staff witness Mr. Prikryl was asked the same question about how NRC Staff reconciles the past tests, admitted into evidence in that proceeding and attached here, which show leaks in the supposed confining layers at the site, Mr. Prikryl responded: "Well, I'm not familiar with this pump test, what shaft they're talking about or what the location of the pump test itself." Id. at p. 1056, lines 5-12. When queried further as to whether NRC Staff had reviewed this fundamental piece of evidence, NRC Staff witness Mr. Lancaster could not give a satisfactory answer, stating that "we requested this information is our [RAIs] and I think as I recall their conclusions were it's leaky because of a variety of reasons. And one could be the boreholes not being properly abandoned or not being abandoned at all with the correct procedure for plugging and that sort of thing. We recognize that the pump tests show that there is leakiness." Id. at p. 1056, line 25 to p. 1057, line 8.

Consistent with the admissions of NRC Staff and applicant witnesses, the FSEIS fails to conduct the analysis necessary to determine the actual cause of this leakiness or verify the borehole theory. For this reason, EPA's reliance on the NRC Staff environmental and hydrogeologic reviews is unfounded. See also Exhibit OST-018 (Rebuttal Testimony of Dr. Moran) at 3(opining that such lack of investigation fails to meet accepted scientific standards). At minimum, the Board questioning at the hearing confirms that significant questions still remain as to the hydrogeology at the site, and that instead of addressing them prior to issuing the draft permits, EPA Region 8 appears to be content to issue final permits and make these determinations only after the applicant submits its wellfield hydrogeologic data packages – long after all opportunities for public review and comment have expired. Deferring the collection and review of this critical, and admittedly necessary, information until after the permits are issued violates the SDWA, UIC regulations, NEPA, and the Administrative Procedure Act.

Similarly, testimony given by Dr. LaGarry at the NRC hearing demonstrated that the applicant's analysis, which also forms the basis of its UIC application materials, failed to account for faults and fractures in the geology at the site which could cause similar leaky conditions as have been confirmed in the confining layers at the site. See August 20, 2014 Transcript at p. 1065 line 7 to p. 1067, line 10. Upon follow up from Judge Cole, Dr. LaGarry confirmed that in his professional opinion, "that one [report] that was just shown that we were just discussing, the TVA concluded that the leakage might have been caused by an unplugged borehole or some previously as yet undescribed structural feature in that very page we were just reviewing." *Id.* at p. 1069, line 24 to p. 1070, line 4. Indeed, the TVA report referenced demonstrates faults and fractures are prevalent in the area. Exhibit OST-009 at 60. Applicant witness Mr. Lawrence responded that the study does not

conclusively demonstrate fractures in the precise permit area at issue, but his testimony falls far short of demonstrating the absence of such fractures. August 20, 2014 Transcript at p. 1071, lines 2-3. Thus, Mr. Lawrence's testimony confirms that applicant's data and analysis provided to date fails to provide a credible explanation for the TVA's leakage conclusions.

Dr. LaGarry credibly opines that "[s]o this TVA report recognizes that the whole area is fractured and that breccia pipes form along these fractures, but they didn't make it into the scientific literature for maps. But if I was to take a geological mapping field crew out there, we would find them because we're looking for them." Id. at p. 1074, lines 4-9. See also, id. at p. 1074, line 14 to p. 1077, line 23 (Dr. LaGarry discussing the commonly overlooked faults and fractures in the area); p. 1109, line 15 to p. 1111, line 2 (discussion of USGS report (attached, and referenced therein as Exhibit NRC-081 at 7) demonstrating extensive breccia pipe formation in the area).

Dr. LaGarry's (and Dr. Moran's) testimony is consistent with the attached TVA report (Exhibit OST-009), the USGS report (Exhibit NRC-081), the USGS-derived Gott map (Exhibit APP-015(f)), all of which show faults, fractures, and breccia pipes in the immediate area of the proposed project, and thus is far more credible testimony that the geology is highly variable in the area given the scientific evidence. At minimum, this corroboration between the Tribe's expert testimony and the extensive geological reports demonstrates EPA's failure to conduct the necessary physical surveys to confirm or deny the presence of these geological features – especially considering the applicant's pump tests proving leaky confining layers. Instead, EPA's draft permit materials rely on the applicant's assumptions, unsupported by empirical data or detailed site investigation, that somehow in a sea of geological fractures and faults surrounding the Black Hills and particularly in this area, the applicant's chosen site is free of geological irregularity that would affect fluid containment simply because there is no "smoking gun" in the reports showing a major fault directly crossing the site. In this case, the SDWA, UIC regulations, NEPA, and the APA require EPA to do more to reconcile the evidence in order to meet its statutory obligations. Deferring this analysis to a later date through wellfield hydrogeologic data packages or injection authorization data packages is not lawful.

Instead of conducting the rigorous scientific review necessary to determine the hydrogeology conditions of the area, as noted by Dr. Moran, Dr. LaGarry, and others in testimony and during the hearing, EPA simply proposes to allow the applicant to collect this information in the future, after all public commenting is complete and after the permits are issued, through the use of a Safety and Environmental Review Panel (SERP). Notably, this post-permit SERP review is not just a confirmation of information already in existence – including production and injection well patterns and location of monitor wells; documentation of wellfield geology (e.g., geologic cross sections and isopach maps of production zone sand and overlying and underlying confining units); pumping test results; sufficient information to demonstrate that perimeter production zone monitor wells adequately communicate with the production zone; and data and statistical methods used to compute NRC-approved background water quality. As Dr. Moran testifies, this approach

to defer the meaningful collection of data to a future, post-permit, non-public process is not scientifically-defensible. Exhibit OST-001, at 22-23.

The only additional information the applicant appears to have provided is a 2012 report from Petrotek regarding numerical modeling of the hydrogeology and the bore hole data. As EPA is aware, the NRC Staff's FSEIS, upon which EPA relies heavily, in turn relies heavily on the Petrotek report throughout its discussion of confinement issues, as well as geology and water usage impacts. Dr. Moran discusses this Petrotek modeling report and shows that it is not sufficient to resolve the issues with the existing project data. See Exhibit OST-001, Moran Opening Testimony at 23-26. Specifically, the Petrotek Report relies on inadequately detailed inputs into its model, including for hydraulic conductivity and assumptions of no water flows vertically, which is contradicted by the scientific literature, and unsupported assumptions as to the effect of unplugged boreholes in the area and the lack of any faults or fractures. Id. at 23-24. Dr. Moran further points out the contradictions between the Petrotek Report and NRC Staff conclusions in the FSEIS, upon which EPA relies, with regard to the existence of fractures or other flow paths. Id. at 24. Dr. Moran completes his review with a litany of unsupported assumptions made in the Petrotek model that skew the results and render it unreliable as a scientific tool to predict hydraulic conductivity at the site – the ability of the hydrogeology to contain the contamination associated with ISL mining. Id. at 24-26.

At the conclusion of the NRC hearing, it was divulged that Powertech had withheld significant data regarding bore holes at the proposed mine site. EPA must affirmatively request and conduct a comprehensive review of this data in order to make any conclusions regarding bore holes with regard to the SDWA and UIC requirements. Any failure by EPA to conduct its own review of this information would violate its statutory and regulatory responsibilities under the SDWA, UIC regulations, NEPA, and APA.

Regarding this post-hearing bore hole data, Dr. LaGarry provided a detailed expert review of that information which confirms his hearing testimony that there are substantial questions as to the hydrogeologic conditions at the site that warrant additional investigation and analysis. Exhibit OST-029 (Written Supplemental Testimony of Dr. Hannan LaGarry). In that document, Dr. LaGarry testifies that his review of the bore hole data demonstrates that the data discloses, at minimum: 140 open, uncased holes; 16 previously cased, redrilled open holes; 4 records of artesian water; 13 records of holes plugged with wooden fenceposts; 6 records of holes plugged with broken steel; 12 records of faults within or beside drilled holes; and 1 drawing of 2 faults and a sink hole within a drilled transect. Exhibit OST-029 at 2. Dr. LaGarry goes on to testify as to the likely consequence of these conditions, all of which support the Tribe's assertions that additional investigation of the site is necessary in order to satisfy the SDWA and UIC statutory and regulatory requirements, and in order for the applicant to demonstrate an ability to contain the mining fluids.

Lastly, the cumulative impacts analysis prepared by EPA does not appear to account for (1) the September 2014 two-page announcement from U.S. EPA stating that it has completed a Preliminary Assessment (PA) of the Darrow/Freezeout/Triangle

abandoned uranium mines located within the area of the proposed Dewey-Burdock project; and (2) the September 24, 2014 document from Seagull Environmental Technologies captioned as "Preliminary Assessment Report regarding the Darrow/Freezeout/Triangle Uranium Mine Site near Edgemont, South Dakota, EPA ID: SDN000803095." Attached, labeled Ex. OST-026.

Specifically, EPA's analysis must analyze the causation link not just between the unreclaimed surface mines and surface water contamination, but also ground water contamination. These EPA documents raise the issue of a causal link to the contamination of ground water and nearby ground water wells. The lack of analysis of these issues demonstrates a lack of basis for any findings regarding the baseline hydrogeology, and particularly groundwater connectivity issues at the site.

EPA concedes in these documents that additional data and sample collection for soils and surface waters is needed beyond what NRC Staff required or EPA has yet obtained. EPA states further that this data collection is necessary to better characterize and define source areas at the unclaimed uranium mines. Ex. OST-026 at 30. Importantly, these are the "source areas" for the "observed release to groundwater" that "has occurred at the site." Id. Thus, the fact that the proposed new sampling includes only soil and surface waters does not disconnect this issue from the "observed" ground water contamination.

Further, EPA's analysis reveals that "[s]ome significant data gaps exist within the information reported." Exhibit OST-026 at 29. BEPA analysis reveals for the first time that while "[g]roundwater samples were collected within the area of the Site from various wells; however, lack of ground water sampling data from near and upgradient of the Site limited availability of reliable background concentrations." Id. Also, EPA points out that although soil samples were collected at the site by Powertech, "of the 25 samples collected, only three were analyzed for additional radionuclides including uranium, Pb-210, and Th-230 – the other known contaminants on site." Id. Together, these EPA documents demonstrate that additional investigation is necessary at the site in order to establish the scientifically credible baseline analysis required by the SWDA, UIC regulations, NEPA, and the APA.

All considered, the discussion presented herein demonstrates that the applicant, and EPA, have failed to provide an adequate baseline geology and hydrogeology analysis and as a result fails to adequately analyze the impacts associated with the proposed mine, particularly on groundwater resources and with respect to the applicant's ability to contain mining fluid.

V. FAILURE TO ADEQUATELY DESCRIBE OR ANALYZE PROPOSED MITIGATION MEASURES

Although EPA lists various mitigation measures that may be used to lessen the impacts from the proposed mining operations, these lists lack any detail necessary for the decisionmakers or public to assess the likely effectiveness of these measures. Further, many of the most crucial mitigation proposals are simply proposals to develop mitigation plans in the future. Reliance on a future, as yet-unsubmitted, mitigation to prevent/mitigate

adverse impacts to the resources at the site fails to provide the detail necessary to gauge the impacts of the proposed mining operation.

The as-yet developed mitigation relied upon in the EPA's analysis even includes such basic and critical things as post-permit issuance pump tests and hydrologic wellfield packages to determine the ability to contain mining fluids and future consultation under the National Historic Preservation Act to develop and evaluate alternatives or modifications to the undertaking that could avoid, minimize or mitigate adverse effects on historic properties. These represent fundamental aspects and impacts of the mining and in order to assess the impacts of the mine proposal cannot be simply deferred to a later date.

Similarly, the application material and EPA analysis inappropriately defers meaningful review of mitigation until later permits to be considered by the State of South Dakota. These deferred analyses include detailed monitoring and mitigation plan for the state of South Dakota permits associated with the potential land application of wastes, as well as the groundwater discharge permit for the land application. Definition of critical features are left to the future, such as the monitoring program with wells that define the perimeter of operational pollution.

Other mitigation plans left to future development include an avian and wildlife impact and mitigation plans that are being developed in concert with state and federal agencies necessary to keep wildlife from risking contamination from mine site facilities. However, the details of these plans are not proposed to be developed until approved by the South Dakota Department of Environment and Natural Resources and Game and Fish as a permit condition before any construction begins. Thus, instead of analysis in the EPA documentation, the agency simply lists possible mitigation measures without a meaningful review of the details or the effectiveness of the proposed measures. This in turn leaves the public without the ability to provide meaningful input on the mitigation plans.

Instead of presenting well-developed mitigation plans and analyzing their effectiveness in eliminating impacts, the EPA and applicant simply list and mention mitigation measures, and assert that they may be successful in eliminating or substantially reducing the Project's adverse impacts. Under relevant administrative law, a competent cumulative impact review requires that assertions of effectiveness must be supported by substantial evidence in the record. Without the necessary analysis in the impact review, EPA conclusions are arbitrary and capricious in relying on mitigation to conclude that there would be no significant impact to impacts resources.

Review of EPA's impact reviews reveals that disclosure and analysis of impacts are insufficient where the mitigation analysis consists largely, if not exclusively, of a list of plans to be developed later, outside the permitting process and the public review. For instance, with regard to the cultural resources impacts, the agency concedes that consultation is not complete, although that is the process through which impacts are assessed and mitigated. As discussed herein, reliance on a discredited Programmatic Agreement ("PA") is insufficient. Indeed, the PA itself simply defers mitigation planning to some future time.

Instead of providing a reasonably complete discussion of mitigation and providing an analysis of the effectiveness of those mitigation measures, the EPA analysis repeatedly refers to various commitments by the applicant to mitigate impacts by submitting plans in the future as a result of license conditions imposed by the draft permits and the NRC process. These future plans encompass mitigation for a broad scope of impacts, including such basic elements as requiring the applicant to conduct hydrogeological characterization and aquifer pumping tests in each wellfield to examine the hydraulic integrity of the Fuson Shale, which separates the Chilson and Fall River aquifers; a commitment from the applicant to locating unknown boreholes or wells identified through aquifer pump testing, and committing to plugging and abandoning historical wells and exploration holes, holes drilled by the applicant and any wells that fail mechanical integrity tests.

However, no discussion or analysis is provided to explain how an applicant might go about identifying abandoned holes or analyzing the effectiveness of long-after-the-fact plugging and abandonment, nor is any discussion given to what methodology or effectiveness criteria accompanies the pump tests or monitoring well systems. Similar gaps in the analysis exist in the failure of the EPA analysis to assess a plan to review groundwater restoration only for a period of 12 months. There is no support of basis for this time period, nor any discussion of the basis or effectiveness of such a time period. Further, no alternative time periods were analyzed.

Other proposed groundwater impact mitigation that lacks reasonably complete review and analysis as to effectiveness include a proposed, but unevaluated, monitoring well network for the Fall River aquifer in the Burdock area for those wellfields in which the Chilson aquifer is in the production zone in order to address uncertainties in confining properties of the Fuson Shale because leakage may occur through the Fuson Shale and draw-down induced migration of radiological contaminants from abandoned open pit mines in the Burdock area. Despite having none of this information or plans developed, the EPA nevertheless concludes that the risks of this type of contamination are expected to be small. Such unsubstantiated conclusions based on unsubmitted, unreviewed, and even undeveloped mitigation plans are not allowable under the SDWA, UIC regulations, NEPA, or APA.

Historic evidence demonstrates that ISL uranium mines have a very poor record of restoring ground water aquifers – in fact, none have ever actually restored an aquifer used to conduct ISL uranium mining. See J.K. Otton, S. Hall, "In-situ recovery uranium mining in the United States: Overview of production and remediation issues," U.S. Geological Survey, 2009 (IAEA-CN-175/87), Hall, S. "Groundwater Restoration at Uranium In-Situ Recovery Mines, South Texas Coastal Plain," USGS Open File Report 2009-1143 (2009), Darling, B., "Report on Findings Related to the Restoration of In-Situ Uranium Mines in South Texas," Southwest Groundwater Consulting, LLC (2008). The EPA cannot provide information to the public concerning unmitigated impacts where groundwater mitigation plans have not been developed or analyzed for effectiveness.

The same problems exist where the EPA analysis lacks sufficient detail and simply requires plans to be submitted in the future to address other impacts, including air impacts, land disposal of radioactive waste, wildlife protections, and BMPs for storm water control. As discussed, for the most part, these mitigation measures are simply plans to make plans at some point in the future – outside of the public process and shielded from public review or comment. Such assurances, without any details as to the mitigation to be proposed and without evaluation of how effective these restorations efforts are expected to be, do not satisfy EPA's obligations.

Other aspects of the EPA and applicant analysis suffer from the same frailty. Specific examples of mitigation measures that are vaguely and inadequately referenced include:

- Reliance on the future submission and potential issuance of a National Pollution Discharge Elimination Standards ("NPDES") permit to specify mitigation measures and best management practices ("BMPs") to prevent and clean up spills.

- A Fish and Wildlife Service ("FWS") raptor monitoring and mitigation plan has not been developed despite confirmed raptor activity in the project area.

- FWS permits to avoid and mitigate impacts to Bald Eagles' use of three existing Bald Eagle nests.

- Ongoing development of mitigation plans for listed species.

- Generic reference to working BLM mitigation and reclamation guidelines.

- Vaguely referenced and unspecified sound abatement controls.

- Generically referenced mitigation of evaporation pond impacts that are and deferred to later analysis under the Clean Air Act's Hazardous Air Pollution provisions.

- Groundwater mitigation where Powertech excluded such mitigation measures from its proposal or merely assumed compliance with applicable requirements.

In summary, EPA has not met its duty to analyze the impacts of the proposal, cumulative and otherwise.

Lastly on this point, the EPA and Powertech documents continues to rely on Powertech's intent to dispose of its liquid chemical waste via a Class V underground injection control permit. However, the disposal of waste, and particularly radioactive waste, below the lower-most aquifer that serves as an Underground Source of Drinking Water (USDW), as proposed here, is not a Class V activity. Rather, such disposal is a

Class I underground disposal well. Compare, 40 C.F.R. § 144.80(a) (Class I – deep injection) with 40 C.F.R. § 144.80(e) (Class V – shallow injection). Further demonstrating this fact is the State of South Dakota's Department of Environment and Natural Resources, which classifies any well that proposes to be used for injection of either hazardous or non-hazardous liquid waste, or municipal waste, as a Class I UIC well. See, Chart located on the State of South Dakota's website: http://denr.sd.gov/des/gw/UIC/UIC_Chart.aspx. Importantly, the State of South Dakota specifically and unambiguously precludes operation or construction of any Class I UIC wells within its borders. Indeed, the applicable regulatory provision is even broader, stating in its entirety: "Class I and IV disposal wells prohibited. No injection through a well **which can be defined as** Class I or IV is allowed." S.D. Admin. R. § 74:55:02:02 (emphasis added). This is a significant issue, which the EPA analysis must address.

VI. INADEQUATE ANALYSIS OF DISPOSAL OF SOLID 11E2 BYPRODUCT MATERIAL

The EPA and applicant documentation indicate an intent to use the White Mesa Uranium Mill near the White Mesa Ute Community in Utah as the site for disposal of the radioactive wastes (known as 11e2 Byproduct material) generated by at the proposed Powertech Facility. The EPA analysis fails to acknowledge that the White Mesa Mill is not licensed to receive or dispose of all forms of Powertech's 11e2 Byproduct Material. EPA's draft permits do not, and cannot, authorize Powertech to dispose of 11e2 Byproduct Material at White Mesa. EPA appears to have failed to compare the impacts of transporting and disposing of the solid 11e2 Byproduct Material in Utah against any other alternative disposal site. Further, EPA's cumulative impact report fails to address the cumulative impact or alternatives to Utah licensing the White Mesa Mill as the disposal facility for the ISL wastes.

The EPA documents fail to provide a meaningful review of foreseeable impacts of generating many tons of solid 11e2 Byproduct Materials. Instead, EPA relies on blanket statements that permanent disposal will simply occur in conformance with applicable laws. This uncritical approach does not analyze any of the applicable criteria of regulations applicable to such 11e2 Byproduct Material disposal.

A proper review by EPA must ensure that the impacts and alternatives of creation, storage, and disposal of mill tailings – aka 11e2 Byproduct Material - are fully analyzed and addressed. Permanent disposal of solid 11e2 Byproduct material is a central feature of the proposed mining operation and a competent review must include an analysis of the impacts or alternatives to shipment and disposal at White Mesa. The NRC environmental documents confirm that White Mesa lacks a license approval from Utah to accept and dispose of the wastes created by the draft license or other NRC-licensed ISL facilities in the region. However, neither NRC's nor EPA's analysis includes a review of the impacts such disposition would entail, compares those impacts to other reasonable disposal alternatives, or assess whether disposal at White Mesa facility can be accomplished in accordance with applicable State and federal requirements.

The EPA's cursory discussion of the disposal of Powertech's 11e2 material contains no analysis of whether or not Utah law or the Mill owner's (Energy Fuels) license would allow the interstate transport and disposal of this waste given the history of leaks and violations at the White Mesa facility. Interstate transportation impacts across the Intermountain West are evident, but are dismissed without specific analysis. The EPA presents no information on the type of containers that would be required for the shipments to White Mesa and no corresponding information on the moisture content of the solid 11e2 Byproduct Materials or the anticipated decommissioning wastes.

EPA identifies no other site that is currently licensed to dispose of 11e2 Byproduct Material, implying that no other licensed facility exists in the United States that could accept the Powertech 11e2 Byproduct Material. Whether or not this is the case, White Mesa is not currently licensed to accept Powertech wastes.

The failure to address and license the disposal of solid 11e2 Byproduct Material is not a technical deficiency that can be ignored or pushed off until a later time. EPA has a duty to provide specific information, analysis, and alternatives regarding this major feature of an ISL operation in order to allow the Tribe, the Ute Mountain Ute Tribe, the public, and other government decisionmakers to conduct a meaningful analysis of the full scope of environmental impacts involved with Powertech's proposal.

Upon selecting the White Mesa Mill as the proposed destination for the waste from this proposal and the region, as the EPA documentation has done, EPA must follow through with the necessary analysis. The cumulative impacts report lacks analysis of disposal alternatives, including, but not limited to, access, geology, hydrogeology, quantitative impacts upon water supplies for domestic use, livestock, agriculture, non-domesticated plants and animals, and qualitative on-going and subsequent impacts to water supplies due to releases of chemicals into the surface, groundwater and aquifers flowing through the disposal site. Without such an analysis, EPA, the public, other governmental entities, and the Tribe have no basis to identify and assess alternatives to the license application and find ways to avoid or mitigate possible adverse environmental impacts of the proposed mine.

EPA must provide extra scrutiny to the packaging and transport of these wastes. Other NRC-licensed ISL projects have sent unspecified liquid radioactive wastes in leaking trucks.

The apparent violations involving the Smith Ranch include:

1. the failure to accurately assess the activity of pond sediment and barium sulfate sludge waste shipments;
2. the failure to adequately report the total activity for waste and resin shipments on the associated shipping documents;
3. the failure to accurately label waste shipment packages;
4. the failure to classify and ship the waste packages as Low Specific Activity level two (LSA-II) material;

5. the failure to ship LSA-II waste material in appropriate containers;
6. the failure to ensure by examination or appropriate tests that packages were proper for the contents to be shipped and closure devices were properly secured;
7. the failure to perform evaluations or perform tests that ensured the transportation package would be capable of withstanding the effects of any acceleration and vibration normally incident to transportation;
8. the failure to provide the name of each radionuclide listed and an accurate chemical description of contents; and
9. the failure to provide function specific training to a hazmat employee concerning the requirements that are specifically applicable to the functions the employee performed.

http://www.wise-uranium.org/umopuswy.html#SMITHR (NRC Inspection Report Apr. 3, 2017) The WISE-Uranium site reports a series of problems indicating the ISL industry appears to be plagued with irregularities and other problems that question NRC's licensing and regulatory diligence. Id., see also http://www.wise-uranium.org/new.html (ISL Spill of the Day). Under these circumstances, EPA must not simply rely on NRC's assumptions and must instead diligently investigate and carry out its own analysis of the radioactive and hazardous waste stream involved with the SDWA permitting.

VII. THE EPA HAS AN INDEPENDENT DUTY TO CARRY OUT WILDLIFE SURVEYS AND TO COMPLY WITH THE ENDANGERED SPECIES ACT AND MIGRATORY BIRD TREATY ACT.

Even though the federal approval process has been segmented into individual approvals by NRC, BLM and EPA over the course of a decade, each federal agency (and staff) must satisfy out its independent duties to comply with the Endangered Species Act (16 U.S.C. § 1531 et. seq) ("ESA"), Migratory Bird Treaty Act ("MBTA"), and Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. §§ 668-668d). Each agency must demonstrate compliance before taking action that could take, kill, harm, or otherwise impact the protected species. Failure to comply with these laws can subject the agency and its staff to civil and criminal penalties, unless the harm to the protected species is allowed by a lawfully approved permit issued by the U.S. Fish and Wildlife Service ("U.S. FWS"). EPA lacks U.S. FWS's special expertise in wildlife, and it is U.S. FWS that has permitting authority under federal wildlife laws. For ESA-listed species, EPA and must use "all methods and procedures which are necessary" to "prevent the loss of any endangered species, regardless of the cost." Roosevelt Campobello Intern. Park v. U.S. E.P.A., 684 F.2d 1041, 1048-49 (1st Cir. 1982), *quoting* TVA v. Hill, 437 U.S. at 185, 188 n.34 (1978).

Powertech and NRC prepared biological surveys that were wholly inadequate and limited in scope. Over the course of a decade, those surveys have become stale and do not correspond to current ecological baselines and status of current listings. Even with the limited survey methods, NRC determined that the Powertech project may affect and even cause prohibited take to listed species, including Whooping Cranes, Greater sage grouse (active leks), Bald Eagles, and Golden Eagles. Courts have set aside agency action that lacks accurate and current data on Greater sage grouse because "inaccurate information

and unsupported assumption materially impeded informed decisionmaking and public participation. Or. Nat. Desert Ass'n v. Jewell, 840 F.3d 562, 570 (9th Cir. 2016). EPA cannot simply turn a blind eye to the protected wildlife that may be affected by the activities subject to SDWA permitting.

NRC's FSEIS confirms impacts to MTBA-listed species. See, e.g., FSEIS at 4-97 to 4-98 ("All of these birds are BLM sensitive species and protected by the MBTA."). NRC's FSEIS confirmed that prohibited take of protected species:

> NRC staff expect that similar potential impacts described in SEIS Section 4.6.1.1.1.1.2, including injury or mortality from vehicles and electrical lines, fragmentation, vegetation conversion, and loss of breeding habitat, for nongame and migratory birds will also potentially impact chestnut-collared longspur, dickcissel, loggerhead shrike, and blue-grey gnatcatcher.

FSEIS at 4-98.

EPA's ESA consultation duties, 16 U.S.C. § 1536(a)(2) ("Section 7") are triggered because Section 7 "appl[ies] to all actions in which there is discretionary Federal involvement or control." 50 C.F.R. § 402.03. "Action" is defined as "all activities or programs of any kind authorized or carried out, in whole or in part, by Federal agencies…." 50 C.F.R. § 402.02. EPA is carrying out agency action, and therefore must carry out Section 7 consultation duties or risk civil and criminal penalties for take. Similarly, Powertech does not appear to have applied for a Section 10 permit, and similarly faces ESA penalties for any "take" it may cause. 16 U.S.C. § 1539(a)(1)(B); 50 C.F.R. § 17.32(b).

NRC's FSEIS reveals that active bald eagle and other raptor nests are known to exist in and near the proposed project site. FSEIS at 4-147, *accord* at 3-46 ("Five confirmed, intact raptor nests and one potential nest site were observed within the proposed project area, and the applicant identified two additional nests within a 1.6-km [1-mi] radius of the study area (Powertech, 2009a)"). EPA's SDWA permitting thus is likely involves prohibited take under federal wildlife laws, including direct and cumulative impacts on normal breeding, feeding, and/or sheltering behavior of bald eagles due to at least one confirmed, active nest in the project area. FSEIS at 3-46 to 3-47. Similarly, MTBA-listed raptor species, including "red-tailed hawk, American kestrel, and northern harrier [which] were the most commonly seen raptor species in the proposed project area and will be the primary raptor species impacted by project activities." FSEIS at 4-149.

EPA's SDWA duties independently trigger compliance with federal wildlife laws before any decisions can be issued on Powertech's application.

ORDINANCE NO. 07-40

ORDINANCE OF THE OGLALA SIOUX TRIBAL COUNCIL
FOR THE OGLALA SIOUX TRIBE
(An Unincorporated Tribe)

ORDINANCE OF THE OGLALA SIOUX TRIBAL COUNCIL ENACTING THE OGLALA SIOUX TRIBE NATURAL RESOURCES PROTECTION ACT OF 2007.

WHEREAS, the Oglala Sioux Tribe has adopted its Constitution and By-Laws by referendum vote on December 14, 1935, in accordance with Section 16 of the Indian Reorganization Act of 1934 (25 U.S.C. § 476), and under Article IV of the Oglala Sioux Tribe Constitution the Oglala Sioux Tribal Council is the governing body of the Pine Ridge Indian Reservation, and

WHEREAS, the Oglala Sioux Tribal Council is vested with authority "to protect and preserve the natural resources of the Tribe, and to regulate the use and disposition of property upon the reservation" under Article IV, Section 1(m) of the Oglala Sioux Tribal Constitution, and (n) "to protect the health and general welfare of the Tribe", and

WHEREAS, the purpose of the Oglala Sioux Tribe's Natural Resources Protection Act of 2007 is to ensure that no damage will come to the people, the culture, the environment, including the air and water, and economy of the Oglala Sioux Tribe because of uranium mining or processing in the region of the Upper Midwestern United States, and

WHEREAS, the Oglala Sioux Tribal Council finds that the wise and sustainable use of the Natural Resources traditionally has been and remains a matter of paramount governmental interest to the Oglala Sioux Tribe and a fundamental exercise of Oglala Sioux Tribal sovereignty, and

WHEREAS, the Oglala Sioux Tribal Council supports preserving and protecting all of the natural resources within the confines of the Pine Ridge Indian Reservation especially the air, water, and earth as these resources are the foundation of life, and

WHEREAS, the Oglala Sioux Tribal Council affirms that it is the duty and responsibility of the Oglala Sioux Tribe to protect and preserve the natural world in its purest form for the life of future generations, and

WHEREAS, the Oglala Sioux Tribal Council upholds the right and freedom of the people to be respected, honored and protected with a healthy physical and mental environment, and

WHEREAS, the Oglala Sioux Tribal Council finds that there is a reasonable expectation that future mining and processing of uranium in the region of the Upper Midwestern United States will generate

economic hardships to the Oglala Sioux Tribe. These economic hardships include but are not limited to the potential damage to the land, air, water, vegetation, and other natural resources of the Oglala Sioux Tribe, now

THEREFORE BE IT ORDAINED, that the Oglala Sioux Tribal Council does hereby declares the Pine Ridge Indian Reservation, including it aboriginal territory boundaries to be a nuclear-free area for the protection of the people and the Natural Resources of the Oglala Sioux Tribe. Any person, agency or entity, including federal, state, and county governments, or corporations, businesses, or companies who shall cause any nuclear pollution or contamination to enter the confines of the Pine Ridge Indian Reservation, including its 1851 & 1868 Treaty boundaries and aboriginal territory boundaries, shall be prosecuted to the fullest extent of the law.

C-E-R-T-I-F-I-C-A-T-I-O-N

I, as the undersigned Secretary of the Oglala Sioux Tribal Council of the Oglala Sioux Tribe hereby certify that this Ordinance was adopted by the vote of: 16 for; 0 against; 0 abstaining; 1 not voting during a REGULAR SESSION held on the 7th day of AUGUST 2007.

Elizabeth Waters
ELIZABETH WATERS
Secretary
Oglala Sioux Tribe

A-T-T-E-S-T:

John W. Yellow Bird Steele
JOHN W. YELLOW BIRD-STEELE
President
Oglala Sioux Tribe

RECEIVED
AUG 9
SUPERINTENDENT
PINE RIDGE AGENCY, SD

ORDINANCE NO. 11-10

ORDINANCE OF THE OGLALA SIOUX TRIBAL COUNCIL
OF THE OGLALA SIOUX TRIBE
(An Unincorporated Tribe)

ORDINANCE OF THE OGLALA SIOUX TRIBAL COUNCIL ESTABLISHING PROCEDURES FOR GOVERNMENT-TO-GOVERNMENT CONSULTATION BETWEEN THE OGLALA SIOUX TRIBE AND THE UNITED STATES GOVERNMENT, AND OTHER GOVERNMENTS.

WHEREAS, the Government-to-Government relationship between the Oglala Sioux Tribe was established in the United States Constitution, Article 6 (Supremacy Clause); the Treaty of July 2, 1825, United States-Oglala Band of Sioux Nation, 7 Stat. 252; Rev. Stat. § 2116, 25 U.S.C. § 177 (*codifying* section 12 of the Trade and Intercourse Act of June 30, 1834, ch. 161, 4 Stat. 730); the Treaty of September 17, 1851, United States-Teton Division of Sioux Nation, *et al.*, 11 Stat. 749; the Treaty of April 29, 1868, United States-Sioux Nation,15 Stat. 635; Rev. Stat. § 2079, 25 U.S.C. § 71 (*codifying* the Act of March 3, 1871, ch. 120, § 1, 16 Stat. 566), the Indian Reorganization Act of June 18, 1934, ch. 476, 48 Stat. 984, 25 U.S.C. § 461 *et seq.*, the Indian Self-Determination and Education Assistance Act of January 4, 1975, P.L. 93-638, 88 Stat. 2203, 25 U.S.C. § 450, *et seq.*, and other Congressional enactments, and

WHEREAS, the 1851 Treaty recognized title in the Oglala Band to 60 million acres of territory currently in the States of North Dakota, South Dakota, Nebraska, Montana and Wyoming for the Oglala Sioux Tribe and other Sioux tribes, and

WHEREAS, a permanent homeland was established within the 1851 Treaty territory for the "absolute and undisturbed use and occupation" of the Oglala Sioux Band and other Sioux bands, which homeland has been referred to as the "Great Sioux Reservation" and comprises substantially all of present day South Dakota west of the east bank of the Missouri River, and

WHEREAS, the Indian Claims Commission also found that the Oglala Band and other Sioux bands held aboriginal (non-treaty) title to 14 million acres east of the Missouri River in the States of North Dakota and South Dakota, and

WHEREAS, uncontested encroachments on the 1851 Treaty territory by the United States and its citizens resulted in the Powder River War of 1866-1868 between the United States and the Oglala band and other bands of Sioux Indians. as a result of which, peace was concluded between the United States and the Oglala Band and other Sioux bands by treaty on April 29, 1868, 15 Stat. 635 ("1868 Fort Laramie Treaty," which treaty was duly ratified by the United States on February 16, 1869 and proclaimed by the President on February 24, 1869, and

WHEREAS, the 1868 Treaty provided for a mutual demobilization of the United States and Oglala Band and other Sioux bands without terms of surrender on either side, and as a result thereof, the Oglala Band and other Sioux bands were never militarily conquered by the United States, and the Oglala Band has abided by the 1868 Treaty and resided on its reservation in accordance of the terms of the treaty since 1868, except for incidences in Montana in 1876 where the Oglala Band and other Sioux bands were legally exercising its 1868 Treaty, Article 11, hunting rights and yet had to defend themselves from attack by the United States Cavalry in violation of Articles 1 and 11 of the 1868 Treaty, and

WHEREAS, subsequent to ratification of the 1868 Treaty, no aboriginal or treaty territory of the Oglala Band was ever acquired by the United States in accordance with 25 U.S.C. § 177 or Article 12 of the 1868 Treaty, and all acquisitions of Oglala Band's territory was either confiscated by the United States or acquired with the requisite consent of the Band, and

WHEREAS, the "Oglala Band" reorganized in 1936 as the "Oglala Sioux Tribe of the Pine Ridge Indian Reservation" under Section 16 of the 1934 Indian Reorganization Act of June 18, 1934, ch. 576, 48 Stat. 987, 25 U.S.C. § 476, by adopting a constitution and bylaws approved by the Secretary of the Interior, and presently enjoys all of the rights and privileges guaranteed under its existing treaties with the United States in accordance with 25 U.S.C. § 478b

WHEREAS, as a result of its unique government-to-government relationship with the United States, and because the Oglala Band (now Oglala Sioux Tribe) is one of the few militarily unconquered Sioux tribes in the United States and all of its territory now in the possession of the United States was acquired without its consent, the Oglala Sioux Tribe still possesses very strong aboriginal rights within all the territory that comprised its aboriginal homeland, and as a result thereof, the Tribe has both a domestic and international rights to government-to-government consultations with the United States on the formulation of federal policies, or on all federal actions or undertakings that adversely affect its aboriginal and treaty territories, and

WHEREAS, the Executive Branch of the united States Government has recognized the right of government-to-government consultations with Indian Tribes in:

a. President Clinton's Memorandum of April 29, 1994, which, among other things, directed agencies to:

(i) "ensure that the department or agency operates within a government-to-government relationship with Federally-recognized Trial government,"

(ii) "consult, to the greatest extent practicable ad to the extent permitted by law with Tribal governments prior to taking actions that affect Federally recognized tribes, to be open and candid so that all interested parties may evaluate for themselves the potential impact of relevant proposals," and

(iii) "assess the impacts of Federal government plans, projects, programs, and activities on tribal trust resources to assure that Tribal government rights and concerns are considered during the development of such plans, projects, and activities."

b. President Clinton's Executive Order No. 13084 of May 19, 1998, which directed federal agencies to respect tribal self-government and sovereignty, tribal rights, and tribal responsibilities whenever they develop policies "significantly affecting Indian tribal governments,"

c. President Clinton's Executive Order No. 13175 of November 6, 2000, which directed all federal agencies to establish consultation and collaboration with tribal officials in the development of federal policies that have tribal implications, and

d. President Barak Obama Memorandum of November 5, 2009, to the heads of the Executive Department and federal agencies to submit plans of actions that the agencies will take to implement the policies and directives of President Clinton's Executive Order 13175,

and

WHEREAS, Congress has also mandated government-to-government consultation with Indian tribes, which have been implemented in statutes, orders, regulations, rules, policies, manuals, protocols and guidance, most of which are described in a document issued by the White House- Indian Affairs Executive Working Group (WH-IAEWG), dated January, 2009, and entitled "List of Federal Tribal Consultation Statutes, Orders, Regulations, rules, Policies, Manuals, protocols and guidance," and

WHEREAS, the Oglala Sioux Tribe has never enacted legislation (ordinances) establishing procedures for government-to-government consultation between the Tribe and the United States, and believes that such procedures are necessary to establish a clear process for documenting the nature and results of consultations between the Tribe and the United States and its agencies, now

THEREFORE BE IT ORDAINED, that the following sections relating to government-to-government consultations are hereby adopted for the Oglala Sioux Tribe.

Section 1. Title. This ordinance shall be known and referred to as the Oglala Sioux Tribe Consultation and Coordination Ordinance of 2001.

Section 2. Definitions. The following words and phrases used in this Election Code shall have the following meanings:

"Consultation" and/or "government-to-government" consultation shall mean the formal process of cooperation, negotiation, and mutual decision making between the Oglala Sioux Tribe and the United States Government, and other governments. It is the process through which sovereign governments develop a common understanding of technical and legal issues and use this understanding to formulate mutually agreeable decisions.

Section 3. Scope. This ordinance is intended to extend to:

a. All of the aboriginal homeland of the Oglala Sioux Tribe, including, the 60 million acre territory Sioux territory described in Article 5 of the 1851 Ft. Laramie Treaty; the territory and the expanded hunting rights territory described in Articles 2, 11 and 16 of the 1868 Ft. Laramie Treaty;

b. All of the aboriginal title (non-treaty) Sioux territory comprising 14 million acres located east of the Missouri River in the present states of North Dakota and South Dakota; and

c. All undertakings and actions that adversely affect the Oglala Sioux Tribe's aboriginal, treaty or statutorily recognized rights and interests within its aboriginal and treaty recognized territories.

Section 4. Purpose. The primary purpose and intent of this ordinance is to:

a. Establish a clear process for documenting the nature and results of government-to-government consultations between the Oglala Sioux Tribe and Federal Government and its agencies;

b. Provide a consistent, orderly process to government-to-government consultation to make and ensure that government-to-government consultations are meaningful and effective, and

c. Be applicable, to the fullest extent possible, for documenting the nature and results of government-to-government consultations between the Oglala Sioux Tribe and other Indian tribes, inter-tribal organizations and state governments and agencies.

Section 5. Authority. This ordinance is adopted pursuant to the Oglala Sioux Tribe's inherent sovereignty and Article IV, Section 1 (a) of the Amended Constitution of the Oglala Sioux Tribe, which empowers the Tribal Council "(a) To negotiate with the Federal, State, and local governments, on behalf of the tribe, and to advise and consult with representatives of the Interior Department on all activities of the Department that may affect the Pine Ridge Indian Reservation."

Section 6. Principles and guidelines. All government-to-government consultations between the Oglala Sioux Tribe and the Federal Government, and State or other tribal governments, shall be conducted with the Oglala Sioux Tribe under the following principles and guidelines:

a. The Oglala Sioux Tribe is a sovereign government with attendant powers;

b. All treaties between the Oglala Sioux Tribe and the United States must be honored and enforced to the fullest extent possible;

c. The Oglala Sioux Tribe has never been militarily conquered by the United States, and has existed in a peaceful relationship with the United States since 1868, pursuant to Article I of the 1868 Ft. Laramie Treaty; and

d. The Oglala Sioux Tribe and its territories are not possessions of the United States.

Section 7. Procedures. All consultation between the Oglala Sioux Tribe and the Federal Government, and State or other tribal governments, must:

WHEN CONSULTATION IS REQEUSTED BY THE FEDERAL GOVERNMENT OR OTHER GOVERNMENTS

a. Occur through a formal meeting with the Oglala Sioux Tribal Council. Neither the Executive Committee nor any Executive Committee member or staff member of the Tribe shall be authorized to engage in government-to-government consultations with any government or governmental agency;

b. Accomplish the goals and objectives described in Section 8.

c. Be initiated by serving a formal written request for government-to-government consultation with the Secretary of the Oglala Sioux Tribe. The request for consultation should describe the impending, proposed project or activity that may or may not affect the Oglala Sioux Tribe's interests in its aboriginal or treaty territory and/or rights or interests therein. This include the Tribes aboriginal and treaty territory both within and outside the exterior boundaries of the Pine Ridge Indian Reservation;

d. It shall be the duty of the Tribal Secretary to immediately notify all members of the Executive Committee and Tribal Council of each request for consultation;

e. Upon receipt of a request for consultation, the Tribal President, or council members under established procedures, shall call a special council meeting for the purpose of responding to the request for consultation. The Tribal Council shall:

(i) Request by resolution a policy-level meeting, initiating government-to-government consultations;

(ii) Authorize the Tribe's technical staff (and when appropriate the Tribe's attorneys) to meet with the responding government's technical staff to discern and define the issues that are subject to the request for consultation including how the proposed governmental undertaking or activity affects the tribe's aboriginal, treaty, statutory or other interests;

(iii) Schedule a special council meeting in which the Tribe's technical staff (and when appropriate the Tribe's attorneys) can fully brief the Tribal council on the issues that are subject to consultation, with recommendations and opinions;

(iv) Schedule a follow-up special council meeting in which the Tribe through the Tribal council shall engage in formal government-to-government consultation based on the recommendations and opinions of its staff (and attorneys); and

(v) Pass a resolution fully articulating the Tribe's formal decision, which decision shall be consistent with the provisions of this ordinance.

WHEN CONSULTATION IS REQEUSTED BY THE OGLALA SIOUX TRIBE

a. Be initiated by passing a tribal council resolution requesting government -to-government consultation, which resolution shall be executed and sent by the Tribal President to appropriate official of the Federal Government or tribal or state government with which consultation is desired;

b. Follow the procedure described in Subsections 7.e. (i) through (v) above; and

c. Accomplish the same objectives described in Section 8.

Section 8. Objectives. All government-to-government consultations should ensure the following results:

a. Tribal officers and officials proceed in a dignified, orderly manner, keeping in mind that the Oglala Sioux Tribe is engaging in the consultations as a sovereign government that maintains government-to-government relations with the United States Government and other governments. Tribal officials engaging in consultation should dress in appropriate attire during the consultation proceedings, and conduct themselves in a professional, dignified, and diplomatic manner;

b. Tribal officers and officials fully understand the issues to be discussed prior to engaging in and consultation proceeding; this includes an understanding of tribal history, federal treaties and federal statutes, regulations and rules, that will be discussed at each consultation;

c. Ensure that the Tribe's interest are fully protected, including interests in all tracts of land located within the Tribe's aboriginal and treaty territories, and interests therein, as well as tribal cultural resources, human remains, and any other tribal patrimony;

d. Ensure compliance with federal treaties, statutes, regulations and rules and tribal policies (e.g., policy that the Black Hills Are Not For Sale and tribal land claims must include restoration of federally held lands to the Tribe);

Section 9. Documentation. Following any governmental-to-government consultation between the Oglala Sioux Tribe and the Federal government, or other governments, the Tribal Council shall:

a. Achieve a bi-lateral decision between the Tribe and the United States, or other government;

b. Adopt a resolution documenting the nature and results of the consultation and bilateral decision;

c. Direct the Tribal Secretary to file a copy of the resolution and all backup documentation with the Tribal Records Department.

Section 10. Representations. Neither the Federal Government nor any agency thereof, nor any other government, shall legitimately represent to any other government or governmental entity, nor to any third party, that they have consulted with the Oglala Sioux Tribe unless they fully comply with the terms and conditions of this ordinance.

Section 11. Effective Date. This ordinance shall become effective immediately.

Section 12. Repeal of inconsistent ordinances. All previously enacted ordinances are hereby repealed to the extent that they are inconsistent with this ordinance.

C-E-R-T-I-F-I-C-A-T-I-O-N

I, as undersigned Secretary of the Oglala Sioux Tribal Council of the Oglala Sioux Tribe, hereby certify that this Ordinance was adopted by a vote of: 13 For; 1 Against; 0 Abstain; and 0 Not Voting, during a SPECIAL SESSION held on the 7th day of JUNE, 2011.

Rhonda Two Eagle
RHONDA J. TWO EAGLE
Secretary
Oglala Sioux Tribe

A-T-T-E-S-T:

John Yellow Bird Steele
JOHN W. YELLOW BIRD-STEELE
President
Oglala Sioux Tribe

POWERTECH (USA) INC.

June 16, 2017

Valois Shea
U. S. Environmental Protection Agency
Underground Injection Control Program, 8WP-SUI
1595 Wynkoop Street
Denver, CO 80202-1129

Re: Powertech (USA) Inc. Comments on Dewey-Burdock Project Draft Class III Area Permit

Dear Valois:

This letter and attachments represent Powertech (USA) Inc.'s (Powertech's) written comments on the Draft Class III Area Permit for the Dewey-Burdock Project issued for public comment in March 2017. The written comments pertain to the draft permit, Draft Class III Area Permit Fact Sheet, Draft Aquifer Exemption Record of Decision and other supporting documents, including the Draft Cumulative Effects Analysis and Draft Environmental Justice Analysis. Following are general comments followed by specific technical comments (Tables 1 through 5) and additional comments included with proposed alternate solutions for several draft permit conditions (Attachments A-1 through A-10). References are provided as PDF files in Attachment B.

Powertech's primary concern is that the draft permit would impose a raft of unprecedented and wholly unwarranted new requirements for an *in-situ* recovery (ISR) operation that would prove both operationally and financially burdensome. Yet EPA has offered no sound scientific or factual justification for the imposition of these additional requirements. Speculation is the only reason that EPA has ever offered for this type of approach. Because these requirements would be uniquely imposed on Powertech, Dewey-Burdock Project operations would be subjected to a substantial economic and competitive disadvantage.

As explained in more detail in other portions of Powertech's comments, some of the unprecedented requirements that the draft Class III area permit would impose on Dewey-Burdock Project operations include:

- conducting post-restoration groundwater monitoring for each wellfield after NRC approval that groundwater restoration has been successfully completed;
- installing a new down-gradient compliance boundary (DGCB) monitoring well network for each wellfield inside of that currently required by NRC license requirements;

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- collecting core samples prior to operations and testing these in "pass/fail" laboratory column tests, where a single constituent measured above background concentration would signal a failed test;
- quarterly groundwater sampling from the DGCB monitoring wells to establish initial baseline values before injection begins in the wellfield;
- additional monitoring and corrective action requirements for an excursion detected in a non-injection interval monitoring well beyond those reviewed and approved by NRC;
- additional monitoring and corrective action requirements for an "expanding excursion plume"; and
- additional monitoring and corrective action requirements for a "remnant excursion plume".

The only justification that EPA has ever offered for considering such requirements has been presented in support of the Agency's ongoing but uncompleted rulemaking to impose expansive new requirements in conjunction with setting health and environmental protection standards under the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA). That rulemaking began with publication of a proposed rule on January 26, 2015 (80 Fed. Reg. 4156; Exhibit 007). For reasons that have been amply documented in comments on that proposal, EPA proposed regulatory requirements that exceeded its statutory authority under UMTRCA and for which it provided no scientific or technical justifications. In January 2017, EPA discarded the 2015 proposal and published another proposal, 82 Fed. Reg. 7400 (January 19, 2017; Exhibit 025).[1] In so doing, EPA openly acknowledged the lack of any support for the types of provisions that now are proposed in the draft Class III permit: "Focusing on the area of surrounding or adjacent aquifers, the EPA acknowledges that the Agency does not have sufficient information to document a specific instance of contamination of a public source of drinking water caused by an ISR." 82 Fed. Reg. at 7404. Instead of providing any scientific evidence to support the need for additional regulations, EPA engages in speculation by suggesting that "the lack of data does not demonstrate that no contamination is occurring, as industry commenters assert, but instead merely demonstrates the lack of data available to be able to make such a determination, especially here there has been limited post-restoration monitoring." 82 Fed. Reg. at 7404. As noted below, this speculation runs contrary to the conclusions of the NRC based on data amassed by NRC and operators over decades of experience with ISR technologies. As noted by the Supreme Court of the United States, it is also an unlawful basis for

[1] EPA's initiation of this rulemaking highlights another fatal flaw in the proposed requirements of the Class III permit in that those requirements would impose as immediately effective and mandatory provisions that EPA has only proposed for public review and comment and has not yet even concluded should be adopted. The January 19, 2017 proposal is open for public comment through July 18, 2017, after which EPA must fully consider and address the many comments that it will receive in response to that proposal before deciding whether to promulgate any of the requirements proposed. EPA noted that it "received over 5,380 public comment letters from a wide range of stakeholders, with comments covering more than 80 different topics" on the previous proposal (82 Fed. Reg. at 7402), and it is likely to receive a comparable number of comments on its revised proposal. It is highly likely that EPA will make changes in its proposal before adopting any final rule. Under the circumstances, it would be arbitrary and capricious to saddle the Dewey-Burdock Project with requirements still in the formative stage, especially as those requirements would affect the post-restoration phase of the project that will be many years away even when operations commence.

administrative action: "assumptions are not a proper substitute for the findings of a significant risk of harm required by the Act."[2]

In this case, the Safe Drinking Water Act (SDWA) "prevent[s] underground injection which endangers drinking water sources."[3] It does not prevent all underground injection or even all movement of contaminants in fluid moving into USDWs. The SDWA prevents the movement of "endangering"[4] contaminants into USDWs. "Contaminant" is defined in 40 CFR § 144.3 so broadly as to have little meaning without the consideration of endangerment: "Contaminant means any physical, chemical, biological, or radiological substance or matter in water." Quite simply, the SDWA cannot be read to prevent all movement of "contaminants" into USDWs. It is directed only at "endangering" contaminants. This is very similar to the observations of the Supreme Court: "[R]equiring the Secretary to make a threshold finding of significant risk is consistent with the scope of the regulatory power granted to him by § 6(b)(5), which empowers the Secretary to promulgate standards, not for chemicals and physical agents generally, but for "toxic materials" and "harmful physical agents." *IUD v. API* at 643-44. The SDWA is likewise directed at "endangering" contaminants.

Consequently, the proposed draft permit is fundamentally flawed because it is based on speculation about potentially existing but completely unobserved and unproven effects rather than "the best available peer-reviewed science and economics." Accordingly, many of the proposed permit conditions would unnecessarily burden the recovery of uranium essential to the use of nuclear energy in the United States by curtailing and imposing significant costs on the permitting and operation of uranium ISR projects essential to the utilization of nuclear energy resources. The imposition of such requirements contravenes the essence of energy and regulatory policies embedded in Executive Order 13783 "Promoting Energy Independence and Economic Growth" (March 28, 2017); Executive Order 13777 "Enforcing the Regulatory Reform Agenda" (February 24, 2017); and Executive Order 13771 "Reducing Regulation and Controlling Regulatory Costs" (January 30, 2017).

In addition to proposing unsupported requirements, EPA has encroached into areas already fully addressed by the license issued by the NRC. As noted throughout Powertech's comments, these forays would impose requirements that are not only unnecessary because already addressed by NRC, but also requirements that are in conflict with the NRC license provisions. Imposing requirements that address the very same issues as addressed by the NRC but in a manner that is inconsistent and conflicting is no way to be "prudent and financially responsible in the expenditure of funds, from both public and private sources" as mandated by Executive Order 13771. In order to "manage the costs associated with the governmental imposition of private expenditures required to comply with Federal regulations," EPA needs to base its permit requirements on "transparent processes that employ the best available peer-reviewed science and economics" instead of relying on speculation to impose unnecessary and conflicting requirements. See Executive Order 13771; Executive Order 13783.

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[2] *Industrial Union Dept., AFL-CIO v. American Petroleum Institute*, 448 U.S. 607, 662 (1980) ["IUD v. API"].
[3] 42 U.S.C. § 300h(b)(1).
[4] "Endangering" is defined in 42 U.S.C. § 300h(d)(2) and in 40 CFR § 144.12(a).

General Comments

G-1: As a general matter, there is no evidence of off-site impact to non-exempt groundwater even after decades of uranium ISR operations in the U.S. There is significant support for this conclusion. First is documentation from the NRC staff in a 2009 memorandum to the NRC Commission (Exhibit 001 at 2), which found that:

> The Staff is unaware of any situation indicating that: (1) the quality of groundwater at a nearby water supply well has been degraded, (2) the use of a water supply well has been discontinued, or (3) a well has been relocated because of impacts attributed to an ISR facility.

The same document describes NRC staff's evaluation of excursions at historically operated ISR facilities and concludes that no excursion has resulted in environmental impacts:

> With regard to the migration of production liquids toward the surrounding aquifer, each licensee must define and monitor a set of nonhazardous parameters to identify any unintended movement toward the surrounding aquifer. Exceedances of those parameters result in an event termed an excursion; excursion events are not necessarily environmental impacts but just indicators of the unintended movement of production fluids. The data show over 60 events had occurred at the 3 facilities. For most of those events, the licensees were able to control and reverse them through pumping and extraction at nearby wells. Most excursions were short-lived, although a few of them continued for several years. None had resulted in environmental impacts.

Second, as noted above, EPA itself acknowledged this in January 2017 (Exhibit 025 at 7404):

> Focusing on the area of surrounding or adjacent aquifers, the EPA acknowledges that the Agency does not have sufficient information to document a specific instance of contamination of a public source of drinking water caused by an ISR.

Third is NUREG/CR-6733 (Exhibit 002 at 4-38), which addresses the history of excursions at U.S. ISR facilities and documents the finding that:

> [T]here were no reports of extraction fluid excursions being detected in off-site water supplies in any of the documentation for U.S. uranium ISL sites reviewed for this report.

Fourth is documentation from the Texas Commission on Environmental Quality (Exhibit 003 at 22) that no such impacts have been documented in Texas:

> With regard to research on the effects of similar mining projects on neighbors, the Executive Director is not aware of a documented case of off-site groundwater contamination from a Class III injection well operation in over 30 years of *in situ* uranium mining in South Texas. Also, the Executive Director is not aware of any other scientific evidence that *in situ* uranium mining in Texas has led to adverse health effects on the public.

Based on extensive research of the NRC ADAMS document server, Wyoming DEQ permitting files, and other publicly available information sources, Powertech is unaware of any negative impact to a water supply well located off-site from an ISR operation since these studies were published. Based on the lack of historical impacts at uranium ISR operations using groundwater protection measures consistent with those required by the NRC for the Dewey-Burdock Project, the additional monitoring requirements proposed by EPA are unnecessary and financially burdensome.

G-2: As noted, the Draft Class III Area Permit (draft permit) includes many unprecedented requirements that are not included in Class III permits for any other ISR facilities within the U.S. These include, but are not limited to, post-restoration groundwater monitoring requirements, column testing requirements and additional excursion monitoring and corrective action requirements. Rather than citing any impacts to groundwater quality resulting from historically or currently operated ISR facilities, none of which have been burdened by these additional requirements, EPA proposes to add these requirements "in order to demonstrate that no ISR contaminants cross the aquifer exemption boundary into the surrounding USDWs at a concentration above the baseline water quality limits of the USDW outside of the aquifer exemption boundary" (page 99-100 of the fact sheet). Given that no evidence is cited supporting the need for additional requirements for the Dewey-Burdock Project compared to other ISR facilities, the groundwater restoration and excursion monitoring requirements imposed by NRC after reviewing Powertech's NRC license application for 5 years are sufficient to ensure that there will be no measurable impacts to groundwater quality outside of the exempted aquifer that would impact the usability of the non-exempt waters. This is demonstrated by the examples listed in the previous comment.

G-3: The unprecedented requirements included in the draft permit are a significant departure from previous EPA Region 8, Underground Injection Control (UIC) Program reviews and approvals for ISR aquifer exemptions in adjacent Wyoming. The Dewey-Burdock Project is in a similar hydrogeologic setting to Wyoming ISR projects and borders the Wyoming/South Dakota state line. EPA's role in Wyoming is to approve UIC program revisions designating exempted aquifers after Wyoming DEQ has reclassified the aquifer and submitted a program revision to EPA Region 8. In support of the reclassification and designation of the mining aquifer, permittees are

required to assemble information that includes: hydrogeologic data (subsurface depths, vertical confinement, thickness, area to be exempted, water quality analysis, etc.) and, more importantly, aquifer protection measures including: mineralogy, geochemistry, wellfield description and groundwater monitoring plan (Exhibit 004 at PDF pages 156-161). Aquifer protection measures as part of the groundwater monitoring plan are consistent across Wyoming operations. The EPA Region 8 UIC Program reviews the program revisions from Wyoming DEQ and supporting documents and, in all cases, has approved them as non-substantial program revisions without conditions or stipulations (Exhibit 005).

This is illustrated in the record of decision issued by the EPA Region 8 UIC Program for the Jane Dough Amendment to the Nichols Ranch ISR Project (Exhibit 006). The program revision approval notes that it "applies to the location and the injection activities described herein." Further, it acknowledges that "WDEQ has also demonstrated that fluids injected or mobilized will remain within the [designated] aquifer exemption boundary" (Exhibit 006 at 3).

Powertech's groundwater protection measures approved in its NRC license are virtually identical to those approved in adjacent Wyoming operations and were reviewed by the very same group at EPA Region 8 with far different outcomes. Powertech's draft permit includes extraordinary conditions and technically infeasible stipulations, none of which were imposed by EPA Region 8 on other ISR projects during the approval process. These other ISR projects include: Lost Creek ISR Project, Nichols Ranch ISR Project (including the recent Jane Dough amendment), Ross ISR Project and the Reno Creek ISR Project, all of which were reviewed and approved in the same general timeframe as the Dewey-Burdock draft permit was developed by EPA. This arbitrary lack of consistency within EPA Region 8 and, more importantly, within the UIC Program at EPA Region 8 is unjustified given that there have been no changes to the regulations or associated guidance from EPA during this period and the technical attributes (excursion monitoring, groundwater restoration, etc.) of the Wyoming ISR Projects and the Dewey-Burdock Project are virtually identical. The draft permit is an unveiled attempt to take an arbitrary approach and drastically change the way the ISR industry is regulated far in advance of the proposed rule changes, giving Wyoming ISR operators a clear business advantage over a similar project located just across the state border in South Dakota.

G-4 EPA considers contaminants to include "any physical, chemical, biological, or radiological substance or matter in water" regardless of whether the contaminant has the potential to impact human health or the environment (fact sheet page 104). Powertech disagrees with EPA's definition of what would constitute a violation of UIC regulations on the basis of 40 CFR 144.12(a), which states (emphasis added):

> No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, if the presence of that contaminant may cause a violation of any

> primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons. The applicant for a permit shall have the burden of showing that the requirements of this paragraph are met.

This regulation is consistent with the purpose of the Safe Drinking Water Act (SDWA) and the UIC program, which is to protect USDWs. Imposing permit conditions to verify that non-hazardous parameters such as calcium, which does not have the potential to violate a drinking water regulation or otherwise affect the health of persons, do not cross the aquifer exemption boundary would not provide any added protection for USDWs. Additionally, the presence of a contaminant regulated under 40 CFR part 142 at a concentration below the federal maximum contaminant level (MCL) would not have the potential to adversely affect human health. This is exactly why the MCLs were established.

EPA's statement in the fact sheet for the draft permit that "UIC regulations at 40 CFR § 144.12(b) prohibits movement of any contaminant into an underground source of drinking water" is incorrect. The non-endangerment standard of the SDWA prohibits fluid movement from injection only insofar as it would cause a failure of a public water system to comply with health-based limits for contaminants.[5] Moreover, the meaning of this requirement is plain on the face of the statutory provision and requires no further interpretation.

The fluid movement prohibition applicable to the UIC program is set forth in the SDWA, which directs EPA to establish "minimum requirements for effective programs to prevent underground injection which endangers drinking water sources within the meaning of subsection (d)(2) [of this section]." *See* 42 U.S.C. § 300h(a)(1) and (b)(1). Under the UIC program, underground injection is prohibited unless authorized by a permit or by rule. 42 U.S.C. § 300h(b)(1)(A). To obtain an underground injection permit, applicants "must satisfy the State that the underground injection will not endanger drinking water sources." 42 U.S.C. § 300h(b)(1)(B). The applicable standard for "non-endangerment" is spelled out in subsection (d)(2):

> Underground injection endangers drinking water sources if such injection may result in the presence in underground water which supplies or can reasonably be expected to supply any public water system of any contaminant, and if the presence of such contaminant may result in such system's not complying with any national primary drinking water regulation or may otherwise adversely affect the health of persons.

[5] *Miami-Dade County v. U.S. E.P.A.,* 529 F.3d 1049, 1064 (11th Cir. 2008): "despite this evidence that the statutory language was intended for liberal construction, no mention is made of a blanket no-fluid-movement standard.

U.S.C. § 300h(d)(2)(emphasis added).

EPA's regulations establish the general fluid movement limitation in 40 CFR §§ 144.12(a) and 144.1(g), which closely track the language of the statute:

> No owner or operator shall construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of fluid containing any contaminant into underground sources of drinking water, <u>if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 142 or may otherwise adversely affect the health of persons</u>.

40 CFR § 144.12(a) (emphasis added).

> In carrying out the mandate of the SDWA, this subpart provides that no injection shall be authorized by permit or rule if it results in the movement of fluid containing any contaminant into underground sources of drinking Water (USDWs - see § 144.3 for definition), <u>if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 141 or may adversely affect the health of persons (§ 144.12)</u>.

40 CFR § 144.1(g) (emphasis added).

These provisions adopt the statutory non-endangerment standard into the regulations. They clearly condition the prohibition of fluid movement on the potential to cause endangerment of an underground source of drinking water.[6] All other provisions in the UIC regulations must be read in light of this overarching standard that defines what fluid movement is prohibited.

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[6] EPA Region IV's Regional Counsel acknowledged this very limitation in a memorandum clarifying the interaction of the UIC and RCRA regulations. Specifically, the Region stated:

> Due to the conformance of the subsection (a) language with the statutory language, it may be summarized that the rule of § 144.12(a) is violated if injected material may enter either a present or potential underground source of drinking water USDW, and if, after such entry, it may pose a threat to human health or render the water source unfit for human consumption.

See EPA Region IV, Memorandum of Law from Jay Sargent, Regional Counsel, to Paul J. Trainer, Director, Water Management Division, "Response for Clarification of UIC Regulations and Their Interaction with RCRA Regulations," at 3-4, November 29, 1984. ("Region IV Memorandum").

The regulatory history of the "non-endangerment" standard shows that EPA never decided to impose an absolute prohibition on fluid movement. When EPA proposed its implementing regulations, the Agency decided to try to spell out a definition in the regulations "to clarify what is meant by 'endangerment.'" 41 Fed. Reg. 36730, 36731 (August 31, 1976). In so doing, the Agency provided its interpretation of the statutory non-endangerment standard. EPA stated that "[i]n the case of existing system using an underground water source, the logical meaning of this provision is that contamination endangers drinking water if it requires the use of new or additional treatment by the [public water] system to meet a national primary drinking water regulation or otherwise to prevent a health risk." 41 Fed. Reg. at 36733. Similarly, EPA concluded that "[i]n the case of a potential source of underground water which will require treatment if it is used in the future, degradation may make further treatment necessary or may make the water unsuitable for use as drinking water." *Id.* For contaminants other than those covered by national drinking water regulations, EPA concluded that the question of endangerment remained focused on how the presence of such contaminants in the potential water source would affect the ability of the water to be used as drinking water following whatever treatment would have been necessary absent consideration of that contaminant. Thus, endangerment would occur if the contamination would render the water unfit for use as drinking water or if, for a chemical not covered or likely to be covered by drinking water regulations, "the contamination of an underground drinking water source by that chemical could adversely affect the health of persons who obtain the drinking water from that source." *Id.* Although EPA ultimately chose to allow the statutory definition of "endangerment" to speak for itself without further definition in the UIC regulations, EPA did not repudiate its own interpretation of what is required by the statutory non-endangerment standard.[7]

After receiving public comment on its 1976 proposal, the Agency decided to change course, concluding that "its proposed definition was unduly vague and confusing." 44 Fed. Reg. 23740 (April 20, 1979). EPA "decided that since 'endangerment' is defined in the Act, it need not be redefined in these regulations." 44 Fed. Reg. 23753 (April 20, 1979). Thus, the only definition of "endangerment" is the statutory definition quoted above.

Instead of writing a new definition of "endangerment" in its UIC regulations, EPA developed "an operational test." *Id.* But this test was not intended to change the standard:

> EPA still intends to accomplish the statutory goal of 'preventing endangerment to underground sources of drinking water' – no change in this regard is contemplated. Rather our intention has been to fashion a test of 'endangerment' that is workable and reduces uncertainty.

[7] Indeed, the Region IV Memorandum confirms that EPA continued to adhere to this interpretation after the final UIC regulations were promulgated in 1982.

44 Fed. Reg. 23740 (April 20, 1979). EPA described the proposed test as follows:

> The test in these reproposed regulations is whether injection operations will cause the migration of injected or formation fluids into an underground source of drinking water. If injection into a well can cause such migration, the owner/operator must take appropriate action to eliminate the fluid migration. *Id.*

EPA explained that this "'no migration' standard was applicable to wells in Classes I-III, which were to achieve it through the use of sound engineering practices." 45 Fed. Reg. 42476 (June 24, 1980). "The technical requirements of Part 146 are designed to insure that such movement will not occur." 45 Fed. Reg. 33436 (May 19, 1980).

The standard was spelled out in 40 CFR § 122.34(a) (the predecessor to section 144.12(a)):

> (a) No UIC authorization by permit or rule shall be allowed in the following circumstances:
> (1) Where a Class I, II, or III well causes or allows movement of fluid into underground sources of drinking water.

EPA later called this standard "a blanket prohibition ... against movement of fluid into underground sources of drinking water for Class I, II, or III wells." 46 Fed. Reg. 48246 (October 1, 1981).

If this had been the end of the rulemaking process, there might have been more support for EPA's assertion in the fact sheet. But this was not the end of the rulemaking process, and that is not what EPA's UIC regulations now prescribe as the fluid movement limitation applicable to Class III wells.

In response to petitions for judicial review of the final UIC regulations, EPA revised the regulations on February 3, 1982 (47 Fed. Reg. 4996-97) to eliminate the blanket "no migration" prohibition. EPA chose, instead, to adopt the present wording that is anchored in the statutory standard for assuring that underground injection will not "endanger" drinking water sources:

> In carrying out the mandate of the SDWA, this subpart provides that no injection shall be authorized by permit or rule if it results in the movement of fluid containing any contaminant into Underground Sources of Drinking Water (USDWs – see § 144.3 for definition), <u>if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR part 141 or may adversely affect the health of persons (§ 144.12)</u>.

40 CFR § 144.1(g) (originally promulgated as § 122.31(d)) (emphasis added). This fluid movement standard is founded on the statutory SDWA "non-endangerment" standard. Accordingly, EPA lacks legal authority to impose a more stringent prohibition on fluid movement than is contained in the SDWA and its own regulations.

Finally, the courts have rejected any notion of prohibiting insignificant risks, such as the movement of innocuous contaminants. As already explained, the Supreme Court has concluded the necessity of determining before taking administrative action "that it is reasonably necessary and appropriate to remedy a significant risk of material health impairment." *IUD v. API* at 639. Similarly, the U.S. Court of Appeals for the District of Columbia Circuit has said "something is "unsafe" only when it threatens humans with "a significant risk of harm." *Natural Resources Defense Council, Inc. v. USEPA*, 824 F.2d 1146, 1153 (D.C. Cir. 1987). Drawing on the analysis in that case, the action proposed here, which clearly is directed at prohibiting the movement of all contaminants from an exempted portion of an aquifer into a USDW is unwarranted because EPA "has made no finding with respect to the effect of the [potential movement of contaminants] on health." 824 F.2d at 1163. Here "endangerment" is clearly defined in terms of health. That means EPA "should consider differences in degrees of significance rather than simply a total elimination of all risks." *IUD v. API* at 643, n.48. An absolute fluid movement prohibition, by contrast, is aimed at the elimination of all risks rather than those found to be endangering and is therefore unsupportable.

Moreover, 40 CFR § 144.12(b) by its terms indicates that additional corrective action, operation, monitoring, or reporting may be imposed only if monitoring within the USDW indicates the movement of a contaminant into the USDW. All of the proposed additional monitoring requirements would occur within the exempted aquifer, which would be permanently removed from classification as a USDW. Additional monitoring requirements are not warranted unless an impact is documented in an adjacent non-exempted USDW.

G-5: The proposed additional permit requirements are not based on any final rulemaking, which would be the appropriate venue to change the way that the U.S. ISR industry is regulated. Since EPA does not cite any site-specific concerns with the Dewey-Burdock Project as the basis for the proposed additional permit requirements, Powertech must conclude that EPA has determined that these additional monitoring requirements are appropriate for the ISR industry generally. To promulgate additional permit requirements without a federal rulemaking contravenes the purpose of federal regulation. As noted above, there are many aspects of the previously proposed but discarded 40 CFR part 192 rulemaking that are now proposed as draft permit conditions despite the fact that the rulemaking was discarded. Some of these are summarized in Table G-1.

Table G-1: Proposed Permit Requirements Apparently Stemming from Previously Proposed but Discarded 40 CFR Part 192 Rulemaking

Proposed Requirement	Draft Permit Section	40 CFR Part 192 Section (Exhibit 007)
Post-restoration groundwater monitoring for at least 30 years under natural groundwater gradient[1]	Part IX, Sec. E	§ 192.53(e) (p. 4187), which would have required post-restoration monitoring for 30 years, or at least 3 years with geochemical modeling
Geochemical modeling if column testing does not conclusively demonstrate attenuation of all contaminants	Part IV, Sec. D.1.e	§ 192.53(e)(iii) (p. 4187), which would have allowed post-restoration groundwater monitoring duration to be shortened based on geochemical modeling using site-specific data
Monitoring for an extensive list of parameters in the event that an excursion is confirmed	Part IX, Sec. C.3.f Part IX, Sec. C.4.b.ii	§ 192.53(b)(2) (p. 4186), which would have required immediate sampling of all Table 1 constituents if an excursion is detected
Quarterly pre-operational baseline sampling for down-gradient compliance boundary monitoring wells	Part IV, Sec. C.1 Part IX, Sec. B.3	§ 192.53(a)(4) (p. 4186), which would have required at least one year of pre-operational background monitoring for all monitoring wells

Notes:

[1] Refer to Attachment A-3, which shows that the minimum time required for groundwater to reach down-gradient compliance boundary monitoring wells installed 200 feet from the wellfield would be 33 years.

G-6: The NRC staff prepared the Supplemental Environmental Impact Statement (SEIS) for the Dewey-Burdock Project, which evaluated potential impacts to groundwater outside of the exempted aquifer (Exhibit 008). As noted on page 5 of the Draft Cumulative Effects Analysis, EPA reviewed the draft and final NRC SEIS. However, at no time did EPA comment that the groundwater protection measures required by NRC were insufficient to protect groundwater outside of the exempted aquifer. EPA offers no evidence that impacts have occurred at other ISR facilities as a basis for the proposed post-restoration groundwater monitoring, column testing and additional excursion monitoring and corrective action requirements. Accordingly, those proposed conditions are wholly unsupported and should be deleted.

G-7: Powertech submitted the Class III permit application in December 2008, which means that EPA took more than 8 years to develop the draft permit. However, Powertech was never informed of the proposed permit conditions that extend significantly beyond – and are inconsistent with – NRC license requirements, including, but not limited to, post-restoration groundwater monitoring, column testing and additional excursion monitoring and corrective action requirements. Had Powertech had the opportunity to comment on a preliminary draft permit or otherwise discuss the draft conditions with EPA, it would have been possible to avoid some technical pitfalls in the proposed permit conditions. For example, the proposal to conduct post-restoration groundwater monitoring until after the arrival of a tracer injected at the upgradient edge of the wellfield would involve 400 to 800 years of monitoring under natural groundwater flow conditions. Clearly such a condition is not a practical means of demonstrating a lack of negative impact to down-gradient USDWs.

G-8: The draft permit contains inconsistent conditions that overlap with NRC license requirements. Some examples include:

1) Excursion monitoring during ISR operations (Part IX, Section C.1)
2) Excursion monitoring during groundwater restoration (Part IX, Section C.2)
3) Corrective actions during a confirmed excursion event (Part IX, Section C.3)
4) Annual monitoring of domestic wells within the Area of Review (Part IX, Section B.5.a)
5) Quarterly sampling of stock wells within the permit area (Part IX, Section B.4.b)
6) Quarterly monitoring of additional monitoring wells located upgradient and down-gradient of the ISR wellfields in accordance with NRC regulatory guidance (Part IX, Section B.4.c)

By specifying the monitoring well locations, sampling frequency and parameters for all of these overlapping monitoring requirements, Powertech will have to modify both the NRC license and Class III Area Permit if a monitoring location changes (e.g., if a new domestic well is drilled near the permit area). EPA also proposes to significantly alter the parameter list for most groundwater samples, which would lead to confusion for Powertech and regulators in having to submit samples to a laboratory for two different analyte lists.

G-9: EPA does not have the authority for proposing duplicative and in many cases expansive requirements for areas already regulated by NRC (especially excursion monitoring within the exempted aquifer).

Congress amended the Atomic Energy Act of 1954 (AEA) with the Uranium Mill Tailings Radiation Control Act (UMTRCA) in 1978 to specifically address a new class of AEA materials known as 11e.(2) byproduct material. As mandated by Congress, EPA was granted limited and indirect regulatory authority to propose generally applicable standards that would serve as the starting point for the NRC to promulgate regulations that would address such byproduct material and the process known as "uranium milling." NRC and not EPA was granted direct regulatory authority over this to implement and enforce appropriate regulations consistent with EPA's generally applicable standards. However, while EPA was allowed to promulgate such standards, it has no authority to create the applicable regulations, to impose requirements on NRC's licensees or to enforce NRC license requirements on such licensees.

Pursuant to Section 275 of the AEA, Congress assigned EPA the authority to promulgate *generally applicable standards* for the protection of public health and safety and the environment from the potential radiological and *non*-radiological hazards associated with the possession, transfer, and disposal of 11e.(2) *byproduct material*. 42 U.S.C. § 2022(b). For the *non*-radiological hazards associated with 11e.(2) *byproduct material*, these *generally applicable standards* are to provide equivalent protection to that provided by EPA's RCRA standards for such non-radiological hazardous materials. *See* 40 CFR § 264 *et seq*. As a result, 11e.(2) *byproduct material* is specifically exempted from EPA regulation under RCRA and permitting authority over such material is deliberately withheld from EPA. *See* 40 CFR § 261.4.

More specifically, Section 275(d) of the AEA provides that "[i]mplementation and enforcement of the standards promulgated [by EPA] pursuant to subsection (b) of this section shall be the responsibility of the Commission in the conduct of its licensing activities under this Act." In addition, Congress expanded NRC's regulatory authority under Section 84 of the AEA to develop its own requirements for the management of 11e.(2) *byproduct material*. Specifically, Section 84(a) of the AEA directs NRC to ensure that any 11e.(2) *byproduct material* is managed in a manner:

(i) that the Commission deems appropriate to protect health, safety, and the environment from the potential radiological and non-radiological hazards associated with such materials;

(ii) that conforms with the generally applicable standards developed by EPA; and

(iii) that conforms with the general requirements established by NRC, comparable to standards applicable to similar hazardous materials regulated under the Solid Waste Disposal Act [42 U.S.C. § 6901 *et seq.*].

By way of example, NRC's 10 CFR Part 40, Appendix A, Criterion 5 incorporates the basic groundwater protection standards as promulgated by EPA in 40 CFR Part 192, Subparts D & E, which, as noted above, incorporate RCRA standards in 40 CFR Part 264 *et seq.*, and which apply both during operations and to final closure. The primary standard in Criterion 5 focuses on the type of liner necessary to protect groundwater during the management of uranium or thorium mill tailings. Additionally, a *secondary* groundwater standard is provided requiring that hazardous constituents entering groundwater must not exceed concentration limits in the "uppermost aquifer beyond the point of compliance during the compliance period." Criterion 5 prescribes a specific course of action for implementing *primary* and *secondary* groundwater standards, which include provisions for alternate concentration limits (ACLs), the classification of hazardous constituents and whether they may be exempted from the regulation. But, EPA is not allowed to prescribe the requirements for obtaining an ACL from NRC and has so conceded that point on multiple occasions.

With respect to ISR operations such as the Dewey-Burdock Project, in the 1980s, the Commission determined that the active operational portion of such an operation constitutes "uranium milling" and therefore falls under the provisions of UMTRCA. Later, in 2000, the Commission determined that restoration fluids from ISR operations are 11e.(2) byproduct material as well as determining that it had exclusive, preemptive federal jurisdiction under the AEA/UMTRCA over both the radiological and non-radiological aspects of 11e.(2) byproduct material and, thus by definition, "uranium milling." As a result of these decisions, the Commission later determined that Appendix A Criteria, including Criterion 5 groundwater corrective action requirements, are to be applied to ISR wellfields as a matter of law, despite the fact that ISR licenses up to that point included license conditions mandating groundwater restoration in such wellfields. As a result of this determination, which has never been challenged

by EPA or any other entity, the Commission fully regulates all aspects of ISR operations, including but not limited to groundwater restoration.

Interestingly enough, EPA's SDWA UIC regulations do not require post-operation groundwater restoration for exempted aquifers, because such exempted aquifers will not be used as a drinking water source at any time before, during or after ISR operations are complete. In some cases, states such as Wyoming, Texas and Nebraska through their "primacy" UIC programs have created regulations for groundwater restoration of depleted underground ISR ore bodies to specified standards, including class-of-use. While EPA does not require restoration, the agency's UIC regulations do prohibit the injection of fluids that result in the migration of such fluids to adjacent, non-exempt USDWs, if such migration may cause a violation of any primary drinking water regulation or may adversely affect the health of persons, and do require corrective action/remediation for contamination of adjacent, non-exempt aquifers in accordance with the purpose of the SDWA and the UIC program, which is to protect USDWs. *See* 40 CFR §§ 144.55 and 146.7.

It is completely unnecessary for EPA to impose duplicative regulatory requirements on ISR projects, especially where the Commission already imposes detailed wellfield monitoring programs that specifically prohibit the migration of production or restoration fluids outside of the perimeter monitoring well ring, which is designed to serve as an early warning system for such potential migration. Powertech is required by Commission regulation to submit detailed wellfield packages to NRC for review and in some cases either written verification or specific approval, which include the proposed monitoring program and commitments to immediately engage in corrective action if identified constituents are found at a perimeter monitoring well. Further, after termination of active operations, groundwater restoration must be conducted in accordance with Criterion 5 requirements, which are Commission-approved background or an MCL, whichever is higher, or an ACL as determined by the Commission using an exhaustive list of approximately 13 separate requirements. Also, an ACL will not be granted by the Commission unless it is determined to be adequately protective of public health and safety, is demonstrated to show that there are no steadily increasing trends of constituents of concern that may indicate the potential for future excursions to adjacent, non-exempt aquifers, and that the Commission's as low as reasonably achievable (ALARA) standard has been met. In accordance with the ACL requirements, Powertech must demonstrate that the ACL value and the geochemistry in the depleted ore body and down-gradient areas will be adequately protective of human health and the environment at the point of exposure (POE), which is the aquifer exemption boundary (Exhibit 009 at 13).

Based on the success with this regulatory program, the Commission directed NRC staff to conduct a study of its licensed ISR projects, past and present, to determine if there has ever been migration of ISR ore body fluids to adjacent, non-exempt aquifers. As described in comment #G-1, in 2009, NRC staff completed its inquiry and reported that no such migrations had ever taken place. Therefore, EPA's imposition of otherwise duplicative and, in many cases,

onerous requirements on Powertech for groundwater monitoring and corrective action in the face of NRC's regulatory program is improper.

G-10: Regarding the proposed post-restoration monitoring and column testing requirements, EPA does not appear to have considered the ACL approval process required under NRC regulation and license condition for any constituents exceeding the baseline concentration or an MCL after groundwater restoration. In order to approve an ACL application through a formal license amendment process, NRC must determine that there will be no migration of recovery solutions outside of the aquifer exemption boundary. Additional information is found in Attachment A-3. In light of the groundwater quality standards in 10 CFR Part 40, Appendix A, Criteria 5B(5) and 5B(6), there is no need or technical justification for additional post-restoration monitoring and column testing, which would create an unjustified economic burden.

G-11: EPA acknowledges the effectiveness of the excursion monitoring system that will be conducted under NRC license requirements on page 116 of the fact sheet:

> The monitoring well detection system described in Section 12.5 is a proven method used at historically and currently operating facilities.

In spite of this acknowledgement, EPA proposes significant revisions to the excursion monitoring program such as monitoring for a potential "expanding excursion plume" and a "remnant excursion plume," neither of which has been documented in the fact sheet to have occurred at a historically operated ISR facility.

G-12: Powertech is unaware of any Class III permits for uranium ISR operations in the U.S. for which similar conditions have been imposed for post-restoration groundwater monitoring, column testing and additional excursion monitoring and corrective action requirements. This includes Class III permits issued by the State of Wyoming within the last 10 years for the Lost Creek ISR Project, Ross ISR Project, North Butte ISR Project, Nichols Ranch ISR Project, Moore Ranch ISR Project and Reno Creek ISR Project. It also includes Class III permits issued or amended in 2017 for the Nichols Ranch ISR Project (Jane Dough Amendment) and Burke Hollow ISR Project in Texas.

G-13: It is noted that some historical and recent ISR projects (e.g., the Cameco Resources Crow Butte ISR Project and the UEC Burke Hollow ISR Project) received aquifer exemptions for the majority of the permit area. Powertech originally proposed an aquifer exemption boundary at a reasonable distance from the ISR wellfields (1,600 feet from the injection and production wells), which was consistent with WDEQ, Land Quality Division Chapter 11 regulations. This would have provided an operational buffer for adjusting wellfield boundaries based on delineation drilling and for ensuring that ISR solutions remain within the exempted aquifer. At EPA's request, Powertech revised the proposed aquifer exemption boundary to only include a very narrow buffer area extending 120 feet from the perimeter monitoring well ring for the proposed

wellfields. Many of the proposed requirements in the draft permit, such as installing additional down-gradient compliance boundary monitoring wells if a statistically significant increase is observed during post-restoration groundwater monitoring, would fit within a larger aquifer exemption buffer area. However, these requirements are poorly suited to the relatively small area currently proposed. When Powertech proposed the 120-foot offset distance at EPA's request, it was unaware of the proposed permit conditions that would make this narrow buffer area operationally challenging. Accordingly, EPA should approve the ¼-mile buffer in the designation of the exempted aquifer if the proposed permit conditions are imposed, as described in Attachment A-10.

G-14: Despite citing no evidence that any impacts outside of the exempted aquifer have ever occurred at a domestic ISR facility and no evidence that there are site-specific conditions at the Dewey-Burdock Project that warrant additional monitoring and corrective actions, the draft permit would impose millions of dollars in additional well installation, monitoring, column testing, laboratory analysis and other costs such as maintaining lease agreements with affected landowners for decades or even hundreds of years and maintaining financial responsibility for virtually the entire project for this same duration. This is illustrated in Table G-2, which provides an estimated cost for the additional proposed requirements beyond current NRC license requirements.

Table G-2. Itemized Life-of-Mine Cost Estimate for Proposed Permit Requirements beyond NRC License Requirements

Item	Life-of-Mine Cost Estimate
Groundwater Monitoring – Laboratory Analysis[1]	$13,102,600
Groundwater Monitoring – Sample Collection	$3,565,900
DGCB Monitoring Well Installation	$4,326,500
DGCB Monitoring Well Reclamation	$507,400
Core Collection and Storage	$224,000
Core Leach Testing	$571,600
Geochemical Modeling	$2,800,000
Contingency at 20%	$5,019,600
Total Life-of-Mine Cost[2]	**$30,117,600**

Notes:

[1] Includes DGCB monitoring wells plus additional laboratory analysis costs for analyzing non-injection interval monitoring wells, nearby domestic wells, operational monitoring wells, and other water samples for the Table 8 list of parameters rather than the NRC-approved list of parameters in Table 6.1-1 of the approved NRC license application.

[2] Uses a very conservative assumption of 6 years of post-restoration groundwater monitoring for each wellfield, assuming pumping of DGCB monitoring wells and then monitoring for two 2-year periods after arrival of the tracers injected at the down-gradient and upgradient wellfield boundary. Does not include added cost for maintaining financial responsibility and maintaining lease agreements for several additional years.

The cost estimate is based on well estimates and unit cost estimates from the most recent economic study of the project: NI 43-101 Technical Report, Preliminary Economic Assessment, Dewey-Burdock Uranium ISR Project, April 2015 (Exhibit 026). The estimate uses a very conservative assumption of 6 years of post-restoration groundwater monitoring, assuming

pumping of DGCB monitoring wells and then monitoring for two 2-year periods after arrival of the tracers injected at the down-gradient and upgradient wellfield boundary. As described in Attachment A-3, the duration of post-restoration groundwater monitoring under natural groundwater flow conditions could be hundreds of years, which would have an exponential impact on this cost estimate.

G-15: The Draft Cumulative Effects Analysis extends well beyond EPA's regulatory requirement under 40 CFR § 144.33(c)(3). That requirement allows authorization for multiple injection wells under an area permit provided that "[t]he cumulative effects of drilling and operation of additional injection wells are considered by the Director during evaluation of the area permit application and are acceptable to the Director" (emphasis added). Many aspects of the Draft Cumulative Effects Analysis do not relate to drilling and operation of the Class III or V injection wells, including: potential groundwater consumption and drawdown, which are only related to production wells and Madison water supply wells (Sections 3.1 and 3.2), potential effects of storage ponds on groundwater quality (Section 3.3.4), potential impacts from spills and leaks other than those from injection wells (Sections 3.3.5, 5.0 and 5.7), diversion channels around ponds and facilities (Section 4.2.3), potential impacts from land application for treated wastewater (Sections 4.7.2 and 7.3), potential pipeline leaks (Section 5.1), potential header house leaks (Section 5.2.1), potential processing facility leaks (Section 5.3), potential transportation accidents (Section 5.5), potential pond leaks (Section 5.6), potential land use impacts other than those related to injection wells (Section 6.0), potential radiological impacts (Section 9.0), potential air quality impacts other than those related to construction and operation of Class III and V injection wells (Section 10.0), potential climate change impacts other than those related to construction and operation of Class III and V injection wells (Section 11.0), potential transportation impacts (Section 12.0), potential impacts from accidents (Section 13.0) and potential impacts from waste management (Section 15.0). Such a cumulative effects analysis is not provided for under UIC regulations and should not be included in the draft permit documents.

G-16: Powertech is frustrated by the amount of time that it has taken EPA to review the draft permit applications and requests that EPA expedite efforts moving forward to the extent possible. Powertech submitted the Class III UIC permit application in December 2008, and it was determined to be administratively complete in February 2009, more than 8 years ago. Powertech updated the application in July 2012 to be consistent with the updated NRC license application, and in February 2014 EPA indicated that it intended to announce its draft permit decisions in April 2014. Contrary to this statement and without issuing any more substantive comments to Powertech, it took another 3 years to issue the draft permit. Similarly, the Class V permit application was submitted in March 2010 and the draft permit was not issued until 7 years later. The amount of time taken by the EPA to review the permit applications has also caused undue financial burden to the Company. Going forward, Powertech requests that EPA take steps necessary and bring resources to bear to facilitate a more timely process of review of this application.

In conclusion, Powertech's primary concern is that the draft permit would impose a raft of unprecedented and wholly unwarranted new requirements for an ISR operation that would prove both operationally and financially burdensome. EPA has offered no sound scientific or factual justification for the imposition of these additional requirements. Many of the requirements are also untested and technically infeasible. Because these requirements would be uniquely imposed on Powertech, Dewey-Burdock operations would be subjected to a substantial economic and competitive disadvantage. In an effort to facilitate a constructive working relationship, Powertech has presented alternatives for certain permit conditions (Attachments A-1 through A-10). Although these alternatives include added monitoring, geochemical modeling, and corrective action provisions beyond those required by NRC and which would significantly add to the project cost, they would provide EPA with the necessary assurance that there is no endangerment to adjacent, non-exempt aquifers from the Dewey-Burdock Project.

Powertech appreciates the opportunity to provide these comments and would be happy to discuss them with EPA. We request that EPA give these comments full consideration and produce a revised permit that reflects the current regulations, technical situation and past permits, and we request that this be done within a reasonable time frame.

Sincerely,

John Mays
Chief Operating Officer
Powertech (USA) Inc.

Enclosures:

Table 1.	Class III Draft Area Permit Specific Comments and Recommended Permit Language Revisions
Table 2.	Draft Class III Draft Area Permit Fact Sheet Specific Comments
Table 3.	Draft Aquifer Exemption Boundary Record of Decision Specific Comments
Table 4.	Draft Cumulative Effects Analysis Specific Comments
Table 5.	Draft Environmental Justice Analysis Specific Comments

Attachment A Proposed Alternate Solutions

Attachment A-1.	Proposed Alternate Solution to Core Sampling
Attachment A-2.	Proposed Alternate Solution to Locating Down-gradient Compliance Boundary Monitoring Wells
Attachment A-3.	Proposed Alternate Solution to Post-restoration Groundwater Monitoring
Attachment A-4.	Proposed Alternate Solution to Establishing Baseline Water Quality for Down-gradient Compliance Boundary Monitoring Wells
Attachment A-5.	Proposed Alternate Solution to Column Testing
Attachment A-6.	Proposed Alternate Solution to Monitoring and Corrective Actions for an Excursion Detected in a Non-injection Interval Monitoring Well
Attachment A-7.	Proposed Alternate Solution to Monitoring and Corrective Actions for an "Expanding Excursion Plume"
Attachment A-8.	Proposed Alternate Solution to Monitoring and Corrective Actions for a "Remnant Excursion Plume"
Attachment A-9.	Proposed Alternate Solution to Non-injection Interval Monitoring during Post-restoration Groundwater Monitoring
Attachment A-10.	Proposed Alternate Solution to Aquifer Exemption Boundary Location

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
1	1	**I.A. Class III Permit Area Boundary** ...Figure 2a shows the Dewey Area ore zones and wellfields in Sections 29, 30, 31, ~~and~~ 32 and 33 of Township 6 South, Range 1 East....	As shown in Table 1 and Figure 2a, two Dewey Area wellfields are planned within Section 33.	The legal description of the Dewey Area wellfields is incorrect.
2	2	**I.B. Well Locations** ... The UIC regulations specific to South Dakota are found at 40 CFR ~~§ 147.2100~~ part 147, subpart QQ...	Powertech suggests changing the reference to the more general 40 CFR part 147, subpart QQ or else 40 CFR § 147.2101, which pertains to Class III wells.	Why are South Dakota regulations in 40 CFR § 147.2100 referenced, when those regulations are for Class II wells?
3	4-5	Remove "Deep Class I Disposal Well #4" and "Deep Class I Disposal Well #2" from legend and plan view of Figures 2a and 2b, respectively.	Class I wells are not proposed by Powertech.	Class I wells should not be depicted on Figures 2a and 2b.
4	6	**II.A. Wellfield Location Restrictions** All wellfields and perimeter monitoring wells shall be located within the Permit Area boundary described in Part I. No ~~wellfields~~ Class III injection or production wells shall be located within 1,600 feet of the Permit Area boundary in order to establish an operational buffer between the wellfields and the Permit Area boundary.	The suggested modification is requested to make it clear that "wellfield" in this context includes the production and injection wells but not the perimeter monitoring wells. This is consistent with the first sentence in this paragraph, which begins "All wellfields <u>and</u> perimeter monitoring wells ..."	The draft permit condition may be misconstrued as requiring perimeter monitoring wells to be located at least 1,600 feet from the permit area boundary.
5	7	**Table 3. Example Cross Section Locations Required for Each Wellfield** **D-WF2** — A minimum of 1 cross section along trend of Middle and/or Lower Chilson roll fronts delineating Middle and/or Lower Chilson ore deposits approximately parallel to cross section J – J' as shown in Appendix A, Figure A1. A minimum of 1 cross section intersecting the first cross section also delineating Middle and/or Lower Chilson ore deposits located in the middle of the west side of D-WF2, as	Powertech requests updating the description of the mineralized horizons in Dewey Wellfield 2 in Table 3 and Table 1 in the Fact Sheet. This change would make the cross section description consistent with that for B-WF4, 6, 7 and 8.	Plate 6.21 (Cross Section J-J') in the permit application shows ore in both the Middle and Lower Chilson in D-WF2. This comment also applies to Table 1 in the Fact Sheet, which shows only Middle Chilson for Dewey Wellfield 2.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		shown in Appendix A, Figure A1. The cross sections shall clearly identify aquifer units, confining units and Middle and/or Lower Chilson ore targeted by D-WF2. Also include any intersected ore zones targeted by D-WF1, D-WF3 and D-WF4 as applicable.		
6	8	**Table 3. Example Cross Section Locations Required for Each Wellfield** **B-WF6**: A minimum of the ~~9~~ 7 cross sections in the approximate locations shown in Appendix A, Figure A5 delineating Middle and/or Lower Chilson ore deposits. The cross sections shall clearly identify aquifer units, confining units and Middle and/or Lower Chilson ore deposits ore deposits targeted by B-WF6. Also include any intersected ore zones targeted by B-WF1 and B-WF7 as applicable. **B-WF7**: A minimum of the ~~2~~ 1 cross section~~s~~ shown in Appendix A, Figure A5 delineating Middle and/or Lower Chilson ore deposits. The cross section~~s~~ shall clearly identify aquifer units, confining units and Middle and/or Lower Chilson ore deposits ore deposits targeted by B-WF7.	Powertech requests updating the minimum number of cross sections listed in Table 3 for Burdock Wellfields 6 and 7 to match the Appendix A figures.	The minimum number of cross sections listed in Table 3 does not appear to match the cross sections depicted in the Appendix A figures. For B-WF6, a minimum of nine cross sections are specified, but Figure A5 appears to show seven. For B-WF7, the table specifies two, but Figure A5 appears to show only one.
7	8-9	**Table 3. Example Cross Section Locations Required for Each Wellfield** **B-WF2**: … The cross sections shall clearly identify aquifer units, confining units and Middle Chilson ore deposits ~~ore deposits~~ targeted by B-WF2… **B-WF4**: … The cross sections shall clearly identify aquifer units, confining units and Middle	Typographical correction.	Powertech suggests correcting "ore deposits ore deposits" under B-WF2, B-WF4, B-WF6, B-WF7, B-WF8 and B-WF10.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		and/or Lower Chilson ore deposits ~~ore deposits~~ targeted by B-WF4… **B-WF6** … The cross sections shall clearly identify aquifer units, confining units and Middle and/or Lower Chilson ore deposits ~~ore deposits~~ targeted by B-WF6… **B-WF7** … The cross sections shall clearly identify aquifer units, confining units and Middle and/or Lower Chilson ore deposits ~~ore deposits~~ targeted by B-WF7… **B-WF8** … The cross sections shall clearly identify aquifer units, confining units and Middle and/or Lower Chilson ore deposits ~~ore deposits~~ targeted by B-WF8… **B-WF10** … The cross sections shall clearly identify aquifer units, confining units and Lower Fall River ore deposits ~~ore deposits~~ targeted by B-WF10….		
8	9	**2.C. Wellfield Pump Test Design and Pump Test Well Installation** 2.a. Identify ~~each~~ the proposed production and injection well ~~location~~ patterns and approximate screened intervals.	Powertech requests modification of the permit condition to accommodate phased development of each ISR wellfield, in accordance with standard ISR industry practice and commitments in the permit application.	The current permit condition could be interpreted as requiring the installation of <u>all</u> production and injection wells within each wellfield prior to pump testing. That would be inconsistent with page 8-16 of the permit application, which indicates that the Injection Authorization Data Packages will include a "Commitment to completing MIT and preparing well completion reports for all injection wells prior to initiating injection into the wellfield." It would also be inconsistent with page 70 of the Fact Sheet, which indicates that the Injection Authorization Data Package Reports should contain "Map(s) showing the <u>proposed</u> production and injection well patterns." Similarly, page 56 of the Draft Cumulative Effects

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
				Analysis (Section 5.2.1) describes how "As a wellfield expands, Powertech will construct additional header houses connected via buried header piping." It is standard ISR industry practice to install and test the complete monitoring well network for each wellfield and a representative number of injection and production wells that are used for baseline water quality sampling and hydrologic testing. It is not standard ISR industry practice to install all of the injection and production wells prior to beginning operations. These are typically added for each header house at a time, as opposed to installing all of the production and injection wells for the entire wellfield at once.
9	10	**Table 4. Observation Wells for Monitoring the Integrity of the Morrison Formation Lower Confining Zone** ELT 14 | SESE Section 30 T6S R1E | Dewey WF2 | Hydro ID 693 DB08-32-11 | NENW Section ~~29~~ 32 T6S R1E | Dewey WF2 | NENW Section ~~29~~ 32 T6S R1E	Powertech requests correction of the legal locations for Hydro ID 693 and DB08-32-11.	The location of Hydro ID 693 should be Section 32, as described in Table 17.4 of the permit application and as shown on Figure 14 and listed in Table 16 of the draft permit. Also, the location of DB08-32-11 should be in Section 32, as shown on Plate 6.6 of the permit application.
10	10	**Table 4. Observation Wells for Monitoring the Integrity of the Morrison Formation Lower Confining Zone** DRJ 90 | SESE Section 35 T6S R1E ~~T6S R1E~~ DB08-1-7 | SE Section ~~2~~ 1 T7S R1E	Powertech requests correction of the legal locations DRJ 90 and DB08-1-7.	The location of DRJ 90 should be in the SESE quarter and the location of DB08-1-7 should be in Section 1, as shown on Plate 6.6 of the permit application. Also, there is a typo in "T6S R1E T6S R1E."
11	11	~~**II.D.5. Injection Zone Core Sample Collection from Monitoring Wells Located Down-gradient of Wellfields**~~ ~~a. The Permittee shall collect a minimum of two (2) cores per wellfield through the proposed injection interval while drilling the down-gradient perimeter~~	Please refer to Attachment A-1 for a proposed alternate solution to collecting at least two cores per wellfield while drilling the down-gradient	Attachment A-1 includes comments regarding the proposed requirement to collect core samples prior to ISR operations.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~monitoring wells ring wells or the Down-gradient Compliance Boundary Wells.~~ ~~b. Core shall be recovered and preserved in a manner to prevent further oxidation so as to be representative of in-situ geochemical conditions for use in columns tests as part of Post-Restoration Monitoring to verify that no ISR contaminants will cross the down-gradient aquifer exemption boundary.~~	perimeter monitoring well ring or the Down-gradient Compliance Boundary wells. Comment #28 includes recommended alternative language under Part IV, Section D of the draft permit to replace that in Part II, Section D.5.	
12	12	**II.E.2. The Permittee shall follow these procedures while conducting the formation testing described in Table 6:** **a. Determination of Aquifer Potentiometric Surfaces** i. Once the potentiometric surface has stabilized within each aquifer after well development, static potentiometric surface water levels shall be measured in every perimeter and non-injection interval monitoring well and a representative number of injection or production wells ~~in every aquifer unit~~ in the wellfield~~, including injection, production and monitoring wells~~.	Powertech requests modification of the permit condition to accommodate phased development of each ISR wellfield, in accordance with standard ISR industry practice and commitments in the permit application.	As described in comment #8, not every injection and production well would be installed during initial wellfield development. This change would also make this permit condition consistent with Table 6, which specifies water level measurement requirements "in all pump test wells" (as opposed to all wells), and page 56 of the Fact Sheet, which indicates that "static potentiometric levels must be measured in every pump test well."
13	13	**II.E.2. The Permittee shall follow these procedures while conducting the formation testing described in Table 6:** **a. Determination of Aquifer Potentiometric Surfaces** iv. Once the potentiometric surface has stabilized within each aquifer after the pump test, static potentiometric water levels shall be measured in every perimeter and non-injection interval monitoring well and a representative number of injection or production wells ~~in every aquifer unit~~ in the wellfield~~, including injection, production and monitoring wells~~, prior to the initiation of injection into the wellfield to determine if there have been any changes in water levels not attributable to changes in barometric pressure.	Powertech requests modification of the permit condition to accommodate phased development of each ISR wellfield, in accordance with standard ISR industry practice and commitments in the permit application.	As described in comment #8, not every injection and production well would be installed during initial wellfield development. This change would also make this permit condition consistent with Table 6, which specifies water level measurement requirements "in all pump test wells" (as opposed to all wells), and page 56 of the Fact Sheet, which indicates that "static potentiometric levels must be measured in every pump test well."

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
14	13	**II.E.2. The Permittee shall follow these procedures while conducting the formation testing described in Table 6:** **b. Sampling and Analysis of Injection Interval and Non-injection Interval Monitoring Wells** i. After the construction and development of the wellfield perimeter monitoring wells ~~(and Down-gradient Compliance Boundary Wells)~~ completed within the injection interval and the monitoring wells completed in aquifers above and below (where applicable) the injection interval, the Permittee shall collect groundwater samples from each well according to the following procedures: A) The Permittee shall ~~use the *Standard Operating Procedure for Low-Stress (Low Flow) / Minimal Drawdown Ground-Water Sample Collection*~~ purge at least three casing volumes prior to sample collection and measure the field parameters listed in Table 7 at the surface as fluid is pumped out of the well to determine when collection of a representative sample is possible.	Powertech requests changing the monitoring well sampling requirements for consistency with standard ISR industry practice and NRC license requirements. Powertech also requests removal of "Down-gradient Compliance Boundary Wells" based on the alternate solution to post-restoration groundwater monitoring provided in Attachment A-3.	The proposed requirement to use low-stress/low-flow sampling techniques for collecting water samples from monitoring wells is inconsistent with NRC license requirements. In Section 14.2.2 of the permit application, Powertech committed to establishing baseline water quality in all monitoring wells "according to NRC license requirements." Those requirements are found in Section 5.7.8.2 of the approved NRC license application (Exhibit 010) and include measuring the static water level (or shut-in pressure for flowing artesian wells), purging three casing volumes, and measuring field pH, specific conductance and temperature until each field parameter stabilizes within 10%. Typically, monitoring wells will have dedicated submersible pumps, which are not compatible with low-flow sampling techniques. In fact, NRC reviewed a recent licensee's low-flow sampling methodology and determined that it is not appropriate for groundwater protection monitoring during ISR operations (Exhibit 011).
15	13	**Table 7. Field Parameters to be Monitored and Stabilization Criteria to Meet before Sample Collection** **Parameter** / **Stabilization Criteria** pH / ± ~~0.1~~ 10% pH units Specific conductance / ± ~~3~~10% µS/cm Temperature / ± 10% °C ~~Oxidation-reduction potential~~ / ~~± 10 millivolts~~ ~~Turbidity~~ / ~~± 10 % NTUs when turbidity is greater than 10 NTUs~~	Powertech requests changing the stabilization parameters and criteria for consistency with standard ISR industry practice and NRC license requirements.	As described in the previous comment, the NRC license requires analysis of three field parameters (pH, specific conductance and temperature) during monitor well sampling. The approved NRC license application also specifies a stability criterion of 10% for each of these constituents. For consistency with the NRC license, Powertech suggests changing Table 7 to list these three constituents along with the 10% stabilization criterion for each. Analysis of oxidation-reduction potential (ORP), turbidity and dissolved oxygen are not included

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~Dissolved oxygen~~ | ~~± 0.3 milligrams per liter~~		in the NRC license requirements. Powertech requests omitting these constituents from Table 7 for that reason and since these constituents are not common indicator parameters for the relatively deep, bedrock aquifers that will be monitored. For example, the EPA guidance document cited under Part II, Sec. E.2.b.i.A indicates that "Oxidation-reduction potential may not always be an appropriate stabilization parameter." Similarly, Appelo and Postma 2004 (Exhibit 039 at 16) state that "Eh measurements only give a qualitative indication of redox conditions and should be made as sloppy as possible, so you will not be tempted to relate then to anything qualitative afterwards." Similarly, dissolved oxygen measurements, particularly at low levels, are difficult to measure and to interpret. Due to the potential for ambient (atmospheric) contamination, no conclusions can reliably be drawn from dissolved oxygen measurements under typical field conditions. ORP, turbidity and dissolved oxygen are appropriate for surface water or shallow groundwater sampling where the water would be expected to have seasonal variation in turbidity levels and varying dissolved oxygen and ORP concentrations. They are not appropriate for deep bedrock aquifers where oxygen is absent and turbidity is only related to well development and does not affect dissolved constituent concentrations.
16	14-15	**Table 8. Baseline Water Quality Parameter List** **Test Analyte/Parameter[2]** | **Units** **Physical Properties** pH[3] | pH Units	Powertech requests modifying the baseline water quality parameter list for consistency with NRC license requirements.	There is an inconsistency between the NRC license and draft permit in terms of the parameters sampled during baseline monitoring in the perimeter monitoring wells, wells

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification		Explanation of Alternative(s)	Comment
		Total Dissolved Solids (TDS)	mg/L		completed within the injection interval, and non-injection interval monitoring wells. License Condition 11.3 of SUA-1600 (Exhibit 016) requires Powertech to sample these wells for the parameters listed in Table 6.1-1 of the approved NRC license application. Part II, Section E.2.b.iii would require Powertech to have samples from the same wells analyzed for a significantly different set of parameters. Key differences include: 1. Additional radiological parameters in Table 8, including gross gamma, lead-210, polonium-210 and thorium 230. 2. Table 6.1-1 in the approved NRC license application specifies adjusted gross alpha (excluding activity from radon and uranium), but Table 8 does not. 3. Additional metals and trace elements in Table 8, including aluminum, antimony, beryllium, strontium, thallium and thorium. 4. Total metals in Table 8 vs. dissolved metals in Table 6.1-1 of the approved NRC license application. 5. The addition of silica in Table 8. Since these wells typically would be within the exempted aquifer, Powertech questions the need to significantly expand the list of parameters beyond what was approved by NRC, especially since that list was taken directly from NRC guidance (NUREG-1569, Exhibit 012) and reflects constituents typically affected by ISR operations. The Table 8 comments below provide specific justification for excluding the extra radiological parameters, metals/trace
		Specific Conductance[3]	µmhos/cm		
		Common Elements and Ions			
		Total alkalinity (as Ca CO_3)	mg/L		
		Bicarbonate Alkalinity (as Ca CO_3)	mg/L		
		Calcium	mg/L		
		Carbonate Alkalinity (as Ca CO_3)	mg/L		
		Chloride, Cl	mg/L		
		Magnesium, Mg	mg/L		
		Nitrate, NO_3^- (as Nitrogen)	mg/L		
		Potassium, K	mg/L		
		~~Silica, Si~~	~~mg/L~~		
		Sodium, Na	mg/L		
		Sulfate, SO_4	mg/L		
		~~Total~~ Dissolved Metals			
		~~Aluminum, Al~~	~~mg/L~~		
		~~Antimony, Sb~~	~~mg/L~~		
		Arsenic, As	mg/L		
		Barium, Ba	mg/L		
		~~Beryllium, Be~~	~~mg/L~~		
		Boron, B	mg/L		
		Cadmium, Cd	mg/L		
		Chromium, Cr	mg/L		
		Copper, Cu	mg/L		
		Fluoride, F	mg/L		
		Iron, Fe	mg/L		
		Lead, Pb	mg/L		
		Manganese, Mn	mg/L		
		Mercury, Hg	mg/L		
		Molybdenum, Mo	mg/L		
		Nickel, Ni	mg/L		
		Selenium, Se	mg/L		
		Silver, Ag	mg/L		
		~~Strontium, Sr~~	~~mg/L~~		
		~~Thallium, Tl~~	~~mg/L~~		

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~Thorium, Th~~ ~~mg/L~~ Uranium, U mg/L Vanadium, V mg/L Zinc, Zn mg/L **Radiological Parameters** Gross Alpha[4] pCi/L ~~Gross Beta~~ ~~pCi/L~~ ~~Gross Gamma~~ ~~pCi/L~~ ~~Lead-210~~ ~~pCi/L~~ ~~Polonium-210~~ ~~pCi/L~~ Radium, Ra-226 pCi/L ~~Thorium-230~~ ~~pCi/L~~ [2]Laboratory analysis only, except where indicated. [3]Field and Laboratory [4]Exlcuding radon and uranium		elements and silica from Table 8. Overall, the addition of the extra parameters would slow sample turn-around time and cost millions of dollars extra without providing any added protection for USDWs beyond what is already required by NRC license requirements.
17	14-15	See comment #16.	Powertech requests omitting gross gamma, lead-210, polonium-210, and thorium-230 from the baseline water quality parameter list for consistency with NRC license requirements.	It is appropriate to remove gross gamma, lead-210, polonium-210, and thorium-230 from the list of radiological parameters required for baseline water quality analysis on the following basis: 1. They are not required by NRC license requirements (see Table 6.1-1 of the approved NRC license application, Exhibit 010). 2. They are not listed in NRC guidance for pre-operational baseline groundwater monitoring (see Table 2.7.3-1 and Sections 2.7.3 and 5.7.8.3 in NUREG-1569, Exhibit 012). 3. Thorium-230 is specifically evaluated in NUREG-1569, which determined that "after restoration, thorium in the ground water will not remain in solution because the chemistry of thorium causes it to precipitate and chemically react with the rock matrix."

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
				4. They have the longest turn-around times of all analytes (standard turn-around time is 20 business days, Exhibit 013). 5. They account for most of the added cost of analysis but are unnecessary to monitor according to the federal agency with primary regulatory jurisdiction for uranium ISR projects in South Dakota (NRC).
18	14-15	See comment #16.	Powertech requests omitting aluminum, antimony, beryllium, strontium, thallium, and thorium from the baseline water quality parameter list.	It is appropriate to remove the following metals and trace elements from the list of baseline water quality parameters: aluminum, antimony, beryllium, strontium, thallium and thorium. These changes are requested on the following basis: 1. They are not required by NRC license requirements (see Table 6.1-1 of the approved NRC license application, Exhibit 010). 2. They are not listed in NRC guidance for pre-operational baseline groundwater monitoring (see Table 2.7.3-1 and Sections 2.7.3 and 5.7.8.3 in NUREG-1569, Exhibit 012). 3. Aluminum, antimony, beryllium and thallium were below detection limits in all Fall River wells and all but one of the Chilson wells sampled during the site characterization baseline sampling (see Appendix N in the permit application). 4. Aluminum was specifically evaluated in NUREG-1569, which determined that "in situ leach operations are not expected to mobilize aluminum." 5. Thorium-232 (natural thorium) was below detection limits in all Fall River wells and all

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
				Chilson wells sampled during the site characterization baseline sampling (see Appendix N in the permit application). 6. The State of South Dakota does not have a human health standard for strontium in ARSD 74:54:01 Groundwater Quality Standards. Strontium is not generally associated with uranium deposits.
19	14-15	See comment #16.	Powertech requests omitting silica from the baseline water quality parameter list.	It is appropriate to remove silica from the list of baseline water quality parameters on the following basis: 1. It is not required by NRC license requirements (see Table 6.1-1 of the approved NRC license application, Exhibit 010). 2. The only basis found within the Fact Sheet indicates that it is "included in case Powertech or the UIC Director decides reactive transport modeling is needed …" Although geochemical modeling may involve analysis of constituents other than those required for baseline characterization, such analysis would typically be limited to the restored aquifer and/or down-gradient wells, which would be the primary focus of the modeling efforts. Powertech could find no basis for requiring analysis of silica in all monitoring wells or for establishing compliance limits for silica based on the baseline sampling results. 3. Even in the context of reactive transport modeling, the benefits of having silica and aluminum data would be slight. The near neutral pH present in typical ISR lixiviants will do little to dissolve silicate minerals.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
20	14-15	See comment #16.	Powertech requests modifying the baseline water quality parameter list to specify dissolved rather than total metals.	It is appropriate to analyze the dissolved fraction of metals rather than the total concentration during baseline water quality sampling on the following basis: 1. Dissolved metal analysis is required by NRC license requirements (see Table 6.1-1 of the approved NRC license application, Exhibit 010). Analyzing the same constituents for dissolved concentrations under the NRC license and total concentrations under the EPA permit would lead to confusion regarding establishing UCLs, groundwater restoration targets, etc. 2. The wells for which the baseline monitoring list would apply would be within the exempted aquifer, where NRC has primary regulatory authority for excursion monitoring, groundwater restoration, etc. Therefore, it is appropriate to use the NRC-approved constituent list. 3. Analytical results representing the soluble (mobile) metals are more appropriate than suspended (particulate) metals. 4. Dissolved analyses generally are preferred for most RCRA, CERCLA, and SDWA programs and consistent with permit requirements for UIC wells in other EPA regions and states. 5. MCLs for inorganic constituents in 40 CFR part 141 generally apply to the dissolved fraction of the constituent. 6. South Dakota human health standards for inorganic constituents except for mercury apply to the dissolved portion (ARSD 74:54:01:04).

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
21	14-15	See comment #16.	Powertech requests modifying the baseline water quality parameter list to specify adjusted gross alpha.	It is appropriate to analyze for adjusted gross alpha (excluding activity from radon and uranium) in the baseline samples on the following basis: 1. Table 6.1-1 in the approved NRC license application specifies adjusted gross alpha. 2. The gross alpha MCL in 40 CFR § 141.66 is for adjusted gross alpha (excluding radon and uranium).
22	15	**II.F. Wellfield Pump Test Requirements** 3. The Permittee shall conduct the wellfield pump tests with sufficient iterations and using pumping wells in as many locations within the wellfield as necessary to create drawdown in each injection interval perimeter monitoring well.	Powertech requests modification of Section 5.4 of the Fact Sheet for consistency with the draft permit and permit application. No change is requested to the draft permit condition.	Section 5.4 of the Fact Sheet states that "The pump test duration must be sufficient to create a suitable response in the injection interval perimeter monitoring well ring, a minimum drawdown of 1 foot." This is not specified in the draft permit provision, which states that that the wellfield pump tests should be conducted "as necessary to create drawdown in each injection interval perimeter monitoring well." It is also not consistent with the application, which indicates that the minimum drawdown would "typically" be 1 foot but does not commit to creating 1 foot of drawdown in every perimeter monitoring well. There may be instances where a pumping test produces a clear response in a perimeter monitoring well, but due to distance from the pumping well or other considerations the response is not more than 1 foot.
23	15-16	**II.G. Additional Requirements to Obtain Authorization to Inject for Burdock Wellfields 6, 7 and 8** 1. Because the Chilson Sandstone down-gradient from Burdock Wellfields 6, 7 and 8 has been partially oxidized by native groundwater, the Permittee shall evaluate the capacity of the down-gradient Chilson Sandstone to remove residual contamination from restored wellfield	Powertech proposes to conduct geochemical modeling using site-specific data rather than column testing to demonstrate that no ISR contaminants will cause a violation of MCLs or otherwise adversely affect human health	Please refer to Attachment A-5 for a proposed alternate solution to column testing and Attachment A-3 for explanation of geochemical modeling proposed in place of laboratory bench-scale testing to demonstrate that contaminants will not cross the down-gradient aquifer exemption boundary and cause a violation of any

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		groundwater as it travels down-gradient toward the aquifer exemption boundary. 2. To fulfill this requirement the Permittee shall: a. ~~Collect a minimum of two (2) cores per wellfield through the proposed injection interval while drilling the down-gradient perimeter monitoring wells ring wells or the Down-gradient Compliance Boundary Wells.~~ Conduct geochemical modeling using site-specific data to demonstrate that contaminants will not cross the down-gradient aquifer exemption boundary and cause a violation of any primary MCLs or otherwise adversely affect the health of persons. b. ~~Core shall be recovered and preserved in a manner to prevent further oxidation so as to be representative of in-situ geochemical conditions.~~ Conduct column testing, batch sorption testing, or other approved laboratory or field testing method to provide site-specific inputs into the geochemical modeling, as specified in Part IV, Section D.1.a. c. ~~Compile vertical composite samples from single cores and conduct at least two laboratory bench-scale column tests per wellfield on the composite samples. The two column tests shall be conducted using the following leachates:~~ Submit geochemical modeling results to the Director demonstrating that no ISR contaminants will cross the down-gradient aquifer exemption boundary and cause a violation of any primary MCLs or otherwise adversely affect the health of persons. ~~i. One column test shall be conducted using unrestored wellfield groundwater taken from a wellfield in which uranium recovery has been completed, but before groundwater restoration has begun, and~~ ~~ii. The second column test shall be conducted using restored wellfield groundwater.~~	outside of the exempted aquifer for Burdock Wellfields 6, 7 and 8. Attachment A-3 provides explanation of the relative advantages of geochemical modeling to column testing.	primary MCLs or otherwise adversely affect the health of persons. In addition to the justification provided in Attachment A-3, Powertech asserts that geochemical modeling should be used rather than column testing or other laboratory-scale bench testing to evaluate the potential impact of the partially oxidized groundwater down-gradient from Burdock Wellfields 6, 7 and 8 for the following reasons: 1. EPA appears to be focused exclusively on the attenuation capacity down-gradient of the wellfield, whereas the key for successful groundwater restoration is to demonstrate the aquifer's capacity to maintain stability within the wellfield to prevent uranium and other constituents from remobilizing. As described in Attachment A-3, EPA has concluded that geochemical modeling can be used to provide a "defensible demonstration" that these criteria are met. Powertech is not aware of column testing being used on any ISR projects to make this demonstration. 2. Unlike column testing, geochemical modeling has the ability to evaluate how much oxygen will remain in the wellfield following groundwater restoration. As described on p. 197 of the Dewey-Burdock Safety Evaluation Report (SER, Exhibit 014 at 197): In assessing the potential for groundwater restoration, the staff

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~d. The column testing fluids shall be analyzed for the analytes in Table 8 before and after recovery from the column so that changes in analyzed constituent concentrations may be determined.~~ ~~e. After the tests in Part II, Sections G.1.c.i and G.1.c.ii have been completed, a second round of tests shall be run on these same columns using groundwater collected from up-gradient perimeter monitoring wells to determine if any constituents adsorbed or precipitated on the column matrix during the Part II, Sections G.1.c.i and G.1.c.ii column tests are released into solution by the up-gradient groundwater leachate. The up-gradient groundwater samples shall be analyzed for constituents in Table 8 before and after recovery from the column test to determine if there is a statistically significant increase in analyzed constituent concentrations after leaching through the column.~~ ~~f. If the Part II, Sections G.1.c.i and G.1.c.ii column test leachates do not demonstrate an adequate decrease in ISR contaminant concentrations after passing through the columns or the up-gradient perimeter monitoring well groundwater tests show an increase in contaminant levels after passing through the columns, then the Permittee shall submit a groundwater treatment plan to the Director describing measures for preventing ISR contaminants from crossing the down-gradient aquifer exemption boundary. The plan may include geochemical modeling results demonstrating that no ISR contaminants will cross the down-gradient aquifer exemption boundary. The geochemical model should be calibrated with laboratory and/or field data.~~ 3. If, during the wellfield pump tests using a pumping rate simulating production and restoration in Burdock Wellfields 6, 7 or 8, the Chilson aquifer potentiometric surface is drawn down to the point where the proposed		reviewed a geochemical modeling report on the Dewey-Burdock site prepared by the USGS, under contract by the USEPA (Johnson, R. H., 2011). In its published work to date, USGS determined that the amount of oxygen remaining in the aquifer (production zone) after restoration is a key factor in stability. If some oxygen remains in the production zone, "some uranium is found in the groundwater." If no dissolved oxygen remains then "uranium is not found in solution." 3. Unlike column testing, geochemical modeling has the ability to evaluate the potential impact of reductant addition during groundwater restoration. Although Powertech's NRC license does not currently authorize reductant addition, the license could be amended if needed to permit injection of sodium sulfide or another suitable reductant to deplete any oxygen remaining after groundwater restoration. 4. Unlike column testing, geochemical modeling based on site-specific data has the ability to assess how much reducing or attenuation capacity remains down-gradient from these wellfields. The fact that the uranium roll fronts have not migrated further down-gradient indicates that reducing capacity still exists.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		injection interval becomes less than fully saturated, the Permittee shall develop a 3-D unsaturated groundwater flow model for the area where less than fully saturated conditions are anticipated.		
24	17	**II.H. Injection Authorization Data Package Reports** 2. Each Injection Authorization Data Package Report shall contain a description of all logging and testing procedures required under Part II, Sections B through F (Sections B through G for Burdock Wellfields 6, 7 and 8) and the results of such logs and tests. In summary, each Injection Authorization Data Package Report shall contain the following: o. Estimation of wellfield maximum injection pressure calculated using the equation in Part V, Section F of this Permit and results from wellfield delineation drilling and logging for the purpose of selecting well casing and piping that meet requirements under Part VIII, Section~~s E.2.c and E.3.c~~ E.1.	Powertech requests changing the reference for maximum injection pressure to Part VIII, Section E.1.	Part V, Section F is referenced for the equation for the maximum injection pressure; however, that section contains the fracture pressure equation but not the maximum injection pressure equation.
25	19	**II.I.3. Information to Submit to the Director to Obtain Approval of the Proposed Exemption of Inyan Kara Aquifers within the Proposed Aquifer Exemption Boundary around Burdock Wellfields 6 and 7** If the Permittee has not demonstrated to the Director that Well 16 located in NWSE Section 1 T7S R1E ~~has been plugged and abandoned~~ does not currently serve as a source of drinking water before issuance of the Final Class III Area Permit, the Permittee shall submit the following information to the Director for proposing exemption of the Inyan Kara aquifer within the proposed exemption boundary: a. Injection Authorization Data Package Reports including all the information under Part II, Sections B through G and Section I. This information will serve as additional analysis of the amenability of the injection	Powertech requests that the permit provision be modified for consistency with 40 CFR § 146.4(a).	Powertech disagrees with EPA's conclusion that Well 16 must be plugged and abandoned in order to demonstrate that it is not a drinking water well. Apparently, EPA's conclusion is based on the fact that this well is considered a domestic well and the State of South Dakota does not differentiate between stock water and drinking water uses for domestic wells. There are several problems with this line of reasoning: 1. EPA is overreaching its regulatory authority by declaring that the only way to determine that Well 16 does not currently serve as a source of drinking water, as required by 40 CFR § 146.4(a), is by plugging the well. Proof that the well does not currently serve as a source of drinking water includes the following (Exhibit 032 at 5):

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		interval to the in-situ method for uranium recovery as required under § 144.7(c)(1). b. A demonstration that Well 16 located in NWSE Section 1 T7S R1E ~~has been plugged and abandoned~~ does not currently serve as a source of drinking water.		a. The landowner has signed an agreement that the well cannot be used for drinking water. b. The well is disconnected from any plumbing that would allow it to be used in a residence or otherwise as a drinking water source. c. The well is controlled by lease agreements that give Powertech clear control over the use of the well. d. The well is not accessible by the public. The wellhead is contained within an underground vault. e. Powertech has already provided a replacement source of drinking water for the residence (delivered water). 2. Powertech committed in its Class III permit application and approved NRC license application to provide a replacement water source for any well removed from private use. Powertech is bound by this commitment to provide an alternate drinking water source for the residence formerly served by Well 16 for the duration of the project, which surpasses the regulatory requirement of demonstrating that the well does not <u>currently</u> serve as a drinking water source. 3. Table 17.8 in the Class III permit application demonstrates that Well 16 is unfit for human consumption on the basis that it exceeds MCLs for gross alpha and radium-226.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
26	21	Modify or provide additional explanation as to the possible step rate test locations for the Dewey area depicted on Figure 4.	Powertech requests modification of Figure 4 or additional clarification for consistency with Table 9.	Table 9 specifies that the Lower Fall River step rate test should be on the perimeter monitoring well ring for Dewey Wellfield 1 but outside of the perimeter monitoring well ring for Dewey Wellfields 2 and 4. Table 9 similarly specifies that the Lower or Middle Chilson test should be on the perimeter monitoring well ring for Dewey Wellfield 2 but outside of the perimeter monitoring well ring for Dewey Wellfields 1 and 4. In contrast, Figure 4 shows two possible test locations that both coincide with two different perimeter monitoring rings (1a coincides with Dewey Wellfields 1, 2 and 4, and 1b coincides with Dewey Wellfields 1 and 2).
27	23-28	**PART IV.** ~~DOWN-GRADIENT COMPLIANCE BOUNDARY BASELINE MONITORING~~ ~~AND~~ POST-RESTORATION ~~MONITORING PLAN~~ GEOCHEMICAL MODELING REQUIREMENTS ~~A. Down-gradient Compliance Boundary Post-Restoration Monitoring Plan~~ ~~B. The Post-Restoration Monitoring Plan Shall Meet the Following Requirements:~~ ~~C. Determination of Baseline Constituent Concentrations to be used as Permit Limits for Post-Restoration Monitoring Wells~~	Please refer to Attachment A-3 for a proposed alternate solution to post-restoration groundwater monitoring. In the event that post-restoration monitoring is required, please refer to Attachment A-2 for a proposed alternate solution for locating Down-Gradient Compliance Boundary Monitoring Wells and Attachment A-4 for a proposed alternate solution to establishing initial baseline values and updating baseline values for Down-Gradient Compliance Boundary Monitoring Wells.	Attachment A-3 includes comments regarding the proposed post-restoration groundwater monitoring requirements.
28	28	**IV.**~~AD.~~ ~~Laboratory Column Testing~~ Geochemical Modeling **to Verify Attenuation Capability of Down-gradient Injection Zone Aquifer**	Please refer to Attachment A-5 for a proposed alternate solution to column testing,	Attachment A-5 includes comments regarding proposed column testing requirements.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		1. Once wellfield restoration and stability monitoring haves been completed in a wellfield ~~and restored wellfield groundwater is available for use in the following laboratory tests~~, the Permittee shall ~~use the injection zone core samples collected as required under Part II, Section D.5 to conduct columns tests according to the following specifications~~ conduct geochemical modeling using site-specific data to demonstrate that contaminants will not cross the down-gradient aquifer exemption boundary and cause a violation of any primary MCLs or otherwise adversely affect the health of persons~~:~~. ~~a. Compile vertical composite samples from single cores and conduct at least two laboratory bench-scale column tests per wellfield on the composite samples.~~ ~~b. The two column tests shall be conducted using the following leachates:~~ ~~i. One column test shall be conducted using unrestored wellfield groundwater taken from a wellfield in which uranium recovery has been initiated, but before groundwater restoration has begun, and~~ ~~ii. The second column test shall be conducted using restored wellfield groundwater.~~ ~~c. The column testing fluids shall be analyzed for the analytes in Table 8 before and after recovery from the column so that changes in analyzed constituent concentrations may be determined.~~ ~~d. After the tests in Part IV, Sections D.1.b.i and D.1.b.ii have been completed, a second round of tests shall be run on these same columns using groundwater collected from up-gradient perimeter monitoring wells to determine if any constituents adsorbed or precipitated on the column matrix during the Part IV, Sections D.1.b.i and D.1.b.ii column tests are released~~	Attachment A-3 for a proposed alternate solution to post-restoration groundwater monitoring, and Attachment A-1 for a proposed alternate solution to collecting core samples during wellfield development. Powertech proposes to conduct geochemical modeling using site-specific data rather than column testing to demonstrate that no ISR contaminants will cause a violation of MCLs or otherwise adversely affect human health outside of the exempted aquifer.	

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~into solution by the up-gradient groundwater leachate. The up-gradient groundwater samples shall be analyzed for constituents in Table 8 before and after recovery from the column test to determine if there is a statistically significant increase in analyzed constituent concentrations after leaching through the column.~~ a. Geochemical modeling shall evaluate the following: i. Demonstration of the restored aquifer's capacity to maintain stability, considering the long-term influence of up-gradient groundwater. ii. Assessment of the natural capacity of the down-gradient portion of the exempted aquifer to attenuate contaminant concentrations. iii. Evaluation of any localized, elevated concentrations above the restoration criteria remaining in the production zone following restoration. ~~b~~e. ~~If the Part IV, Sections D.1.b.i and D.1.b.ii column test leachates show an insufficient decrease in ISR contaminant concentrations after passing through the columns or the up-gradient perimeter monitoring well groundwater tests show an increase in contaminant levels after passing through the columns, then t~~The Permittee shall submit a ~~groundwater treatment~~ Closure ~~p~~Plan to the Director for approval describing the geochemical modeling results ~~measures for preventing ISR contaminants from crossing the down-gradient aquifer exemption boundary~~. The plan shall ~~include geochemical modeling results~~ demonstrate~~ing~~ that no ISR contaminants will cross the down-gradient aquifer exemption boundary and cause a violation of any primary MCLs or otherwise adversely affect the health of persons. The geochemical model shall be calibrated with ~~laboratory and/or field~~ site-specific data.		

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
29	29	**Figure 5. Typical Well Construction Design** WELL SCREEN (IF USED) GRAVEL PACK (IF USED) SAND TRAP (IF USED) CHECK VALVE (IF USED)	Powertech suggests renaming Figure 5 to include "typical" in the title and adding "(if used)" to the well screen, gravel pack, sand trap and check valve labels on the figure for consistency with the Class III permit application.	Powertech is concerned that the well construction standards depicted in Figure 5 may be construed as requiring a well screen and gravel pack for all injection, production, and monitoring wells. This is inconsistent with Section 11.2 of the permit application, which specifies that the well screen assembly and filter sand may or may not be used. It is also inconsistent with Section 7.3 of the Fact Sheet, which indicates that "The use of filter pack is optional." Figure 11.1 of the permit application depicted the "typical" well construction design, whereas Figure 5 in the draft permit is labeled "Well Construction Design." Adding "typical" to the figure title would make it consistent with the title blocks in Figures 6 and 7 in the draft permit.
30	33	**V.E.2. Well Casing Requirements** Injection and production well casing shall: a. Meet or exceed the specifications of ASTM Standard F480 and NSF Standard 14 for thermoplastic pipe, including PVC;	Powertech requests clarification in the draft permit condition that PVC is suitable for use.	Figures 6 and 7 show PVC well casing, but "thermoplastic" is the only description in the permit condition.
31	33	**V.E.3. Injection Piping Requirements** The injection ~~or production~~ pipe shall: a. meet or exceed the specifications of ASTM Standard D~~2239~~ 3350 ~~and NSF Standard 14~~ for polyethylene pipe, b. have no greater than SDR 11, and c. have a pressure rating that exceeds the highest maximum allowable injection pressure for the wellfield. **Table 12. Injection~~/Production~~ Pipe Dimensions for SDR 11** **Proposed Injection~~/Production~~ Pipe Diameter (inches)** / **Minimum Casing Pipe Wall Thickness (inches)** 1.0 / 0.09	Powertech requests removing "production pipe" from regulation under the Class III permit for the reasons provided herein.	It is not appropriate to regulate "production pipe" under the Class III permit for the following reasons: 1. Production pipe is defined on page 82 of the Fact Sheet as the pipe within the well casing. For production wells, this pipe is used to convey lixiviant from the well pump to the surface and is not associated with injection. If a leak were to develop in this pipe, it would be contained within the well casing such that no fluids would escape from the well. 2. Although production wells may be converted to injection wells, conversion

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		1.5 | 0.136		would involve removing the submersible pump and production pipe and installing injection tubing. Therefore, production pipe would never be associated with an injection well. 3. As shown in Figure 7, the downhole production pipe would typically be 2-inch diameter, which is not listed in Table 12. Therefore, Table 12 does not appear to consider the production pipe specified by Powertech (i.e., Figure 7 in the draft permit, which was taken from the permit application, shows 2-inch downhole pipe in production wells).
32	33	See comment #31.	Powertech requests changing the ASTM standard and removing the NSF standard for injection pipe requirements on the basis that the incorrect ASTM standard is cited and NSF 14 is applicable to potable water systems.	The ASTM standard should be modified and the NSF standard removed for the following reasons: 1. ASTM D2239 is for controlled inside diameter (SIDR) pipe, whereas Powertech indicated that SDR pipe would be used (Table 12 also lists "SDR 11" in the title). 2. ASTM D2239 excludes commonly used polyethylene compounds including PE3406 and PE3408. If an ASTM standard must be specified, Powertech suggests using ASTM D3350. 3. NSF 14 includes requirements to protect public health (generally) and potable water systems (specifically). As long as the injection piping meets the dimension and pressure rating requirements listed under Part V, Sections E.3.b and E.3.c, there should not be a requirement to consider the potential human health impacts from the piping material, since there would be no nexus for human consumption.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
				4. The sole purpose of injection tubing in the Class III injection wells is to allow for the introduction of lixiviant and oxygen into the well casing at the deepest location possible below the static level of fluid in the well casing. As oxygen solubility increases with depth in water, this is only to insure maximum dissolution of oxygen. 5. There is little or no pressure differential between the inside and outside of injection tubing, since it merely hangs within the water in the injection well, which either partially or fully fills the well casing with the injected fluid.
33	33	**V.E.4. Well Cementing Requirements** a. The Permittee shall isolate all USDWs by placing cement/bentonite grout between the outermost casing and the well bore from top of well to top of well screen. b. The Permittee shall use cement/bentonite grout: i. Of a quantity and quality to withstand the maximum operating pressure; and ii. Which is resistant to deterioration from formation and injection fluids; and iii. In a quantity no less than 120% of the calculated volume necessary to fill the borehole-casing annulus from the top of the injection interval to the ground surface. c. With the casing in place, a cement/bentonite grout shall be pumped under pressure into the casing allowing the grout to circulate out the bottom of the casing and back up the casing annulus to the ground surface.	Powertech requests changing all instances of "cement" to "cement/bentonite grout" for internal consistency and for consistency with commitments in the permit application.	Part V, Sections E.4.a and E.4.b discuss the use of cement to seal the casing annulus, while Section E.4.c discusses use of cement/bentonite grout. It would be more appropriate to use "cement/bentonite grout" for internal consistency and for consistency with the permit application, which specifies that "Cement grout could contain adequate bentonite to maintain the cement in suspension in accordance with Halliburton cement tables." This change would also be consistent with Section 7.3 of the Fact Sheet, which specifies that "Powertech must install cement/bentonite grout …"
34	34	**V.H. Postponement of Construction** 1. If ~~T~~the Permittee ~~shall~~ does not begin construction of at least one of the proposed wellfields within one year	Recognizing that EPA's primary concern is that additional private drinking water wells	The proposed requirements do not seem to consider that there are a number of permits and regulatory approvals needed prior to

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		of the Effective Date of the Permit, the Permittee shall present an annual Area of Review (AOR) update to EPA until construction commences. The AOR update shall include identifying the location and screened interval of any new domestic wells within 2 kilometers (1.2 miles) of the potential wellfield area, as measured from the perimeter monitoring well ring.	could be constructed in the project vicinity prior to operations, Powertech proposes to replace the requirement to commence construction within a specified timeline with a requirement to present an annual Area of Review (AOR) update to EPA until construction commences.	construction, including State of South Dakota hearings and additional Section 106 NHPA consultation required under the NRC license. Additionally, economic factors outside of Powertech's control may contribute to a delay in the onset of construction.
35	35	**V.I.1. Demonstration that Manifold Monitoring Is Equivalent to Individual Well Monitoring** a. In order for the Permittee to use manifold monitoring rather than individual well monitoring and use the header house pressure gauge as the point of compliance for monitoring injection pressure, the Permittee shall demonstrate that manifold monitoring is comparable to individual well monitoring. b. The Permittee shall conduct a bounding analysis demonstration for each header house that manifold monitoring is comparable to individual well monitoring using the maximum anticipated carbon dioxide and oxygen injection rates ~~demonstrate that the injection pressure measured at the header house pressure gauge is greater than or equal to the injection pressure measured at the wellhead of each well connected to the header house~~. c. A demonstration is valid as long as adjustments stay within the range of the bounding analysis ~~until adjustments are made to the carbon dioxide and oxygen feed lines at the header house, which are located in-line after the header house pressure gauge~~.	Powertech proposes to conduct a bounding analysis demonstration for each header house that manifold monitoring is comparable to individual well monitoring using the maximum anticipated carbon dioxide and oxygen injection rates. As long as adjustments stay within the range of the bounding analysis, no repeat demonstration would be required. The bounding analysis would be provided to EPA within the next Quarterly Monitoring Report.	Part V, Section I.1 of the Draft Class III Area Permit would require Powertech repeat the demonstration that manifold monitoring is comparable to individual well monitoring after any adjustments to the carbon dioxide or oxygen feed lines at the header house. Since minor adjustments in the gas flow rates may be made routinely, this would require significant time and expense to retest the pressure at each well after minor adjustments. Further, Powertech does not anticipate a significant impact on the injection pressure based on the gaseous flow rates, since the gases would be dissolved in the lixiviant.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		d. ~~If, after the initial demonstration, any adjustments are made to either of these feed lines, another demonstration shall be performed.~~ ~~e.~~ The bounding analysis shall be provided to EPA within the next ~~A record of injection pressures measured at the header houses and at the wellheads shall be provided with the~~ Quarterly Monitoring Report as required under Part IX, Section F.8.		
36	35	**V.I.2. The installation of following additional equipment is required for manifold monitoring:** e. injection manifolds (as shown in Figures 8 and 9) equipped with: iv. In the Burdock Central Processing Plant, ~~and~~ the Dewey Satellite Facility or another representative sampling or measurement location: A) a sampling port in the injectate trunkline to collect representative samples of the injectate for each wellfield; B) instrumentation to continuously monitor and measure injectate and production flow rate for the daily recording of the injection and production flow rates for each wellfield; and C) instrumentation to continuously monitor and measure injectate and production volumes for the monthly recording of the injection and production volumes for each wellfield.	The change is requested in order to provide flexibility concerning the measurement and monitoring locations for individual wellfields and for consistency with the NRC license and standard ISR industry practice.	The draft permit condition would require "a sampling port in the injectate trunkline to collect representative samples of the injectate for <u>each wellfield</u>" within the Burdock Central Processing Plant and the Dewey Satellite Facility. Similarly, it could be construed to require the ability to measure the injectate and production flow rate "for each wellfield" within the processing facilities. This is inconsistent with the approved NRC license application, which indicates that "main trunklines" will connect the CPP and Satellite Facility to the wellfields (generally to groups of wellfields within the Dewey or Burdock area). Part V, Section J.2.a similarly describes "main trunk lines connecting the [processing facilities] to the wellfields."
37	37	~~**V.I.3. Wellhead and Surface Equipment**~~	Powertech requests removing Part V, Section I.3 or providing an explanation as to how the two groups of requirements differ.	Part V, Section I.3 appears to contain redundant requirements pertaining to equipment required for monitoring within each header house and processing facility with those in Part V, Section I.2.
38	40	**VII.B. Requirement to Demonstrate and Maintain Mechanical Integrity** 1. The Permittee is required to ensure each injection well and production well maintains mechanical integrity	Powertech requests modifying the permit condition to recognize that Authorization to Commence Injection would be	See also comment #8. The statement is made that the Authorization to Commence Injection "is issued by the Director for each well." This appears to be inconsistent with Part VIII, Section

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		at all times. Injection into a well that lack mechanical integrity is prohibited. 2. Before the Authorization to Commence Injection is issued by the Director for each wellfield, the Permittee shall demonstrate that each wellfield injection and production well installed during development of the Injection Authorization Data Package Report has mechanical integrity according to 40 CFR § 146.8. Prior to commencing operation of each injection and production well, the Permittee shall document that the well has mechanical integrity.	issued on a wellfield basis and not all injection and production wells would be installed prior to requesting Authorization to Commence Injection. See also comment #8.	C, which indicates that Authorization to Commence Injection will be issued on a wellfield basis rather than an individual well basis. Similarly, Part IX, Section F.3 describes how written Authorization to Commence Injection will be issued on a wellfield basis. As described in comment #8, not every injection and production well would be installed during initial wellfield development.
39	41	**VII.G. Ongoing Demonstration of Mechanical Integrity** 1. After initial demonstration of mechanical integrity required in Part VII, Section B.2, the Permittee shall demonstrate internal mechanical integrity of each injection well within five (5) years of the last successful mechanical integrity test even if the well is not active. The procedure and criteria for demonstrating internal mechanical integrity are found in Part VII, Section C.4. 2. Results of mechanical integrity tests shall be submitted to the Director with the next scheduled Quarterly Monitoring Report, unless the mechanical integrity test occurred within 45 days before the due date of the Quarterly Monitoring Report. In that case, the mechanical integrity test results shall be submitted with the following Quarterly Monitoring Report. 3. Failing to provide the EPA with a successful demonstration of mechanical integrity in a timely manner will be a violation of this permit. ~~4. Ongoing Demonstration of Internal Mechanical Integrity~~ ~~a. After the initial demonstration of internal mechanical integrity, all injection and production wells shall be field tested to demonstrate ongoing mechanical integrity of the well casing.~~	Powertech requests combining the two sections as shown.	Part VII, Sections G.1 and G.4 appear to contain redundant requirements for ongoing demonstration of internal mechanical integrity.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~b. The procedure and criteria for demonstrating internal mechanical integrity are found in Part VII, Section C.4.~~		
40	43	**VIII.C. Requirements Prior to Commencing Injection in a Wellfield** **1. General Requirements** The Permittee shall not commence injection until: d. Initial demonstration of mechanical integrity pursuant to 40 CFR §1-46.8 and Part VII, Section B.2 has been successful and documented; and	Typographical correction.	Powertech requests removing the space in "40 CFR §1 46.8."
41	43	**VIII.C.2. Confirmation of Aquifer Baseline Potentiometric Surface** a. After the construction of all wellfield perimeter and non-injection interval monitoring wells and a representative number of injection or production ~~injection, production and monitoring~~ wells is completed and the static potentiometric surface for each aquifer has stabilized from well development activities and the wellfield pump tests, the static potentiometric water levels shall be measured in every well in the monitoring system prior to the initiation of injection into the wellfield to determine the degree to which the injection interval potentiometric surface recovered after the wellfield pump tests.	Powertech requests modifying the permit condition to recognize that not all injection and production wells would be installed during initial wellfield development. See also comment #8.	This condition appears to require construction of "all" injection and production wells within a wellfield prior to commencing injection in the wellfield. As described in comment #8, not every injection and production well would be installed during initial wellfield development.
42	44	**VIII.E.5. MAIP Compliance Point** a. The Permittee shall use a pressure gauge located either at each wellhead or at the injection manifold at each header house as the compliance point at which the MAIP is demonstrated not to exceed the permit limit set according to Section E.3 of this Part. b. The Permittee may use pressure gauges at the injection manifold only after verification that the header house pressure gauge is greater than or equal to the injection pressure measured at the wellhead of each injection well connected to the header house as	Powertech requests removing the redundant monitoring requirements.	Part VIII, Sec. E.5.c appears to contain redundant requirements for demonstrating that manifold monitoring is comparable to individual wellhead monitoring with those in Part V, Section I.1.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		described under Part V, Section I.1 ~~the following section~~. ~~c. The Permittee shall conduct an initial injection pressure calibration check to be performed as each header house is brought online. The initial injection pressure calibration check shall involve measuring the injection pressure at each wellhead to verify that it is not greater than the injection pressure measured at the pressure gauge on the header house injection line. If the injection pressure at any injection wellhead is greater than the pressure measured at the header house injection line pressure gauge, the pressure to the individual injection well shall be adjusted so that the injection pressure at the injection wellhead is equal to or less than the injection pressure measured at the header house injection trunkline pressure gauge.~~		
43	44	**V.F.5. Hydraulic Control of Wellfield during Groundwater Restoration** c. The Permittee shall monitor the water levels in the wellfield perimeter monitoring well ring in accordance with the requirements in Part IX, Section B.1.e, Table 14.~~FD~~ and Part IX, Section C.	Powertech requests correcting the reference from Table 14D to Table 14F, which contains the monitoring requirements during groundwater restoration.	Reference is made to Table 14D, but that contains monitoring requirements during ISR operations rather than groundwater restoration.
44	45	**VIII.H. Injection Fluid Limitation** 2. During the groundwater restoration phase, the injectate will be limited to permeate from reverse osmosis (RO) treatment of groundwater extracted from the post-ISR wellfields, ~~or~~ clean makeup water from the Madison Limestone, or groundwater recirculated within the wellfield. Chemical reductant may be injected only after prior written authorization from the Director.	Powertech requests the flexibility to recirculate groundwater during groundwater restoration. Powertech also requests the flexibility to inject a chemical reductant after prior authorization from EPA.	Recirculation is commonly used during groundwater restoration to homogenize the groundwater within the restored aquifer. As described in NUREG-1569 (Exhibit 012), "Ground-water recirculation is used to evenly distribute water throughout the restored well field, to dilute any pockets of remaining contamination." It does not appear that the draft permit conditions would authorize injection of recirculation water during groundwater restoration. In addition, chemical reductants such as hydrogen sulfide, sodium sulfide or sodium bisulfide are commonly used to restore

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
				reducing conditions and immobilize metals (Exhibit 012).
45	45	**VIII.H. Injection Fluid Limitation** 4. If the Permittee elects to pump groundwater from the down-gradient compliance boundary wells and decides to reinject~~ion~~ the pumped groundwater into another location within the exempted portion of the Inyan Kara aquifers, the Permittee shall submit an authorization by rule proposal to the Director.	Powertech requests removing this condition based on the justification provided in Attachment A-3. If post-restoration groundwater monitoring is required, Powertech requests the topographical error.	Powertech requests changing "decides to reinjection" to "decides to reinject."
46	46	**IX.B. Monitoring Parameters, Frequency, Records and Reports** Monitoring parameters and frequency are specified in Section 1 below. **1. Monitoring Parameters and Frequency** c. The injection and production flow rates shall be continuously monitored for each wellfield and shall be recorded daily from monitoring devices at the Burdock Central Processing Plant, ~~and~~ the Dewey Satellite Facility or another representative location. d. Monthly injection and production volumes shall be continuously monitored and recorded for each wellfield from monitoring performed at the Burdock Central Processing Plant, ~~and~~ the Dewey Satellite Facility or another representative location.	The changes are requested in order to provide flexibility concerning the measurement and monitoring locations for individual wellfields and for consistency with the NRC license and standard ISR industry practice. See also comment #36.	Powertech is concerned that these provisions may be construed as requiring measurement of injection and production flow rates and monthly flow volumes within the CPP and Satellite Facility for each wellfield.
47	46	**IX.B.2. Determining Baseline Water Quality for Non-injection Interval Monitoring Wells** The Permittee shall determine baseline water quality ~~permit limits~~ for non-injection interval monitoring wells according to the requirements under Section 11.3 Establishment of Commission-Approved Background Water Quality in the NRC Source Material License.	As described in comment #16, Powertech requests modifying Table 8 for consistency with Table 6.1-1 of the approved NRC license application. Further, in accordance with Attachment A-6, Powertech asserts that the excursion corrective actions reviewed and approved by NRC are	License Condition 11.3 of SUA-1600 requires analyzing baseline samples for the parameters listed in Table 6.1-1 of the approved NRC license application. This appears to create an inconsistency, where baseline would be established for non-injection interval monitoring wells according to one set of parameters, but sampling for the parameters listed in Table 8 of the draft permit would be required to demonstrate remediation of a monitoring well

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
			adequately protective of the non-injection interval monitoring wells without establishing baseline permit limits for these wells.	impacted by an excursion (Part IX, Section C.3.f). It would also create an inconsistency within the draft permit, since Part II, Section E.2.b.iii would require analyzing baseline samples from non-injection interval monitoring wells for Table 8 parameters. With regard to establishing baseline "permit limits" for non-injection interval monitoring wells, please refer to Attachment A-6. Other than alluvial monitoring wells, all non-injection interval monitoring wells would be completed within the exempted aquifer (i.e., within sub-units of the Fall River or Chilson aquifer). Requiring restoration to baseline within the exempted aquifer is inconsistent with what is required for the production zone and is not necessary to prevent contamination outside of the exempted aquifer, since Powertech would be required to cease injection or post additional financial assurance for remediation of the excursion in the event that an excursion is not corrected within 60 days.
48	46	**IX.B.3. Down-gradient Compliance Boundary Baseline Monitoring** Baseline groundwater characterization sampling shall be performed ~~quarterly~~ on Down-gradient Compliance Boundary wells as designated in the approved wellfield Post-Restoration Monitoring Plan beginning after well development through the end of wellfield restoration. At least four pre-operational baseline samples shall be collected at least 14 days apart prior to operation of the wellfield. Samples shall be collected annually from the onset of operations through regulatory approval of groundwater restoration. Groundwater samples shall	As described in Attachment A-3, Powertech has proposed an alternate solution to post-restoration groundwater monitoring. In the event that that approach is not approved, the proposed revisions are requested as explained in Attachment A-4.	Attachment A-4 includes comments regarding establishing initial baseline values and updating baseline values for post-restoration monitoring wells.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		be collected according to the procedures in Part II, Section E.2.b. The samples shall be analyzed for the baseline water quality parameters listed in Table 8 using the analytical methods shown. Equivalent analytical methods may be used after prior approval by the Director.		
49	47- 49 51- 57 66	Remove Table 14C. Remove Table 14D. Remove Table 14F. Remove the following from Table 14H: - Samples from operational monitoring stock wells within permit area for chloride, total alkalinity, and specific conductance - Samples from the operational monitoring wells listed in Table 16 for baseline parameters (Table 8) Remove Table 14J. Remove Table 16. Remove Figures 10-14. **IX.F. Reporting Requirements** **10. Submittal of NRC Reports and Documents** a. The Permittee shall submit, for informational purposes only and at the same time as provided to NRC, the following information: i. All groundwater sampling data. ii. The semi-annual report required by NRC under License Condition 11.1B, which discusses the status of wellfields in operation. The report includes the progress of wellfields in restoration and restoration progress, status of any long-term excursions, and a summary of MITs conducted during the reporting period. iii. The groundwater quality data required by NRC under License Condition 11.3. This data includes the background water quality for the ore zone, overlying	Understanding that EPA's primary concern is to be provided with the results of the monitoring performed under NRC license requirements, Powertech requests that EPA remove duplicative monitoring requirements for monitoring required by the NRC license. This includes excursion monitoring (Tables 14C, 14D and 14F), stock and domestic well monitoring (Table 14H) and sampling operational monitoring wells (Table 14H, Table 16 and Figures 10-14). The reporting requirements under Table 14H would require Powertech to provide monitoring results to EPA in the quarterly reports, without the need to specify monitoring locations, frequencies, or parameters in the Class III permit. See also Attachment A-7 for additional justification for the removal of Table 14C.	The draft permit contains many duplicative monitoring requirements with those required by NRC. This includes excursion monitoring (Tables 14C, 14D and 14F), stock and domestic well monitoring (Table 14H) and sampling operational monitoring wells (Table 14H, Table 16 and Figures 10-14). Explicitly calling out each monitoring well, sampling frequency, etc. in the Class III permit would require modifying the permit in the event that a monitoring location is changed or added. This would be unduly burdensome for monitoring performed under NRC's jurisdiction. Powertech would be willing to submit to EPA any groundwater monitoring results and applicable changes in the NRC license monitoring requirements. Powertech requests adding a new Section 10 under the Part IX, Section F reporting requirements as shown.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		aquifers, underlying aquifers alluvial aquifer, and perimeter monitoring areas. iv. Water quality data from the annual samples required by NRC under License Condition 12.10 for each domestic well within 2 km (1.25 miles) of the boundary of each wellfield as measured from the perimeter monitoring well rings. v. Water quality data from the quarterly samples required by NRC under License Condition 12.10 for each stock well within the permit area. vi. Water quality data from the quarterly samples required by Section 5.7.8.2 of the approved NRC license application for each operational monitoring well. vii. Any reports submitted to NRC regarding excursions, including initial reports, follow-up reports, progress reports and quarterly reports required under License Condition 11.1 that include excursion parameter concentrations, wells placed on or removed from excursion status, corrective actions taken, and the results for all wells that were on excursion status during the quarter.		
50	47	**Table 14. Monitoring Parameters and Frequency** **A. CONTINUOUSLY** MONITOR: Injection Pressure (psig) at each header house Injection Rate (gpm) for each wellfield at injection trunkline at the Burdock Central Processing , ~~and~~ the Dewey Satellite Facility or another representative location Production rate (gpm) for each wellfield at production trunkline at the Burdock Central Processing Plant, ~~and~~ the Dewey	The changes are requested in order to provide flexibility concerning the measurement and monitoring locations for individual wellfields and for consistency with the NRC license and standard ISR industry practice. See also comment #36. Alternately, the location where monitoring would occur could be removed for consistency with Table 14E.	Powertech is concerned that these provisions may be construed as requiring measurement of injection and production flow rates and monthly flow volumes within the CPP and Satellite Facility for each wellfield.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		Satellite Facility or another representative location Injection volume (gallons) for each wellfield at injection trunkline at the Burdock Central Processing Plant, ~~and~~ the Dewey Satellite Facility or another representative location Production volume (gallons) for each wellfield at production trunkline at the Burdock Central Processing Plant, ~~and~~ the Dewey Satellite Facility or another representative location		
51	48	**Table 14. Monitoring Parameters and Frequency** **F. 60 DAY INTERVAL EXCURSION MONITORING DURING GROUNDWATER RESTORATION ~~AND STABILITY MONITORING~~**	As described in comment #49, Powertech requests removal of Table 14F, since it contains monitoring requirements under NRC regulatory jurisdiction. In the event that the table is not removed, Powertech requests modification of the table title for consistency with NRC license requirements.	The proposed requirement to conduct excursion monitoring during the stability monitoring period is inconsistent with NRC license requirements. Section 6.1.8.1 of the approved NRC license application indicates that excursion monitoring will occur during active restoration, which does not include the stability monitoring period. Since the groundwater would have been restored and no injection would occur into the wellfield during stability monitoring, there is no nexus for an excursion to occur. The current language is also inconsistent with Section 9.2 (page 93) of the Fact Sheet, which indicates that "Groundwater level measurements must be recorded … every 60 days during groundwater restoration" (with no mention of stability monitoring).
52	48	**Table 14. Monitoring Parameters and Frequency** **G. 60 DAY INTERVAL POST-RESTORATION GROUNDWATER MONITORING**	Powertech requests removal of Table 14G on the basis of the proposed alternate solution to post-restoration monitoring in Attachment A-3. In the event that post-restoration	The table indicates that water levels should be measured in non-injection interval monitoring wells every 60 days during post-restoration monitoring. This is inconsistent with Part IX, Section E.3, which indicates that this monitoring can end when it is demonstrated that the down-

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		OBSERVE AND RECORD: Wellfield perimeter monitoring well water levels (until a down-gradient flow pattern has been reestablished) Wellfield non-injection interval monitoring well water levels (until a down-gradient flow pattern has been reestablished) ~~ANALYZE~~: ~~Water samples from each wellfield non-injection interval monitoring well for baseline water quality parameters listed in Table 8.~~ REPORT: Next scheduled Quarterly Report	monitoring is required, Powertech requests modification of the non-injection interval monitoring well water level monitoring requirement to every 6 months for internal consistency within the document. Please see comment #54. Powertech also requests modification of the water level monitoring requirements for internal consistency with the draft permit. Please refer to Attachment A-9 for a proposed alternate solution to monitoring non-injection interval monitoring wells during post-restoration groundwater monitoring.	gradient flow pattern has been reestablished. Similarly, Part IX, Section E.2 implies that perimeter monitoring well water level measurement can be stopped when the down-gradient flow pattern is reestablished. The table also indicates that during post-restoration monitoring, water samples should be collected from each non-injection interval monitoring well every 60 days. This does not appear to be consistent with Part IX, Section E.4, which specifies a 6-month sampling frequency for non-injection interval monitoring wells during post-restoration monitoring. No mention could be found in the Fact Sheet for an explanation of either the 60-day or 6-month sampling interval for non-injection interval monitoring wells.
53	48	**Table 14. Monitoring Parameters and Frequency** **H. QUARTERLY** ANALYZE: Samples from operational monitoring stock wells within permit area for chloride, total alkalinity, and specific conductance Samples from the operational monitoring wells listed in Table 16 for ~~baseline~~ parameters as specified in the NRC license ~~(Table 8)~~ ~~Samples from down-gradient wellfield perimeter monitoring well ring wells, Non-injection Interval Monitoring wells and Down-gradient Compliance Boundary Determination Wells from well~~	As described in comment #49, Powertech requests removal of monitoring requirements in Table 14H that are duplicative of NRC monitoring requirements, including those for stock wells and operational monitoring wells. In the event that those modifications are not made, Powertech requests modification of the parameter list for operational monitoring wells for consistency with NRC license requirements.	The table specifies that samples from operational monitoring wells (i.e., permit-area wide monitoring wells not specific to an ISR wellfield) must be analyzed for the Table 8 list of baseline parameters. As described in comment #16, the Table 8 list of parameters is inconsistent with NRC license requirements, specifically with Table 6.1-1 of the approved NRC license application. The operational monitoring well locations and parameters were approved by NRC and determined to be in conformance with NRC guidance, including NUREG-1569 (Exhibit 012) and NRC Regulatory Guide 4.14 (Exhibit 015). EPA has not stated any justification for adding

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~installation through wellfield restoration for baseline water quality parameters (Table 8)~~	Powertech also requests removal of the proposed quarterly monitoring requirements for down-gradient perimeter monitoring wells and non-injection interval monitoring wells, since no justification is provided in the draft permit for this monitoring. Powertech also requests removal of the quarterly monitoring requirements for Down-gradient Compliance Boundary Monitoring Wells, as described in Attachment A-4.	significantly to the parameter list and cost of analysis for these operational monitoring wells. No mention could be found in Part IX, Section C for the proposed requirement to sample down-gradient wellfield perimeter monitoring well ring wells and non-injection interval monitoring wells quarterly for the full suite of Table 8 parameters.
54	49	**Table 14. Monitoring Parameters and Frequency** **I. SIX MONTH INTERVAL POST-RESTORATION GROUNDWATER MONITORING** ANALYZE: Groundwater samples from the Down-gradient Compliance Boundary wells for baseline water quality parameters (Table 8) Water samples from each wellfield non-injection interval monitoring well for chloride, total alkalinity, and specific conductance REPORT: Include analytical results in next scheduled Quarterly Report after analytical results are received from laboratory.	As described in Attachment A-3, Powertech requests removal of the post-restoration monitoring requirements in lieu of geochemical modeling using site-specific data. In the event that that request is not approved, Powertech suggests adding the 6-month excursion monitoring in non-injection interval monitoring wells for consistency with Part IX, Section E.4 and for the excursion monitoring parameters, as described in Attachment A-9.	Part IX, Section E.4 specifies a 6-month sampling frequency for non-injection interval monitoring wells during post-restoration monitoring, but this provision was not included in Table 14I. See also Attachment A-9 for comments regarding excursion monitoring in non-injection interval monitoring wells during post-restoration monitoring.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

<table>
<tr>
<td>55</td>
<td>49</td>
<td>
Table 14. Monitoring Parameters and Frequency
<table>
<tr><th colspan="2">J. ANNUALLY</th></tr>
<tr><td>ANALYZE</td><td>Groundwater samples from the domestic wells within 1.2 miles of the boundary of each wellfield (as measured from the perimeter monitoring well ring) ~~project boundary~~ for ~~baseline~~ water quality parameters as specified in the NRC license ~~(Table 8)~~</td></tr>
<tr><td>REPORT</td><td>Include analytical results in next scheduled Quarterly Report after analytical results are received from laboratory.</td></tr>
</table>
</td>
<td>As described in comment #49, Powertech requests removal of Table 14J, since it contains monitoring requirements under NRC regulatory jurisdiction. In the event that those modifications are not made, Powertech requests modification of the parameter list for domestic wells for consistency with NRC license requirements.

Powertech also requests modifying the location of the domestic wells included in the operational monitoring program for consistency with NRC license requirements.</td>
<td>The location of domestic wells included in the operational monitoring program is inconsistent within the draft permit and between the draft permit and NRC license. Part IX, Section B.4.a.i specifies that “down-gradient domestic wells within the Area of Review” should be sampled, while Table 14J specifies that “domestic wells within 1.2 miles of the project boundary” should be sampled. These internally inconsistent requirements also do not match Section 5.7.8.2 of the approved NRC license application, which indicates that all domestic wells “within 2 km of the boundary of each well field (as measured from the perimeter monitoring well ring)” should be sampled (Exhibit 010). The same language is included in SUA-1600 License Condition 12.10 (Exhibit 016). NRC’s explanation for the 2-km sampling requirement is provided in the Dewey-Burdock Project SER (Exhibit 014 at pp. 61-62):

<blockquote>The radius of 2 km (1.2 miles) from each proposed ISR wellfield has been shown to be sufficient based on historical and current monitoring data from NRC licensed sites. There are no reported instances of contamination of any monitored private wells within or beyond 2 km of an ISR wellfield at any sites historically or currently licensed by the NRC …</blockquote>
Also, the domestic well operational monitoring requirements indicate that samples from domestic wells must be analyzed for the Table 8 list of baseline parameters. As described in comment #16, the Table 8 list of parameters is inconsistent with NRC license requirements, specifically with Table 6.1-1 of the approved NRC license application. EPA has not stated any</td>
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Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
				justification for adding significantly to the parameter list and cost of analysis for these domestic wells.
56	49	**Table 14. Monitoring Parameters and Frequency** **K. 24-HOUR REPORTING** REPORT: If any ISR contaminant crosses the aquifer exemption boundary in a concentration above the baseline permit limits as described in Part IX, Section E.14. ~~System failures.~~ System failures. Upon discovery of any ~~other~~ noncompliance requiring 24-hour reporting as described in Part XII, Section D.11.~~j~~.	Powertech requests clarification in the draft permit on the definition of system failures and verification that alarms or shutdowns not resulting in any violations of permit conditions would not require 24-hour reporting. Powertech also request EPA review of the apparent discrepancy between the reporting requirements for "any other noncompliance."	System failures should not be included within the same category as an ISR contaminant crossing the aquifer exemption boundary. Moreover, "system failures" are not defined in the draft Class III permit. Powertech requests clarification of which "system failures" would require 24-hour reporting. Regarding the automated control and data recording systems described in Section 13 of the Class III permit application, the automatic controls are designed to provide alarms and, in some cases, automatic shutdown controls in the event that pressures or flows fluctuate outside of normal operating ranges. Such shutdowns are initiated to avoid exceeding any permit conditions. An alarm or shutdown in itself does not indicate a system failure or exceedance of a permit condition, since it would be based on set points below the permit thresholds. As such, Powertech requests that alarms or automatic shutdowns not resulting in any violations of permit conditions not require 24-hour reporting. Also, the table indicates that 24-hour reporting is required "Upon discovery of any other noncompliance as described in Part XII, Section D.11.j." However, that section indicates other noncompliance instances are to be reported at the time that monitoring reports are submitted.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
57	50	**IX.B.4. Operational Groundwater Monitoring** **a. Domestic Wells** i. During operations, the Permittee shall monitor all down-gradient domestic wells within 1.2 miles of the boundary of each wellfield (as measured from the perimeter monitoring well ring) ~~the Area of Review~~, unless the well owners do not consent to sampling or the condition of the wells renders a well unsuitable for sampling. ii. Wells to be monitored under this requirement are shown in Figure 10. iii. Samples shall be collected annually ~~quarterly~~ and analyzed for the ~~baseline~~ water quality parameters as specified in the NRC license ~~listed in Table 8~~.	See also comment #49, which requests removal of additional monitoring requirements that are duplicative of NRC monitoring requirements, including those for domestic wells. In the event that those modifications are not made, Powertech requests modification of the parameter list and location for domestic wells for consistency with NRC license requirements. See also comment #55.	See comment #55, which describes how the locations and parameters for operational domestic well monitoring are inconsistent with NRC license requirements. In addition, quarterly sampling is inconsistent with the NRC license and with other draft permit conditions. Section 5.7.8.2 of the approved NRC license application includes Powertech's commitment to sample nearby domestic wells annually. Annual domestic well sampling is also consistent with Table 14J.
58	50	**IX.B.4. Operational Groundwater Monitoring** **c. Monitoring Wells** The Permittee shall monitor wells located hydrologically up-gradient and down-gradient of ISR operations as part of the operational groundwater monitoring program. Monitoring wells included in the operational monitoring program shall include wells completed in the alluvium, Fall River, Chilson, and Unkpapa aquifers. The proposed wells indicated in Table 16 (Well ID is TBD) and in Figures 12 and 13 shall be installed before the first wellfield pump test is conducted in the Burdock Area. The monitoring wells shall be monitored quarterly and analyzed for the ~~baseline~~ water quality parameters as specified in the NRC license ~~listed in Table 8~~.	See also comment #49, which requests removal of additional monitoring requirements that are duplicative of NRC monitoring requirements, including those for operational groundwater monitoring wells. In the event that those modifications are not made, Powertech requests modification of the parameter list for operational groundwater monitoring wells for consistency with NRC license requirements. See also comment #53.	See comment #53, which describes how the parameters for operational groundwater monitoring wells are inconsistent with NRC license requirements.
59	51	**Table 16. Monitoring Wells Included in Operational Monitoring Program** Well ID | Qrt- Qrt **Alluvium**	As described in comment #49, Powertech requests removal of Table 14F, since it contains monitoring requirements under NRC regulatory	DC-2 is listed twice in Table 16, and DC-4 is missing from the table.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		DC -1 NWSW DC-2 SESW DC-3 NWSE DC-4~~2~~ NWNW	jurisdiction. In the event that the table is not removed, Powertech requests modification of the table as shown.	
60	54	**Figure 11. Operational Monitoring Wells - Stock Wells**	Powertech requests correcting the internal inconsistency regarding whether Well 41 is a stock or domestic well. Figure 3 in the Aquifer Exemption ROD should be corrected to depict Well 41 as a stock well.	The figure depicts Well 41 as a stock well, but Figure 3 in the draft Aquifer Exemption ROD depicts it as a domestic well. Section 4.2.1 of the Fact Sheet (page 30) describes how this is now a stock watering well located at an uninhabitable residence. This residence has not been inhabited since before Powertech has worked on the property and is believed to have been uninhabited for at least 30 years or more. It is currently in a state of disrepair which would not allow use of the residence.
61	58	**IX.C. Excursion Monitoring** **2. During Groundwater Restoration** ~~**and Stability Monitoring**~~	Powertech requests removing "and Stability Monitoring" for consistency with NRC license requirements. See also comment #51.	See comment #51, which describes how the approved NRC license application requires excursion monitoring during active restoration but not stability monitoring.
62	58	**IX.C. Excursion Monitoring** **3. During a Confirmed Excursion Event** ~~**c. Monitoring Nearest Unimpacted Wellfield Perimeter Monitoring Wells:** For injection zone excursions impacting wellfield perimeter monitoring wells, the nearest injection interval wellfield perimeter monitoring wells on each side of the impacted well(s) that have not been impacted by the excursion shall also be monitored weekly according to a and b above to verify that the excursion plume is not expanding.~~	Powertech requests removing additional monitoring requirements for a potential expanding excursion plume based on the justification provided in Attachment A-7.	Refer to Attachment A-7, which includes comments related to the proposed monitoring requirements and corrective actions for an "expanding excursion plume." Specifically, comment A-7-10 describes how standard excursion monitoring procedures include sampling all perimeter monitoring wells every 2 weeks, which will allow Powertech to make a timely determination whether an expanding excursion plume exists.
63	58	**IX.C. Excursion Monitoring** **3. During a Confirmed Excursion Event**	Powertech requests removing additional monitoring requirements for a potential	Refer to Attachment A-7, which includes comments related to the proposed monitoring requirements and corrective actions for an

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~**d. Criteria for Expanding Excursion Plume:** If groundwater samples from any of the nearest unimpacted wellfield perimeter monitoring wells begin to show concentrations of any two excursion indicator parameters exceed their respective Upper Control Limit (UCL), as established under the NRC License, or any one excursion indicator parameter exceeds its UCL by 20 percent, the excursion criterion is exceeded.~~ ~~**e. Verification Actions for Expanding Excursion Plume:**~~ ~~i. A verification sample shall be taken from the newly impacted well(s) within 48 hours after results of the first analyses are received.~~ ~~ii. If the verification sample confirms that the excursion criterion is exceeded, the well shall be placed on excursion status and the excursion is considered to be an expanding plume. The Permittee shall begin additional monitoring of an expanding excursion plume as required under Section 4 below.~~ ~~iii. If the verification sample does not confirm that the excursion criterion is exceeded, a third sample shall be taken within 48 hours after the results of the verification sample are received. If the third sample shows that the excursion criterion is exceeded, the well shall be placed on excursion status and the excursion is considered to be an expanding plume.~~ ~~iv. If the third sample does not show that the excursion criterion is exceeded, the first sample shall be considered an error. Routine weekly excursion monitoring shall continue but the well is not placed on excursion status and the excursion is not considered to be an expanding excursion plume.~~	expanding excursion plume based on the justification provided in Attachment A-7.	"expanding excursion plume." The excursion monitoring and corrective action program reviewed and approved by NRC is a proven method of detecting excursions and will provide timely detection and correction of a potential expanding excursion plume, without the need for additional monitoring requirements or corrective actions.
64	59	**IX.C. Excursion Monitoring** **3. During a Confirmed Excursion Event**	Powertech requests modifying the additional monitoring and corrective action requirements for an excursion in a non-	Refer to Attachment A-6, which includes comments related to the proposed monitoring requirements and corrective actions for an excursion in a non-injection interval monitoring

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		f. For Excursions Detected in Non-Injection Interval Monitoring Wells that Are Not Corrected within 60 Days: i. ~~Once~~ If an excursion in a non-injection interval monitoring well has not been corrected within 60 days ~~been verified to be on excursion~~, in addition to the monitoring required under 3a and 3b above, the Permittee shall collect a groundwater sample~~s every seven (7) days~~ from the impacted well(s) and analyze the sample~~s~~ for the baseline parameters in Table 8. A second sample shall be collected after the excursion is corrected and analyzed for the baseline parameters in Table 8. ii. If the excursion is detected outside of the exempted aquifer and is not corrected within 60 days, ~~T~~the Permittee shall restore ~~a~~the non-injection zone aquifer impacted by an excursion of injection zone fluids back to baseline concentrations determined under Part IX, Section B.2. This shall be determined by ~~iii. Monitoring of baseline constituents shall continue until~~ three (3) consecutive samples ~~show~~ with concentrations of excursion indicators and any elevated baseline constituents ~~are below~~ that do not demonstrate a statistically significant increase above baseline ~~standards~~ concentrations. iii. If the excursion occurs within the exempted aquifer and is not corrected within 60 days, the Permittee shall conduct an analysis of the potential to impact groundwater quality outside of the exempted aquifer considering site-specific conditions, corrective actions and monitoring results. ~~If the analytical results from four (4) consecutive weekly samples show increasing concentrations of any excursion parameter or baseline constituent, the Permittee shall begin sampling the nearest unimpacted non-injection interval monitoring~~	injection interval monitoring well as described in Attachment A-6.	well. The excursion monitoring and corrective action program reviewed and approved by NRC is a proven method of detecting and correcting excursions and will provide timely correction of an excursion in a non-injection interval monitoring well.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~wells in the impacted aquifer every seven (7) days and analyze the samples for the baseline constituents in Table 8, or~~ ~~iv. If the excursion has not been remediated in 60 days, the Permittee shall begin sampling the nearest unimpacted non-injection interval monitoring wells in the impacted aquifer every seven (7) days and analyze the samples for the baseline constituents in Table 8.~~ ~~v. If sampling of the nearest unimpacted wells is required under iii or iv and there are no non-injection interval monitoring wells located down-gradient from the impacted well(s), then the Permittee shall install additional monitoring wells down-gradient from the impacted well according to the requirements in Section 4 below.~~ ~~vi. If the Permittee decides to pump the affected well for purposes of groundwater remediation, pumping shall occur only at a very low pumping rate to be low enough to result in less than one (1) foot of drawdown in the aquifer potentiometric surface at the well being pumped.~~ ~~vii. If upon pumping the impacted non-injection zone well, the contaminant concentrations begin to increase, the Permittee shall cease pumping immediately. All the wells near the impacted monitoring well, including the impacted monitoring well, shall be tested for mechanical integrity.~~ ~~viii. Groundwater pumped from the Inyan Kara aquifers may be disposed of in the deep injection wells after treatment to remove radioactive constituents to below radioactive waste permit limits.~~		
65	59-60	**IX.C. Excursion Monitoring** ~~**4. Additional Monitoring of an Expanding Excursion Plume**~~	Powertech requests removing additional monitoring requirements for a potential expanding excursion plume	Refer to Attachment A-7, which includes comments related to the proposed monitoring requirements and corrective actions for an "expanding excursion plume." The excursion

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
			based on the justification provided in Attachment A-7.	monitoring and corrective action program reviewed and approved by NRC is a proven method of detecting excursions and will provide timely detection and correction of a potential expanding excursion plume, without the need for additional monitoring requirements or corrective actions.
66	60	**IX.C. Excursion Monitoring** ~~4. Additional Monitoring of an Expanding Excursion Plume~~ ~~ii. New Down-gradient Excursion Monitoring Well Monitoring Requirements~~ ~~E) After remediation of the excursion plume, additional down-gradient monitoring wells shall be monitored according to the frequencies in C.1 and C.2 above for specific conductance measured in the field until post-restoration monitoring has been completed.~~ ~~F) If specific conductance increases by 20% from the measurements initially measured in the well(s) after excursion remediation, then the Permittee shall collect verification groundwater samples from the impacted well and analyze them for excursion parameters according to procedures under 3e above to determine if a remnant excursion plume has impacted the well(s).~~ ~~G) If a remnant excursion plume has impacted the well(s), the Permittee shall immediately begin pumping the impacted well(s) to recover the remnant excursion and notify the Director within 24 hours according to Part XII, Section D.11.e. Although a remnant excursion plume is not a violation of this Area Permit unless it crosses the aquifer exemption boundary, the Permittee shall follow the requirements for the five (5) day follow up written report.~~ ~~H) If a remnant excursion plume has impacted the well(s), the Permittee shall monitor the well(s)~~	Powertech requests removing additional monitoring requirements for a potential remnant excursion plume based on the justification provided in Attachment A-8.	Refer to Attachment A-8, which includes comments related to the proposed monitoring requirements for a "remnant excursion plume." The excursion monitoring and corrective action program reviewed and approved by NRC is a proven method of detecting excursions and will provide timely detection and correction of a potential remnant excursion plume, without the need for additional monitoring requirements or corrective actions.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		~~impacted by the remnant excursion plume by collecting groundwater samples every seven (7) days and analyzing the samples for the baseline constituents in Table 8.~~ ~~l) Monitoring of baseline constituents shall continue until three (3) consecutive samples show concentrations of excursion indicators and any elevated baseline constituents are below baseline standards.~~		
67	61-63	~~**IX.E. Post-Restoration Groundwater Monitoring Requirements**~~	Powertech requests removing post-restoration monitoring requirements based on the justification provided in Attachment A-3.	Attachment A-3 includes comments regarding the proposed post-restoration monitoring requirements.
68	61	**IX.E. Post-Restoration Groundwater Monitoring Requirements** 2. The Permittee shall ~~continue to~~ measure water levels in the wellfield perimeter monitoring wells every 60 days during post-restoration groundwater monitoring until it can be demonstrated that the down-gradient groundwater flow pattern in the injection interval has been reestablished. ~~as required during groundwater restoration and stability monitoring. Groundwater levels in a representative number of wellfield wells shall also be monitored every 60 days to provide information on the injection interval potentiometric surface within the wellfield. The purpose of this monitoring is to demonstrate the return of the natural groundwater gradient in and around the wellfield area. Pre-operational injection interval potentiometric surface elevations do not have to be achieved for this demonstration, but a down-gradient groundwater flow pattern should be reestablished~~.	Please refer to Attachment A-3 for a proposed alternate solution to post-restoration groundwater monitoring. In the event that post-restoration groundwater monitoring is required, Powertech requests the proposed modifications for consistency with Part IX, Section E.3 requirements.	See comment #51, which describes how the approved NRC license application requires excursion monitoring, including measuring water levels, during active restoration but not stability monitoring. Further, the draft permit does not specify when Powertech would be able to terminate water level measurement in the perimeter monitoring wells.
69	61	**IX.E. Post-Restoration Groundwater Monitoring Requirements**	Please refer to Attachment A-3 for a proposed alternate solution to post-restoration	Since NRC license requirements do not require excursion monitoring during the stability monitoring period, when no injection or

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		3. The Permittee shall also ~~continue to~~ measure the water levels in overlying non-injection interval monitoring wells every 60 days until it can be demonstrated that the down-gradient groundwater flow pattern in the injection interval has been reestablished.	groundwater monitoring. In the event that post-restoration groundwater monitoring is required, Powertech requests the proposed modification for consistency with NRC license requirements.	withdrawals would occur within the wellfield, it is incorrect to say that the Permittee will "continue to" measure the water levels.
70	61	**IX.E. Post-Restoration Groundwater Monitoring Requirements** 4. The Permittee shall also ~~continue to~~ collect groundwater samples every 6 months from overlying and underlying (if applicable) non-injection interval monitoring wells and analyze them for the excursion monitoring parameters. ~~baseline water quality parameters in Table 8 which have baseline concentrations above the non-detect value in the restored injection interval~~. ~~The non-injection interval analytical results shall meet the baseline standards established under Section B.2 of this Part.~~	Please refer to Attachment A-3 for a proposed alternate solution to post-restoration groundwater monitoring. In the event that post-restoration groundwater monitoring is required, Powertech requests modification of the non-injection interval excursion monitoring requirements during post-restoration monitoring as described in Attachment A-9.	Attachment A-9 includes comments regarding the proposed non-injection interval excursion monitoring requirements during post-restoration monitoring.
71	62	**IX.E. Post-Restoration Groundwater Monitoring Requirements** 13. If the results from the retesting strategy under 11 above show that an SSI has occurred … a. Within 30 days from confirmation of the SSI, the Permittee shall submit an aquifer remediation plan for the Director's approval showing how aquifer clean-up and monitoring will be conducted and how the Permittee will ensure that no ~~further~~ migration of ISR contaminants will occur across the aquifer exemption boundary and cause a violation of MCLs or otherwise adversely affect human health outside of the exempted aquifer ~~will be accomplished~~.	Please refer to Attachment A-3 for a proposed alternate solution to post-restoration groundwater monitoring. In the event that post-restoration groundwater monitoring is required, Powertech requests modification to clarify that an SSI within the exempted aquifer does not signal migration of ISR contamination across the aquifer exemption boundary. Powertech also requests clarification of the	The use of "further" in this proposed condition is incorrect, since this condition will be triggered by an SSI within the exempted aquifer.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
			language for consistency with 40 CFR § 144.12(a).	
72	64	**IX.F.5. Demonstration that Manifold Monitoring of Injection Pressure is Comparable to Wellhead Monitoring** a. Demonstration shall consist of a list of injection pressures measured at each wellfield injection wellhead compared to the injection pressure measured at the pressure gauge at each header house and the time and date each injection pressure measurement was collected. b. The Permittee shall conduct a bounding analysis demonstration for each header house that manifold monitoring is comparable to individual well monitoring using the maximum anticipated carbon dioxide and oxygen injection rates. ~~b~~c. The Permittee shall make an effort to record the measurements at the same time from wellhead pressure gauge and the header house pressure gauge. ~~c~~d. The report shall consist of i. injection well identification numbers, ii. injection pressure measured at each wellhead, iii. time and date of measurement, iv. header house identification number for the injection well, v. header house injection pressure measured, vi. time and date of measurement, vii. maximum anticipated flow rate of carbon dioxide for the header house and viii. maximum anticipated flow rates of oxygen for each injection well. ~~d~~e. This information shall be included in the next Quarterly Report after the information is compiled. ~~e~~f. After the initial demonstration for a wellfield, if adjustments are made to the oxygen flow rate or	Powertech requests removal of this condition as duplicative of the requirements in Part V, Section I.1. In the event that this condition remains, Powertech requests modification for consistency with the modifications proposed in comment #35.	The requirements in Part IX, Section F.5 appear to be duplicative of those in Part V, Section I.1. See also comment #35.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		carbon dioxide flow rates outside of the range of the bounding analysis~~, which are located in-line after the header house pressure gauge~~, then a new demonstration is required.		
73	65	**IX.F.9. Excursion Reporting** **a. Initial Excursion Reporting** i. If an excursion has been confirmed, the Permittee shall notify the EPA within 24 hours per Part XII, Section D.11.e and follow up with a written report within 5 days. A) ~~the Permittee shall notify the EPA within 24 hours per Part XII, Section D.11.e and follow up with a written report within 5 days.~~Location of excursion,	Powertech requests removing the duplicative requirements.	It appears that duplicate requirements are listed under Part IX, Sections F.9.a.i and F.9.a.i.A.
74	66	**X.B. Records of Monitoring Data** 6. The Permittee shall also ~~will~~ maintain an electronic database containing well completion and mechanical integrity test records for all injection wells and provide it for EPA use upon request.	Typographical correction.	Powertech suggests correcting "shall also will."
75	67	**XI.B. Well Plugging Requirements** 1. Prior to abandonment, each Class III injection well shall be plugged with bentonite or cement grout in a manner which prevents the movement of fluids into or between underground sources of drinking water.	The proposed modifications are requested for consistency with NRC license and State of South Dakota plugging requirements.	Requiring all injection wells to be plugged with cement is internally inconsistent within the draft permit and inconsistent with NRC license requirements and State of South Dakota plugging requirements. Section 6.1.9 of the approved NRC license application specifies that wells will be plugged with bentonite or cement grout to meet the South Dakota well abandonment standards.
76	72	**XII.D.11. Reporting Requirements** i. Oil Spill and Chemical Release Reporting: The Permittee shall comply with all reporting requirements related to the occurrence of oil spills and chemical releases by contacting the National Response Center ~~(NRC)~~ at (800) 424-8802.	Powertech suggests removing the "NRC" acronym for National Response Center.	The "NRC" acronym is used elsewhere in the draft permit for U.S. Nuclear Regulatory Commission.

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
77	73	**XIII.C. Updated Cost Estimate and Timing for Demonstration of Financial Responsibility** An updated cost estimate shall be submitted at least 90 days prior to initial construction of Class III injection wells within the permit area ~~upon the Issue Date of the Final Permit~~. The demonstration of financial responsibility shall be submitted to the EPA ~~within 21 calendar days of the Effective Date of the Final Permit and~~ at least 90 days before the commencement of operation of any Class III injection well~~construction activities~~.	Powertech proposes to provide EPA with an updated financial responsibility cost estimate at least 90 days prior to initial construction of Class III injection wells within the permit area. This is consistent with License Condition (LC) 9.5 in NRC license SUA-1600, which requires Powertech to provide an updated financial assurance estimate at least 90 days prior to beginning construction activities associated with any planned expansion or operational change that was not included in an annual financial assurance update. Powertech proposes to provide EPA with demonstration of financial responsibility at least 90 days prior to commencing operations. This is also consistent with LC 9.5, which requires Powertech to submit the financial assurance instrument for NRC staff review and approval 90 days prior to commencing operations.	The proposed provision would require an updated financial responsibility cost estimate to be submitted upon issuance of the Final Permit and a demonstration of financial responsibility within 21 calendar days of the Effective Date of the Final Permit. As described in comment #34, there are a number of permits and regulatory approvals needed prior to construction, and economic factors may contribute to a delay in the onset of construction.
78	7 (App B)	The Permittee shall ensure that the Down-gradient Compliance Boundary extends far enough so that each end of the boundary intercepts all restored wellfield groundwater flowing down-gradient as illustrated in Figures B2a and B2b. Figure B2a shows the north end of	Typographical correction.	Powertech suggests removing "aqua" in "the aqua Down-gradient …"

Table 1. Draft Class III Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Page	Recommended Alternative Language or Other Modification	Explanation of Alternative(s)	Comment
		the wellfield in Figure B1; Figure B2b shows the south end of the wellfield in Figure B1. In both figures, the ~~aqua~~ Down-gradient Compliance Boundary extends far enough …		
79	7 (App B)	**Figure B2b. The Down-gradient Compliance Boundary at the ~~north~~ south end of the wellfield shown in Figure B1 extends far enough at each end to capture any restored groundwater flowing from the wellfield.**	Typographical correction.	The figure shows the south end of the wellfield rather than the north end.

Table 2. Draft Class III Fact Sheet Specific Comments

No.	Fact Sheet		Type	Comment and Requested Modification
	Page	Section		
F1	Various	Various	C	Powertech requests that EPA update the fact sheet consistent with changes made in the draft permit to address the comments in Table 1 and Attachment A. Specific comments related to the draft fact sheet are provided below.
F2	9	2.0 Table 1	C	Refer to comment #5 in Table 1. Powertech requests updating the description of the mineralized horizons in Dewey Wellfield 2 in Section 2.0, Table 1. This change would make the cross section description consistent with that for B-WF4, 6, 7 and 8.
F3	60	5.4	C	Refer to comment #22 in Table 1. Powertech requests modification of the following statement: "The pump test duration must be sufficient to create a suitable response in the injection interval perimeter monitoring well ring~~, a minimum drawdown of 1 foot~~."
F4	69	5.6.2	T	In the 3rd bullet on this page, Powertech requests correcting a typographical error as follows: "the model incorporates the effects of concurrent production and restoration activities in other Burdock wellfields on the Chilson aquifer potentiometric surface in the areas ~~were~~ where partially saturated injection intervals are anticipated."
F5	82	7.5 Figure 25	C	Powertech requests removing or correcting Figure 25, which appears to show that 1.5-inch polyethylene pipe would have a water pressure rating no higher than about 100 to 150 psi. The figures shown are for Schedule 40 and 80 pipe, which is not consistent with the permit application. The Class III permit application (p. 10-5) indicates that SDR 11 polyethylene pipe with a pressure rating at least 150 psig will be used between the header houses and the wells. Figure 25 is also not consistent with Part V, Section E.3.b of the draft permit, which specifies no greater than SDR 11 polyethylene pipe must be used for injection piping. Depending on the piping material, SDR 11 HDPE has a pressure rating of 160 psi for PE3408 or PE3608 or 200 psi for PE 3710 or PE4710 (Plastic Pipe Institute 2008; Exhibit 031). Moreover, the fact sheet appears to misunderstand Powertech's commitment to maintain the injection pressure below the pressure rating of the pipe between the header house and wellheads. Powertech's commitment applied to the piping between the header house and the wellheads, while EPA's evaluation appears to focus on the injection tubing inside the wells. As described in comment #32 in Table 1, injection tubing is not subject to a significant pressure differential, and a failure in an injection tubing would not release any fluids outside of the well casing.
F6	84	7.6.1	T	In the paragraph above Section 7.6.2, Powertech requests correcting a typographical error as follows: "Section 43 also requires ~~Dewey-Burdock Project 11-4 July 2012~~ thermoplastic pipe to conform to ASTM F480."

Comment type key: **A** – alternate approach proposed; **C** – correct to be consistent with application, regulations or NRC license requirements; **E** – additional explanation requested; **I** – inconsistency (internally inconsistent between parts of Draft permit or supporting documents); **R** – remove; inconsistent with application, regulations or NRC license requirements; **T** – typographical error

Table 2. Draft Class III Fact Sheet Specific Comments (Cont.)

No.	Fact Sheet		Type	Comment and Requested Modification
	Page	Section		
F7	93	9.2	C	The statement is made that "During groundwater restoration, the expected bleed rate will be 1.0% of groundwater removal rate in each wellfield." This does not account for the optional groundwater sweep described in Section 10.8.2.1.3 of the Class III permit application. Powertech requests changing this statement as follows: "During groundwater restoration, the expected bleed rate will be 1.0% to 17% of groundwater removal rate in each wellfield."
F8	94	9.3	C	The statement is made that "At a minimum, one wellfield in the Burdock Area and one wellfield in the Dewey Area will be in the uranium recovery phase at the same time." This is inconsistent with Section 10.10 (p. 10-13) of the Class III permit application, which states that Powertech may develop either the Burdock or Dewey area wellfields first, followed by those in the other area. Powertech's current plans include developing Burdock area wellfields prior to those in the Dewey area (Exhibit 026).
F9	100	11.0	E, T	Powertech questions the reference to 40 CFR § 146.11(a)(4), since § 146.11 contains criteria and standards applicable to Class I nonhazardous wells and since there is no section (a)(4) under § 146.11.

Comment type key: **A** – alternate approach proposed; **C** – correct to be consistent with application, regulations or NRC license requirements; **E** – additional explanation requested; **I** – inconsistency (internally inconsistent between parts of Draft permit or supporting documents); **R** – remove; inconsistent with application, regulations or NRC license requirements; **T** – typographical error

Table 3. Draft Aquifer Exemption Record of Decision Specific Comments

No.	Draft AE ROD		Fact Sheet		Type	Comment and Requested Modification
	Page	Section	Page	Section		
E1	3	Background	---	---	C	The estimate of 4,000 Class III injection wells is not consistent with Powertech's current estimate. The April 2015 Preliminary Economic Assessment for the Dewey-Burdock Project estimates 1,461 injection wells and 869 production wells for the entire project (TREC 2015; Exhibit 026). Powertech suggests clarifying the current estimate of injection and production wells to help the public understand the total number of each. Powertech's previous estimate of 4,000 total injection/production wells was based on an assumption of a much closer spacing between injection and production wells than what is currently planned. The estimate was based on a 2010 Preliminary Economic Assessment that used a 70-foot by 70-foot dimension for each wellfield pattern, which is roughly half of the average area used in the updated economic assessment.
E2	3-5	Description of Proposed AE	---	---	E	Please refer to Attachment A-10 for specific comments regarding the proposed aquifer exemption boundary and a proposed alternate solution. Powertech requests additional explanation as to whether the aquifer exemption area is the green-dashed boundary shown in Figure 2 or 120 feet from the perimeter monitoring well rings around the future wellfields. Comment A-10-4 in Attachment A-10 provides specific comments regarding the risk that one or more modifications to the aquifer exemption boundary will be needed during wellfield design and construction, since the green-dashed boundary is based on the approximate perimeter monitoring well ring locations, which are subject to change during delineation drilling.
E3	4	Areal Extent of the AE	---	---	T	Powertech requests correcting a typographical error as follows: "The areal extent of the proposed AE is approximately 2,260 acres and includes the areas shown in Figure 2~~1~~."
E4	5	Regulatory Criteria for AE Request	---	---	T	In the last paragraph, 2nd sentence, Powertech requests correcting a typographical error as follows: "As described in the September 2011~~2012~~ memorandum." This requested change also applies to the footnote: Technical Memorandum to J. Mays, R. Blubaugh - Powertech Uranium, from: Hal Demuth – Petrotek "Calculation of the Proposed Aquifer Exemption Distance beyond the Monitor Ring: Dewey-Burdock ISR Uranium Project, South Dakota" September 12, 2011~~2012~~, included as Appendix M of the Class III Permit Application.
E5	7-10	Private Drinking Water Wells inside the AE Boundary	97-99	10.2	C	Refer to comment #25 in Table 1, which describes how Powertech disagrees with EPA's conclusion that Well 16 must be plugged and abandoned in order to demonstrate that it is not a drinking water well.

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Table 3. Draft Aquifer Exemption Record of Decision Specific Comments (cont.)

No.	Draft AE ROD		Fact Sheet		Type	Comment and Requested Modification
	Page	Section	Page	Section		
E6	8 12-15	Fig. 3 Flow Rates Used in the Capture Zone Equation	30	4.2.1	C	Powertech disagrees with the identification of Well 41 as a drinking water well (e.g., in Figure 3 and Table 3). As described in comment #60 in Table 1, Well 41 is a stock watering well at an uninhabitable residence that has not been inhabited for 30 years or more. Powertech requests removing this well from the capture zone analysis and Figure 3 in the draft Aquifer Exemption ROD.
E7	15	40 CFR § 146.4(b)(1)	---	---	C	Powertech requests updating the reference on the commercial producibility of uranium to the most recent (2015) preliminary economic assessment for the Dewey-Burdock Project (Exhibit 026).
E8	20-21	Vertical confinement	22	3.4.2	I	Powertech requests clarifying the statement at the bottom of the page that "there is a hydraulic connection between the Fall River Formation and the Chilson Sandstone that would call into question the integrity of the Fuson Shale as an upper confining zone to the Chilson Sandstone". Specifically, Powertech requests clarifying that this statement only applies to an isolated area. As currently written, the statement could be construed as indicating a general hydraulic connection across the permit area. That is inconsistent with page 22 of the Fact Sheet, which states: The EPA has reviewed the information that Powertech provided in the Permit Application and has determined that evidence indicates that except for the northeast corner of Section 1, T7S, R1E, the Fuson member of the Lakota formation is a continuous confining zone underlying the Fall River injection interval and overlying the Chilson Sandstone injection interval throughout the Dewey-Burdock Permit Area.
E9	24	Monitoring Requirements	99	11.0	C	The statement that "The stability monitoring period in the current NRC license includes 12 months" is inconsistent with NRC license requirements and the description in the Fact Sheet. As stated correctly on page 99 of the Fact Sheet, the stability monitoring period must be conducted "until the data show that the <u>most recent four consecutive quarters</u> indicate no statistically significant increasing trend for all constituents of concern that would lead to an exceedance above the respective standard in 10 CFR Part 40, Appendix A, Criterion 5B(5)" (emphasis added). Powertech requests changing "12 months" to "at least 12 months" in the Draft Aquifer Exemption ROD.
E10	25	Monitoring Requirements	104	12.4.2	C	The statement is made that "For the purposes of post-restoration groundwater monitoring under the Class III Area Permit, a contaminant will be any constituent that was not present in the USDW before the ISR process was initiated (as determined by

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Table 3. Draft Aquifer Exemption Record of Decision Specific Comments (cont.)

No.	Draft AE ROD		Fact Sheet		Type	Comment and Requested Modification
	Page	Section	Page	Section		
						baseline monitoring required under the UIC Class III Area Permit) or any increase of statistical significance above the mean baseline concentration of any constituent present in the USDW." Please refer to general comment #G-4, which describes how the non-endangerment standard of the SDWA prohibits fluid movement from injection only insofar as it would cause a failure of a public water system to comply with health-based limits for contaminants. Powertech requests updating this discussion to indicate that the Class III Area Permit would prohibit migration of a contaminant into a USDW if the presence of such contaminant may cause a violation of any primary MCL or may otherwise adversely affect the health of persons. Further, Powertech requests replacing post-restoration groundwater monitoring with geochemical modeling using site-specific data, as requested in Attachment A-3.
E11	25	Monitoring Requirements	123	12.10	I	The statement that "once wellfield groundwater reaches a down-gradient contaminant boundary, there is a <u>three-year period</u> of stability monitoring to evaluate whether ISR contaminant concentrations are demonstrating an increasing trend which might result in violation of groundwater baseline levels at the down-gradient AE boundary" does not appear to be consistent with Part IX, Section E.13.c of the draft permit or Section 12.10 (page 123) of the fact sheet, which specify that post-restoration monitoring must continue for <u>at least 2 years</u> after arrival of the groundwater <u>and until the most recent four consecutive samples</u> indicate no statistically significant increasing trend that would lead to an exceedance above the permit limit. Powertech requests that EPA update the discussion for internal consistency. Further, Powertech requests replacing post-restoration groundwater monitoring with geochemical modeling using site-specific data, as requested in Attachment A-3.
E12	25	Other Considerations	---	---	C	Powertech requests correcting the statement that "In addition to these taste and odor concerns, Inyan Kara wells completed within the ore zone also have radium, gross alpha and radon concentrations above MCLs." First, Table 17.8 in the Class III permit application shows that several wells also exceeded uranium MCLs. Second, Powertech notes that there is no radon MCL, although nearly all wells exceed EPA's formerly proposed MCL of 300 pCi/L.

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Table 4. Draft Cumulative Effects Analysis Specific Comments

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
C0	All	All	R	Please refer to general comment #G-15, which describes Powertech's assertion that the Draft Cumulative Effects Analysis extends well beyond EPA's regulatory requirement under 40 CFR § 144.33(c)(3), since many aspects do not relate to drilling and operation of the Class III or V injection wells. To clarify, while Powertech believe such a cumulative impact analysis should not be a part of these draft permit documents, comments are included in event EPA decides to further pursue this analysis and, in such an event, the following comments should be considered. NRC has already completed a NEPA assessment for the project, documented in the supplemental environmental impact statement (Exhibit 008), which EPA has already reviewed and provided comments. EPA's cumulative effects analysis represents duplication of these previous efforts.
C1	4	1.0	C	The statement is made that "Powertech's current design for the treatment and storage of ISR waste fluids do not appear to meet the requirements under Clean Air Act regulations found out 40 CFR part 61, subpart W." Please refer to comment #C42, which asks EPA to update the discussion on compliance with subpart W considering the final rule that was issued in January 2017 and Powertech's November 2014 commitments to modify impoundment designs to comply with the final rule. Powertech requests that EPA update this discussion based on changes in the final rule and Powertech's commitment to comply with the final rule.
C2	5	2.0	C	With regard to EPA's review of the final NRC SEIS, the statement is made that "the EPA review letter for the Final SEIS included discussion of <u>some</u> remaining concerns and suggestions for how to address them" (emphasis added). Powertech requests clarifying that there were only two concerns expressed in EPA's comment letter on the final SEIS and that both issues are addressed in the Draft Class III Area Permit (pond permitting requirements under subpart W and monitoring domestic well #18).
C3	6	3.1.1	C	The statement is made that "During groundwater restoration, contaminated water is pumped from the wellfield injection interval, treated with reverse osmosis, and most of the clean permeate from the reverse osmosis treatment process is reinjected." Powertech requests clarifying that reverse osmosis would only be used in the deep disposal well option.
C4	8	3.1.1	I	The statement is made that "during operations, Powertech will take over control of all Inyan Kara wells located inside the project boundary." This is inconsistent with Section 3.2.1.1 of this document, which correctly states that Powertech will remove all drinking water wells within the project boundary from drinking water use and remove all stock wells within ¼ mile of wellfields from private use. Powertech requests correcting the inconsistency.
C5	9	3.1.1	I	The statement is made that "if any [private Inyan Kara wells] are located close to an ISR wellfield and cause a breach in a confining zone … Powertech will provide an alternative water source to well owners by installing a Madison water supply well, as discussed in Section 3.2.1.1." The referenced section discusses two options for replacing a private well: installing a replacement well or alternate water supply such as a pipeline from a Madison well. A replacement well would not necessarily be installed in the Madison aquifer. For example, it could be installed in the

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				Sundance/Unkpapa aquifer. Powertech requests updating this discussion for consistency with commitments in the Class III permit application.
C6	10	3.1.2	T	In the last paragraph on this page, Powertech requests correcting typographical errors as follows: "Table 6 is Table 2-1 in Powertech's Report to Accompany Madison Water Right Permit Application shows a different breakout of the maximum estimated Madison usage as shown in Table 54. The maximum anticipated Madison usage is one gallon per minute more in Table ~~65~~ than in Table 54."
C7	11	3.1.2	T	In the last sentence on this page, Powertech requests correcting a typographical error as follows: "Therefore, the EPA finds that the impacts from Powertech's proposed net withdrawal of Madison ~~Inyan Kara~~ groundwater will not affect the availability of groundwater for other Madison groundwater users."
C8	12	3.2.1	C	The statement is made that "The EPA reviewed the information Powertech provided about the potentiometric surface drawdowns of the Inyan Kara Aquifers expected from the maximum gross pumping rate of 8,500 gpm." Since it is the net pumping rate and not the gross pumping rate that affects drawdown, Powertech requests correcting this as follows: "The EPA reviewed the information Powertech provided about the potentiometric surface drawdowns of the Inyan Kara Aquifers expected from the maximum net ~~gross~~ pumping rate of 170 ~~8,500~~ gpm Powertech is requesting from the DENR Water Rights Program."
C9	12 15	3.2.1 3.2.1.2	I	The statement is made that "the potentiometric surface elevations are expected to recover to within one to two feet at the locations of the pumping well after decommissioning of the project" (emphasis added). This is inconsistent with the permit application and Section 3.2.1.2 of this document, which correctly states that the elevations are expected to recover within one to two feet after ISR operations end, as opposed to after decommissioning, which may take years after ISR operations end depending on the length of stability monitoring, regulatory approval of successful groundwater restoration, and post-restoration groundwater monitoring, if required. This comment also applies to the similar statement on the bottom of page 15. Powertech requests changing "after decommissioning of the project" to "after ISR operations" in both instances.
C10	17	3.2.2	I	The statement is made that estimated drawdown of the Madison aquifer at 551 gpm pumping is "86.8 feet at the Dewey-Burdock site." Powertech requests clarifying that this is the estimated drawdown at the pumping well, not across the project site. This is correctly stated on page 18, which indicates that the DENR "calculated the drawdown in the Madison aquifer potentiometric surface from the Madison water supply wells to be 86.8 feet at the well locations within the Dewey-Burdock Project Area."
C11	19	3.3.1	C	The statement is made that "The NRC license requires Powertech to conduct groundwater restoration to the wellfield injection zone to restore the groundwater to pre-ISR conditions" (emphasis added). While it would be appropriate to characterize the NRC restoration requirements as consistent with pre-ISR conditions, the requirements in 10 CFR Part 40, Appendix A, Criterion 5B(5) are to restore the water to baseline or an MCL,

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				whichever is higher, or an ACL through the rigorous ACL approval process. Powertech requests correcting this statement as follows: The NRC license requires Powertech to conduct groundwater restoration to the wellfield injection zone to restore the groundwater to meet 10 CFR Part 40, Appendix A, Criterion 5B(5) requirements ~~pre-ISR conditions~~.
C12	26	3.3.4	T	Powertech requests correcting "Burdock pond designs" to "Dewey-Burdock pond designs".
C13	29	Fig. 9b	T	Powertech requests correcting "HDPA liner" to "HDPE liner".
C14	32	Fig. 12a	T	Powertech requests correcting "HDPA liner" to "HDPE liner".
C15	32	Fig. 12b	T	Powertech requests correcting "HDPA liner" to "HDPE liner".
C16	33	Fig. 13a	T	Powertech requests correcting "HDPA liner" to "HDPE liner".
C17	33	Fig. 13b	T	Powertech requests correcting "HDPA liner" to "HDPE liner".
C18	34	3.3.4.2	E	No justification appears to be provided for the statement that a leak from a pond storing treated water will result in "extensive impact … which will be difficult and expensive to remediate" by the time the leak is detected in the pond detection monitoring system required by the NRC. The pond detection monitoring system required by License Condition 12.25 in SUA-1600 will be designed as an early warning system using non-hazardous indicator parameters, similar to what is done for excursion monitoring in the wellfields. Based on this requirement, the fact that the ponds with single HDPE liners overlying clay liners will only store treated water, and the fact that the ponds will be about 1 mile away from Pass Creek, there is a low likelihood of an "extensive impact" from a pond leak. Powertech requests revising this discussion to address these considerations.
C19	36	3.3.4.2	C	See comments #C1 and #C42. The statement that "subpart W … requires that there be no more than two ponds, each with a surface area of no more than 40 acres that are in operation at any given time" is not supported by the final subpart W rule. Powertech requests updating this discussion.
C20	37	3.5	C	Powertech requests adding to the list of mitigation measures to prevent groundwater impacts the groundwater detection monitoring plan required by NRC License Condition 12.25 (Exhibit 016 at 14-15).
C21	38	3.5	T	Powertech requests removing "as" in "designated monitoring wells ~~as~~ during operations" in the number 8 listed at the top of this page.
C22	38	4.0	I	In the second paragraph in Section 4.0 and various locations throughout the document, Powertech's Large Scale Mine Permit application is incorrectly referenced as "the South Dakota DENR Large Scale Mine Permit." Since the permit has not yet been issued pending completion of the state hearing, Powertech requests changing all references to the Large Scale Mine Permit Application, which is done correctly at some locations within the document (e.g., at the bottom of page 36).
C23	43	4.2.3	T	In the 2nd sentence in this section, Powertech requests correcting "Table 8" to "Table 7".
C24	43	4.2.3	T	In the 2nd to last paragraph on this page, 5th line, Powertech requests correcting a typographical error as follows: "and 5.3-7 provide the locations of planned ephemeral stream channel~~s~~ diversions within the permit area."

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
C25	48 70	4.5 6.0	C	The statement is made that "Powertech will use a phased approach to wellfield development beginning with wellfield 1 in the Dewey and Burdock Areas." See comment #F8 in Table 2, which describes how this statement is inconsistent with Section 10.10 (p. 10-13) of the Class III permit application, which states that Powertech may develop either the Burdock or Dewey area wellfields first, followed by those in the other area. Powertech's current plans include developing Burdock area wellfields prior to those in the Dewey area (Exhibit 026). This comment also applies to a similar statement on page 70. Powertech requests updating the text on p. 48 as follows: Powertech will use a phased approach to wellfield development beginning with wellfield 1 in the Dewey and Burdock Areas. ~~The Burdock B-WF1 wellfield and Dewey D-WF1 wellfield will be constructed during the initial construction phase of the project.~~ Alternately, Powertech may develop either the Burdock or Dewey wellfields first, followed by those in the other area. Similarly, Powertech requests updating the text on p. 70 as follows: Powertech anticipates that the initial construction of processing facilities, infrastructure (e.g., pipelines, access roads, power lines, and storage ponds), and the two initial wellfields is expected to be completed within two years. Powertech will develop the wellfields in a progressive manner, beginning with Dewey and Burdock wellfields #1. Alternately, Powertech may develop the wellfields and processing facilities in either the Dewey or Burdock area first, followed by those in the other area.
C26	51	4.6	T	In the last sentence in this section, Powertech requests changing the reference from Section 5.4 to Section 4.8, which lists mitigation measures for surface water quality impacts.
C27	52	4.7.1	I	The statement is made that the 243 acres of land disturbance anticipated under the deep well liquid waste disposal option includes "initial wellfields." Powertech requests correcting this to "all wellfields" for consistency with Table 10 and Section 6.0.
C28	52	4.7.1	T	In the 3rd paragraph, 4th line, Powertech requests correcting a typographical error as follows: "… measures to ensure that injection zone fluids will be vertically confined and injection will not result in the migration of …"
C29	55	4.8	T	In list item #5, Powertech requests correcting a typographical error as follows: "Maintain natural contours as much as possible, stabilizing slopes and avoiding unnecessary off-road travel with vehicles;~~ maintaining natural contours as much as possible, stabilizing slopes and avoiding unnecessary off-road travel with vehicles.~~"
C30	55	5.0	C	In the 2nd paragraph, the statement is made that "To mitigate impacts from spills and leaks and to prevent long term impacts, the DENR NPDES permit will require Powertech to develop an Emergency Preparedness Program under the project Environmental Management Plan." Powertech requests correcting this statement to reflect that the Environmental Management Plan is a requirement of the NRC license rather than the DENR NPDES permit. This comment also applies to similar statements on pages 62, 67 and 74.

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
C31	68	6.0	T	In the 1st paragraph, 9th line, Powertech requests correcting "2.394 acres" to "2,394 acres".
C32	70	6.0	T	In the 1st paragraph, last line, Powertech requests correcting "Table 7" to "Table 11".
C33	71	6.0	T	In the last line in this section, suggest correcting "there should be there should be".
C34	71	7.0	T	In this last line of the 1st paragraph in this section, Powertech requests correcting "there should be ~~there should be~~".
C35	76	7.4.1	I	In the 2nd paragraph, the statement is made that "Powertech estimates the maximum volume of liquid wastes injected into the deep injection wells during aquifer restoration will be 155 gpm (see Section 3.1.1 of this document)." The reference to Section 3.1.1 is for estimated Inyan Kara water consumption during concurrent operations and aquifer restoration, rather than the maximum injection volume. The correct maximum volume of liquid waste injection during concurrent operations and aquifer restoration is 232 gpm, as stated on page 144 (3rd paragraph) of this document. That amount is consistent with Figure 7.1 of the Class III permit application and Table 5.3-2 of the Large Scale Mine Permit Application. Powertech requests correcting this statement as follows: Powertech estimates the maximum volume of liquid wastes injected into the deep injection wells during aquifer restoration will be 232 ~~155~~ gpm (see Section 15.3.1~~.1~~ of this document).
C36	76	7.4.2	C	In the 1st paragraph in this section, the statement is made that "Powertech estimates that typical liquid waste flow rates during groundwater sweep under the land application option during aquifer restoration will be approximately 507 gpm as shown in Table 5, Section 3.1.2 of this document." Similar to the last comment, the reference to Section 3.1.2 is for estimated Madison usage, not wastewater disposal requirements under the land application option. Figure 7.1 of the Class III permit application and Table 5.3-2 of the Large Scale Mine Permit Application show that the maximum anticipated liquid waste flow rate during concurrent operations and aquifer restoration under the land application option is 582 gpm. Powertech requests correcting this statement as follows: Powertech estimates that typical liquid waste flow rates during groundwater sweep under the land application option during aquifer restoration will be approximately 582 ~~507~~ gpm as described ~~shown~~ in ~~Table 5,~~ Section 15.3.~~1.~~2 of this document.
C37	79	7.6	E	In bullet #e, Powertech requests clarifying that "Table 5.4-3" refers to the DENR Large Scale Mine Permit Application in the following statement: "The concentrations of metals and metalloids, including arsenic and selenium, are anticipated to be low as shown in Table 5.4-3."
C38	79	7.7	T	In the 2nd line under Section 7.7, Powertech requests correcting "Section 7.2" to "Section 7.6".
C39	80	8.1	C	The statement is made that "The Class III injection, production and monitoring wells will have casing screen." As described under comment #29 in Table 1, Section 11.2 of the Class III permit application specifies that the well screen assembly and filter sand may or may not be used. The omission of well screen and filter sand would only be done where the screened interval was sufficiently competent; therefore, there would be no impacts to geology with or without the well screen. Powertech requests deleting this sentence.

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

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	Page	Section		
C40	82	8.2.2	T	In the last paragraph in this section, 3rd line, Powertech requests correcting "injection-induced" to "injection-induced seismicity".
C41	83	8.4	E	Powertech requests clarification on the statement that "Post-restoration monitoring must have demonstrated that no ISR contaminants have crossed the aquifer exemption boundary" with respect to potential impacts to geology. Any potential impacts to groundwater quality outside of the exempted aquifer would seem to be classified as groundwater impacts rather than geology impacts.
C42	102	10.3.3	C	Powertech requests updating the statement that "EPA is considering revisions to 40 CFR Part 61, subpart W" in light of the final rule release in January 2017. It is also suggested to update the discussion to reflect the provisions in the final rule, especially that there are no longer maximum size limits or maximum number of impoundments for non-conventional impoundments such as would be constructed at the Dewey-Burdock Project. Powertech requests clarifying for the public the determination in the final rule that radon emissions from non-conventional impoundments that maintain a minimum liquid level are nearly indistinguishable from background. Since Powertech will treat the wastewater to remove radium and its byproducts, radon emissions from treated water storage ponds will be minimal. Powertech also requests updating the discussion to recognize its November 2014 commitments regarding modifications to the pond designs to comply with final subpart W provisions (Powertech 2014; Exhibit 032). In response to a request from EPA staff, Powertech committed to modifying the single-lined wastewater storage and treatment impoundments in the Burdock area to minimize the potential for contamination to reach alluvial groundwater. That letter also documents NRC staff's determination that the existing pond designs are adequately protective of human health and the environment and the NRC license conditions related to pond leak detection monitoring, routine pond inspections and development of a standard operating procedure (SOP) for potential pond releases. In addition, Powertech requests that EPA document Powertech's commitment in its November 2014 letter to submit an application to EPA for approval to construct wastewater storage and treatment impoundments at least 60 days prior to construction of the impoundments. This application was not submitted previously to EPA due to the risk that it would further delay the UIC permitting process, which has already taken more than 8 years yet is incomplete, and due to the uncertainty in the provisions of the final subpart W rule, which was not released until January 2017.
C43	103	10.4	T	In the numbered list at the top of this page, it appears that the sentence beginning "The presence of Class I areas" should be bullet #3.
C44	103	10.4	C	In the paragraph above Section 10.4.1, the statement is made that "The peak year accounts for the time when all four ISR project life-cycle phases (construction, operations, aquifer restoration, and decommissioning) are occurring simultaneously and represents the highest amount of emissions the project will generate in any one year." If post-restoration groundwater monitoring is required for this project, it would delay decommissioning by many years if not decades, such that the decommissioning phase would not overlap with any of the other project phases.

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

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	Page	Section		
				Therefore, this worst-case scenario would not occur. Powertech requests updating this discussion if post-restoration groundwater monitoring is required.
C45	104	10.4.1	C	In the 1st paragraph, the statement is made that "the NRC … did not use the most recent regulatory-approved version of the [AERMOD and CALPUFF] model software platforms." The AERMOD version used by IML Air Science (IML) in the project modeling was updated by IML's software vendor, Lakes Environmental, multiple times after the original modeling protocol was developed. As a practical matter, any model version is likely to be out of date by the time an EIS is published. This is particularly true when follow-up model runs are required. The important consideration is that the versions of AERMOD and its associated software tools were current and mutually compatible when the model was implemented, and that to preserve comparability the model was not changed mid-stream. Powertech requests updating the discussion to document that the versions of AERMOD and its associated software tools were current and mutually compatible when the model was implemented.
C46	104	10.4.1	C	In the 2nd paragraph, the statement is made that "EPA did not find that NCR [*sic*] provided sufficient information to support the use of dry depletion in the AERMOD analysis." Precedent has been established by state and federal agencies for using the dry depletion option in AERMOD to model short-term impacts from fugitive dust emissions. For example, a coal lease application in Utah triggered PM_{10} modeling that included a refined analysis using deposition and plume depletion (IML 2013; Exhibit 033). Page 9 of Appendix K in the Alton Coal Lease DEIS states, "deposition was only considered for assessing the final PM_{10} modeled ambient air impacts. Deposition was not considered for any other pollutants …" Page 10 states, "the primary pollutants of concern are fugitive dust." (BLM 2015; Exhibit 034). The Colorado Department of Public Health and Environment (CDPHE) uses dry depletion to model PM_{10} impacts from fugitive dust sources at mining facilities seeking air quality construction permits (IML 2013; Exhibit 033). Recent projects for which this option was used include the Lafarge Gypsum Ranch Pit, Oxbow Mining's Elk Creek Mine, and Bowie Resources' Bowie N.2 Mine. The Wyoming Department of Environmental Quality stated that it would accept the use of plume depletion algorithms in AERMOD as long as an applicant justifies the inputs, including particle size, particle density and mass fraction (IML 2013; Exhibit 033). Both Colorado and Wyoming operate EPA-approved air permitting and enforcement programs. A recent modeling analysis was triggered by high fugitive dust impacts in the Salt River area of Arizona. Maricopa County was reclassified as a serious PM_{10} nonattainment area on June 10, 1996. The primary sources of particulate pollution in this area are "fugitive dust from construction sites, agricultural fields, unpaved parking lots and roads, disturbed vacant lots and paved roads" (IML 2013; Exhibit 033). Cited among the "general characteristics that make AERMOD suitable for application in the Salt River Study area" is the claim that "gravitational settling and dry

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				deposition are handled well." Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C47	104	10.4.1	C	In the 2nd paragraph, the statement is made that "The dry depletion option may be appropriate to use in AERMOD when sufficient data are available to determine the particle size distribution and other particle information reasonably well for each source." Powertech asserts that sufficient justification was provided in the IML 2013 modeling (Exhibit 033), as summarized below. The original PM_{10} particle size distribution was obtained from the modeling protocol for the Rosemont Mine in Arizona (IML 2013; Exhibit 033). The modelers for the Rosemont project acquired this distribution from AP-42 Section 13.2.4 and applied it to fugitive dust emissions from haul roads. Because Section 13.2.4 applies to aggregate handling and storage piles, other sources were consulted to validate the use of this particle size distribution for haul road dust. A study by Watson, Chow and Pace referenced in a New Jersey Department of Environmental Protection report found that 52.3% of the particulate from road and soil dust is less than 10 µm in diameter. Of this particulate 10.7% was found to be smaller than 2.5 µm in diameter and the remaining 41.6% fell between 10 and 2.5 µm. Assuming that fugitive dust particle sizes follow a lognormal distribution, these two data points were transformed into a multi-point particle size distribution for comparison to the original particle size distribution. The geometric mass mean diameter for the original distribution is 6.47 µm, while the mean diameter for the lognormal distribution is 5.76 µm. EPA's AP-42 Section 13.2.2 and supporting studies characterize PM_{30} from unpaved road dust (the dominant source at Dewey-Burdock) as 30.6% PM_{10} and 3.06% PM2.5. Again, assuming a lognormal particle size distribution, the mean diameter would be 6.77 µm. CDPHE has approved a mean coarse particle diameter for road dust of 6.25 µm (Trinity 2016; Exhibit 035). Since these values are clustered around the original PM_{10} size distribution, it was retained for both CALPUFF and AERMOD dry deposition modeling. As stated above, the mass mean diameter of PM_{10} particles with the chosen size distribution referenced above is 6.47 µm, or approximately 65% of the top diameter. Applying this ratio would yield about 1.5 µm for the mean $PM_{2.5}$ particle size. Hence, the choice of 1 µm mean particle size diameter for $PM_{2.5}$ was conservative in that it increases atmospheric entrainment and decreases settling. In contrast to PM_{10} modeling, the plume depletion option had only a minor effect on modeled $PM_{2.5}$ impacts. Aluminosilicate clay minerals that characterize soil dust in the project area typically have particle density near 2.65 g/cm3. As indicated in IML's final report (IML 2013; Exhibit 033), the Environmental Science Division of Argonne National Lab states, "A typical value of 2.65 g/cm^3 has been suggested to characterize the soil particle density of a general mineral soil. Aluminosilicate clay minerals have particle density variations in the same range." Another study of fugitive dust from unpaved road surfaces, by Watson and Chow, also cites 2.65 g/cm^3 for soil

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				particle density (IML 2013; Exhibit 033). In a more recent analysis, the CDPHE-approved particle density for road dust is 2.655 g/cm^3 (Trinity 2016; Exhibit 035). Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C48	104	10.4.1	E	In the 2nd paragraph, the statement is made that "dry depletion should have been applied to all receptors within the model domain." Using the dry depletion option, IML modeled all receptors with predicted 24-hour PM_{10} impacts in the initial modeling run that, when added to background, were greater than the NAAQS of 150 µg/m^3. This threshold was chosen to demonstrate ultimate compliance of all initially high receptors. The regulatory default settings were used to screen potential problem receptors, and the dry depletion option was used to refine the model results only for those receptors. Since the dry depletion option has the effect of reducing (never increasing) predicted impacts, it was deemed unnecessary to apply this option to receptors already demonstrated to be below the NAAQS threshold. The predicted concentrations would only have decreased beyond those obtained under the regulatory default option. Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C49	104	10.4.1	E	In the 3rd paragraph, the statement is made that "the approach used by NRC will not account for the diesel engine exhaust PM_{10} particles that will not settle out as quickly as the mechanically generated fugitive dust emissions." Most of the non-fugitive sources of particulate emissions at Dewey-Burdock are diesel engines. EPA is correct that some error may be introduced by including combustion sources of PM_{10} in the dry depletion runs. Most particulate matter in diesel exhaust falls within the $PM_{2.5}$ category and exhibits a much slower deposition rate than PM_{10}. Nonetheless, fugitive sources are dominant at Dewey-Burdock, where diesel exhaust constitutes only 1% of the total PM_{10} emissions. For this reason, and to avoid further complicating the final model run, IML grouped all PM_{10} sources together. Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C50	110	10.4.2.1	E	With regard to the 24-hour PM_{10} modeling results, the statement is made in the 1st paragraph that "the top 3 values are of interest regardless of when they occurred." For compliance demonstration, the standard design value is the 4th high concentration over a 3-year period. This value is shown in Table 6-1 (IML 2013; Exhibit 033) and should not be confused with the yearly statistics also presented in that table. Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C51	111	10.4.2.2	T	In the second line, Powertech requests correcting the reference to "Table 11a", which does not appear in this section.
C52	111	10.4.2.4	E	In the 1st paragraph in this section, the statement is made that "IML and NRC determined there is evidence and precedent that supports excluding ground-level, fugitive PM_{10} emissions from the assessment of project impacts on visibility at Wind Cave … However, EPA did not support this approach for the SEIS." As stated in the final report (IML 2013; Exhibit 033) and acknowledged by EPA, even without excluding coarse particulates, the 98th percentile of the

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				annual 24-hour average changes in haze index is less than the contribution threshold of 0.5 dv. Still, IML conducted a final model run excluding coarse PM_{10} for several reasons: • CALPUFF predicted that 70% of visibility impairment at Wind Cave from the Dewey-Burdock Project was caused by coarse PM_{10}. This goes against visibility modeling results obtained by various agencies including South Dakota DENR. Aerosols of sulfate and nitrate, organic carbon, and fine particulates ($PM_{2.5}$) are generally the significant contributors to visibility impairment. • To test the reasonableness of the modeled impact of coarse particulates on visibility at Wind Cave, IML used CALPUFF to model the impact of PM_{10} coarse emissions from Dewey-Burdock at three test receptors (IML 2013; Exhibit 033). The receptors were placed 40, 80, and 116 km from the project, respectively. CALPUFF predicted higher relative contribution from coarse PM_{10} as the distance from the project to the receptor increased. This outcome defies common sense and exposes the fallacy of modeling visibility without accounting for near-field deposition of coarse PM_{10}. • Notwithstanding EPA's challenge to the evidence and precedent appearing in the final report, the modeling protocol does cite NEPA precedent for excluding fugitive dust emissions from visibility impact modeling. This approach was followed in the Atlantic Rim EIS (IML 2013; Exhibit 033), which cited supporting documentation from the Western Regional Air Partnership (WRAP). • A 2005 study (VISTAS 2005; Exhibit 036 at p. 3-13) states, "$PM_{2.5}$ particles, which have a mass median diameter around 0.5 µm, have an average net deposition velocity of about 1 cm/minute … On the other hand, coarse particles … have an average deposition velocity of about 1 m/minute, which is significant, even for emissions from elevated stacks." It seems unreasonable to model the long-range transport of both species as if they behaved the same. Regarding exclusion of coarse particulates from stationary sources: It should be noted that stationary sources at Dewey-Burdock are combustion sources with negligible emissions compared to mobile sources and fugitive dust sources. Moreover, particulates from stationary combustion sources are 97% $PM_{2.5}$ (IML 2013; Exhibit 033) and were already accounted for since only coarse PM_{10} was omitted from the final visibility model run. Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C53	113	10.5	T	In the 6th line of this sentence, Powertech requests changing "in this SEIS" to "in the NRC SEIS".
C54	114	10.6	T	The last sentence in this section appears incomplete: "If Powertech does not implement one or more of these measures properly …"

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

<table>
<tr><th rowspan="2">No.</th><th colspan="2">Draft Cumulative Effects Analysis</th><th rowspan="2">Type</th><th rowspan="2">Comment and Requested Modification</th></tr>
<tr><th>Page</th><th>Section</th></tr>
<tr><td>C55</td><td>114</td><td>10.6.1</td><td>E</td><td>In the 2nd paragraph in this section, the statement is made that “the Dewey-Burdock project has not been shown to greatly effect [sic] regional cumulative air quality.” This should be expected, given the comparison between project emission levels and regional emissions. Since fugitive PM_{10} emissions from Dewey-Burdock constitute the largest single pollutant, and since EPA’s analysis takes issue with the degree of conservatism in modeling fugitive PM_{10} impacts on air quality and visibility, the following table may lend some perspective:
<table>
<tr><th>Area Encompassed</th><th>Fugitive Emission Sector(s)</th><th>PM_{10} Emissions (tons/year)</th></tr>
<tr><td>State of Wyoming</td><td>Unpaved Road Dust</td><td>421,044</td></tr>
<tr><td>State of Wyoming</td><td>Mining Dust</td><td>93,331</td></tr>
<tr><td>State of Wyoming</td><td>Crops and Livestock Dust</td><td>39,112</td></tr>
<tr><td>State of South Dakota</td><td>Crops and Livestock Dust</td><td>333,119</td></tr>
<tr><td>State of South Dakota</td><td>Unpaved Road Dust</td><td>77,273</td></tr>
<tr><td>Dewey-Burdock Permit Area and County Road</td><td>All Fugitive Dust Sources (max. year)</td><td>458</td></tr>
</table>
Source: EPA 2017; Exhibit 037

Since Wyoming is situated generally upwind from Wind Cave National Park, fugitive dust from this state may be more relevant than dust from South Dakota. Projected maximum fugitive PM_{10} emissions from Dewey-Burdock represent 0.08% of the emissions from Wyoming’s three largest sectors, and 0.11% of the emissions from South Dakota’s two largest sectors. Powertech requests that EPA update this discussion in light of the evidence presented in this comment.</td></tr>
<tr><td>C56</td><td>114</td><td>10.6.2</td><td>T</td><td>In the number list, it appears that “Implement fuel saving practices such as minimizing vehicle and equipment idle time” should be item #1.</td></tr>
<tr><td>C57</td><td>117</td><td>11.3</td><td>C</td><td>Powertech requests that EPA provide an estimate of the greenhouse gases added by the proposed post-restoration groundwater monitoring, if required. As described in Attachment A-3, post-restoration groundwater monitoring could require decades or hundreds of years of additional sampling, which would also involve mechanical integrity testing and providing electrical power and maintenance within the Central Processing Plant and Satellite Facility. It does not appear that greenhouse gas emissions associated with the post-restoration groundwater monitoring period have been considered.</td></tr>
<tr><td>C58</td><td>119</td><td>11.3.1</td><td>E</td><td>In the first paragraph, the statement is made that “the year one facility construction does not appear to be distinguishable in the estimation of CO_2 emissions related to electrical power consumption during the construction phase.” Powertech notes that the GHG emissions from year 1 construction amount to about 0.2% of the cumulative,</td></tr>
</table>

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				project GHG emissions. For clarity, however, most of the electricity consumed during the Dewey-Burdock construction phase will be for facilities construction, where utility power will be available. Wellfield construction will involve primarily mobile and earth-moving equipment to drill wells and install piping and power lines. Electricity use in the wellfields will correspond mainly to the operations phase. Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C59	119	11.3.2	T	In the first paragraph in this section, 5th line, Powertech requests correcting "whither" to "either".
C60	121	Tables 33-34	T	It appears that metric tons and short tons are switched in several rows (i.e., those where the metric tons are higher than the short tons). Powertech recommends correcting these tables.
C61	122	11.4	E	In the 4th paragraph, the statement is made that the NRC SEIS does not include any information about GHG emissions during the uranium enrichment phase. Enrichment is downstream from the Dewey-Burdock Project. IML considered the analysis of this phase beyond the scope of the SEIS just as it did the analysis of an ultimate use for the enriched uranium (i.e., nuclear power plants). EPA acknowledges, and many studies support the net reduction in life-cycle GHG emissions achieved by nuclear power when it displaces fossil fuel power. Notably, the GHG reporting rule does not include uranium enrichment facilities or nuclear power plants among the 41 industrial sectors required to report. Powertech requests that EPA update this discussion in light of the evidence presented in this comment.
C62	130	12.1	T	In lines 4-6, it appears that references to "Table 29" should be changed to "Table 36".
C63	133	12.2	C	In the 1st paragraph, the statement is made that Powertech proposes to store, use, and receive shipments of anhydrous ammonia (NH_3). Powertech does not propose to use ammonia at the Dewey-Burdock Project. Figure 3.2-6 in the approved NRC license application shows that sodium hydroxide will be used in the precipitation circuit instead. Table 3.2-1 in the approved NRC license application, which lists the process-related chemicals and quantities planned for the project, likewise does not include ammonia. Powertech requests removing mention of anhydrous ammonia from this paragraph.
C64	133	12.3	T	In the 2nd paragraph in this section, 1st line, Powertech requests correcting "Table 30" to "Table 38".
C65	134	12.5	C	The statement is made that "Because the Dewey Road is a county road, presumably it is maintained by Custer and Fall River Counties." These counties do maintain their respective portions of the Dewey Road. Moreover, Powertech executed an agreement with Fall River County to provide equipment, materials, and/or financial assistance to cover a portion of the total road maintenance cost for Fall River County roads used by Powertech during construction and operation (Powertech 2007; Exhibit 038). Powertech requests revision of the text to reflect this commitment.
C66	135	13.1	C	In the 1st sentence in this section, the statement is made that NRC evaluated the impacts of transporting "yellowcake slurry." Slurry is an intermediate product in the yellowcake production cycle that is dried to produce the final yellowcake product. This is described in Section 3.2.3.1 of the SER: "The CPP will also contain 2 vacuum

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				dryers for drying yellowcake slurry into its final powder form" (Exhibit 014 at p. 96). Powertech requests removing the word "slurry" since yellowcake slurry will not be shipped from the Dewey-Burdock Project site.
C67	135	13.1	I	In the 2nd line, Powertech requests changing "radioactive wastes" to "byproduct material" for consistency with other sections of this document (e.g., Section 12.2).
C68	140	14.3	E	A discussion is included about traditional subsistence practices such as hunting and wild plant gathering. Powertech suggests mentioning that the entire Dewey-Burdock permit area is either private land or BLM-managed federal land for which no public access roads exist. Therefore, there is no plausible use of lands within the proposed permit area for "traditional subsistence practices and the procurement of animals and plants for ritual, ceremonial, medicinal and other traditional needs." Powertech requests the addition of text to indicate that there is no public access to lands within the proposed permit area.
C69	144	15.3.1	C, I	In the 1st paragraph, the statement is made that the maximum liquid byproduct material quantity requiring disposal in the deep well injection option will be 197 gpm. As described in comment #C35 and as correctly listed in the 3rd paragraph in this section, the correct maximum volume of liquid waste injection during concurrent operations and aquifer restoration is 232 gpm. Powertech requests correcting the maximum liquid waste generation rate in the deep disposal well option from "197 gpm" to "232 gpm".
C70	144	15.3.1	C	In the 2nd paragraph, the statement is made that "Powertech proposed the construction of two Minnelusa injection wells, DW No. 1 in the Burdock Area and DW No. 3 in the Dewey Area." This does not appear to be consistent with the Class V permit application or Draft Class V Area Permit, both of which discuss up to four Minnelusa injection wells. Powertech requests updating the discussion to account for the four Class V injection wells included in the Class V Area Permit.
C71	144	15.3.2	C	In the 1st paragraph in this section, the statement is made that the maximum production of liquid byproduct material in the land application option will be 547 gpm. As described in comment #C36, the correct maximum volume of liquid waste injection during concurrent operations and aquifer restoration is 582 gpm. Powertech requests correcting the maximum liquid waste generation rate in the land application option from "547 gpm" to "582 gpm".
C72	145	15.3.4	C	Powertech requests clarifying that the 66 cubic yards of solid byproduct material is an annual estimate during operations. This comment also applies to Section 15.4.4.
C73	146	15.4.1	C	The statement is made that "Powertech proposes to manage aquifer restoration wastewater (i.e., liquid byproduct material) by treating the wastewater by reverse osmosis and reinjecting the treated water (i.e., permeate) back into the aquifer production zone undergoing restoration as described in SEIS Section 2.1.1.1.4.1" (emphasis added). Powertech requests clarification that the water withdrawn from the wellfields during groundwater restoration is not wastewater; it is treated by reverse osmosis (in the deep disposal well option), and the resulting reject is treated and disposed as wastewater. The water withdrawn from the wellfield and the treated water (permeate),

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Table 4. Draft Cumulative Effects Analysis Specific Comments (cont.)

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	Page	Section		
				while still considered 11e.(2) byproduct materials under NRC regulation, are not wastewater. Powertech requests modifying this sentence as follows: Powertech proposes to manage water pumped from the ISR wellfields during aquifer restoration ~~wastewater~~ (i.e., liquid byproduct material) by treating the ~~waste~~water by reverse osmosis and reinjecting the treated water (i.e., permeate) back into the aquifer production zone undergoing restoration as described in SEIS Section 2.1.1.1.4.1.
C74	146	15.4.2	E	In the 11th line in this section, the statement is made that "The NRC, the DENR and the EPA will require liquid byproduct material be treated prior to injection and treatment systems be approved, constructed, operated, and monitored to ensure release standards … are met." Powertech is not aware that EPA has any permit requirements for the land application of treated wastewater and requests clarification on this statement or removal of EPA from the list of agencies authorizing land application.
C75	147	15.5.1	C	Regarding the statement that Powertech expects to install 4,000 injection and production wells, please refer to comment #E1 in Table 3, which describes how Powertech currently estimates that approximately 1,461 injection wells and 869 production wells will be required over the life of the project.
C76	148	15.5.2	E	Powertech requests explanation of the reference for the statement that "The NRC will update this evaluation as part of the pre-operational analysis for the Dewey-Burdock Project Site, and certify that binding contractual arrangements and commitments for providing capacity for the proposed Dewey-Burdock ISR Project have been made with one or both of these landfill options prior to beginning construction."
C77	149	15.5.4	T	In the 2nd paragraph, last line, Powertech requests correcting "Section 14.3.1" to "Section 15.3.1".
C78	149	15.6	C	The statement is made that "Powertech will be required to have an agreement in place with White Mesa Mill for the disposal of solid by-product waste." Although White Mesa Mill has been identified as the preferred location for disposal of solid byproduct material, the NRC license does not require an agreement with any particular 11e.(2) byproduct material disposal facility. The requirements in NRC License Conditions 12.6 and 9.9, as stated on page 150 of this document, require Powertech to submit to the NRC a disposal agreement with a licensed disposal site before beginning operations and to maintain an agreement throughout operations. Powertech requests revising this sentence as follows: Before the NRC will authorize commencement of ISR operations, Powertech will be required to have an agreement in place with a facility that is licensed by the NRC or an NRC Agreement State to receive byproduct material, such as the White Mesa Mill ~~for the disposal of solid by-product waste~~.
C79	150	15.6	T	In the last paragraph in this section, 3rd line, Powertech requests deleting "76" in "76 License Condition 9.9 …"
C80	150	16.0	T	In the 1st paragraph in this section, 7th line, Powertech requests correcting "Table 32" to "Table 39".

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Table 5. Draft Environmental Justice Analysis Specific Comments

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
J1	18	3.4.1	T, I	Powertech requests correcting the following typographical error, for consistency with Table 8: The U.S. ~~mean~~ median death rate per 100,000 people due to unintentional injury is 50.8 ~~27.3~~.
J2	21	4.0	T	In the 1st paragraph under this section, last line, Powertech requests changing "Figure 2" to "Figure 1".
J3	21	4.0	T	In the 2nd paragraph, 1st sentence, Powertech requests removing "draft" in "The EPA is proposing to issue two UIC ~~draft~~ permits" since the draft permits have been issued.
J4	22	4.0	C	Waste generated on site will be 11e.(2) byproduct material regulated by NRC, not hazardous waste according to RCRA. The statement at the top of this page that the waste fluids will undergo "treatment to meet … hazardous waste standards" implies that hazardous fluid exists on site. Language in the draft permit already prohibits injection of hazardous waste into the Class V wells. Powertech requests removing references that characterize site waste as hazardous waste because this is not accurate; it is 11e.(2) byproduct material.
J5	22	4.0	E	In the 1st full paragraph on this page, the statement is made that "Certain types of UIC permits have been identified as priority permits, including permits for Class V deep injection wells and Class III ISR wells" by EPA Region 8 "due to the potential for significant public health or environmental impacts." In light of the evidence that there has never been an off-site impact to non-exempt groundwater after decades of uranium ISR operation in the U.S., Powertech requests explanation as the source of this "potential for significant public health or environmental impact."
J6	22	4.0	C	In the last paragraph in this page, 1st sentence, the statement is made that there will be "approximately 4,000 Class III injection wells." As described in comment #E1 in Table 3, Powertech currently estimates that approximately 1,461 injection wells will be required over the life of the project. Powertech requests updating this statement as follows: The project will involve the injection of lixiviant, consisting of injection-interval groundwater with added oxygen and carbon dioxide, into the uranium ore deposits targeted by 14 wellfields (shown in Figure 5) containing approximately 1,461 ~~4,000~~ Class III injection wells.
J7	22	4.0	C	In the last paragraph in this page, Powertech requests correcting the order of wellfield development as follows (refer to comment #F8 in Table 2 and #C25 in Table 4): It is the EPA's understanding that one wellfield in the Dewey Area and one wellfield in the Burdock Area will be active, while one wellfield in each area may be undergoing groundwater restoration and one wellfield in each area may be undergoing construction). Alternately, Powertech may develop either the Burdock or Dewey wellfields first, followed by those in the other area.
J8	23	4.0 Figure 5	A	Please refer to Attachment A-10 for specific comments related to the currently proposed aquifer exemption boundary and a proposed alternate solution. Powertech requests updating Figure 5 and the associated text to incorporate the proposed alternate solution.

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Table 5. Draft Cumulative Effects Analysis Specific Comments (cont.)

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	Page	Section		
J9	24	4.0 Table 12	C	Powertech requests the following updates to Table 12 to document the hearing process for the water appropriation permits and groundwater discharge plan. Powertech also requests clarification that the NPDES permit is associated with storm water pollution prevention and not surface discharge of any process wastewater. Powertech also requests correction of the specific NRC license type (refer to Exhibit 016). Requested changes are shown below.

Table 12. Additional State and Federal Permits Powertech is required to obtain.

Issuing Agency	Description	Status
South Dakota Department of Environment and Natural Resources (SDDENR)	Uranium Exploration Permit	Application submitted July 2008; approved by South Dakota Board of Minerals and Environment November 2008
	Scenic and Unique Lands Designation	Submitted August 2008; SDDENR determined lands described by applicant do not constitute special, exceptional, critical, and unique; February 2009.
	Large-Scale Mine Permit	Application submitted September 2012; deemed procedurally complete January 2013; recommended for approval April 2013; hearing held Fall 2013; further hearings and process postponed until the NRC and the EPA have completed their actions and the State Water Management Board has decided the water rights.
	Water Appropriation Permits • Madison • Inyan Kara	Applications submitted June 2012; recommended for approval November 2012; hearing held Fall 2013; further hearings and process postponed until the NRC and the EPA have completed their actions.
	Air Quality Permit	Application submitted November 2012; SDDENR determined that an operating air permit will not be required, February 2013.
	Groundwater Discharge Plan	Application submitted March 2012; recommended for approval December 2012; hearing held Fall 2013; further hearings and process postponed until the NRC and the EPA have completed their actions.
	National Pollutant Discharge Elimination System Water	Application not yet submitted.

Comment type key: **A** – alternate approach proposed; **C** – correct to be consistent with application, regulations or NRC license requirements; **E** – additional explanation requested; **I** – inconsistency (internally inconsistent between parts of Draft permit or supporting documents); **R** – remove; inconsistent with application, regulations or NRC license requirements; **T** – typographical error

Table 5. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
				Discharge Permit (Stormwater Discharge)
				U.S. Nuclear Regulatory Commission: Source and Byproduct Material License (10 CFR Part 40) — Submitted August 10, 2009. Final license issued April 8, 2014
				U.S. Bureau of Land Management: Plan of Operations — Application submitted August 2009; revised document submitted January 2011 and under review.
				US Army Corps of Engineers: Clean Water Act Section 404 Permit — Application not yet submitted
J10	25	5.0	C	The statement is made that "The EPA has included additional protective monitoring requirements to ensure that any ISR contaminants migrating out of the ISR wellfield are detected." Refer to Attachments A-6 through A-9, which describe how NRC license requirements are adequate to ensure protection of the non-exempt aquifers surrounding the wellfields. See also Attachment A-3, which proposes geochemical modeling using site-specific data as an alternate solution to post-restoration groundwater monitoring. Powertech requests changing this sentence as follows: The EPA has included additional ~~protective monitoring~~ requirements to conduct geochemical modeling using site-specific data to ensure that ~~any~~ ISR contaminants potentially migrating out of the ISR wellfield ~~are detected~~ will not cause a violation of MCLs or otherwise adversely affect human health outside of the exempted aquifer.
J11	27	6.2	T	In the 2nd paragraph, 3rd sentence on this page, Powertech requests correcting the following typographical error: These requirements will help ensure that there ~~these~~ will be no radiological health or environmental impacts above regulatory/health standards resulting from ISR activities at the Dewey-Burdock Project Site or from the transportation of yellowcake from the site.

Comment type key: **A** – alternate approach proposed; **C** – correct to be consistent with application, regulations or NRC license requirements; **E** – additional explanation requested; **I** – inconsistency (internally inconsistent between parts of Draft permit or supporting documents); **R** – remove; inconsistent with application, regulations or NRC license requirements; **T** – typographical error

Table 5. Draft Cumulative Effects Analysis Specific Comments (cont.)

No.	Draft Cumulative Effects Analysis		Type	Comment and Requested Modification
	Page	Section		
J12	30	10.0	C	In the first number list, the statement is made that monitoring requirements "to verify no ISR contaminants cross the aquifer exemption boundary" have been included to address downgradient private wells completed in the injection zone. As described in general comment #G-1, industry standard practices have prevented any off-site impact to non-exempt groundwater after decades of uranium ISR operations in the U.S. These include, but are not limited to, excursion monitoring/corrective actions, maintaining hydraulic control of each wellfield and conducting groundwater restoration in accordance with NRC or Agreement State requirements. To Powertech's knowledge, all currently operated ISR facilities are required to monitor private wells in proximity to their projects, yet comment #G-1 describes how no impacts to private wells have ever been documented. Therefore, no additional monitoring is needed to protect private wells in the vicinity of the Dewey-Burdock Project. See also Attachment A-3, which proposes to use geochemical modeling using site-specific data to verify that there will be no endangerment to non-exempt aquifers.

Comment type key: **A** – alternate approach proposed; **C** – correct to be consistent with application, regulations or NRC license requirements; **E** – additional explanation requested; **I** – inconsistency (internally inconsistent between parts of Draft permit or supporting documents); **R** – remove; inconsistent with application, regulations or NRC license requirements; **T** – typographical error

Attachment A

Proposed Alternate Solutions

List of Attachments

Attachment A Proposed Alternate Solutions

Attachment A-1. Proposed Alternate Solution to Core Sampling

Attachment A-2. Proposed Alternate Solution to Locating Down-gradient Compliance Boundary Monitoring Wells

Attachment A-3. Proposed Alternate Solution to Post-restoration Groundwater Monitoring

Attachment A-4. Proposed Alternate Solution to Establishing Baseline Water Quality for Down-gradient Compliance Boundary Monitoring Wells

Attachment A-5. Proposed Alternate Solution to Column Testing

Attachment A-6. Proposed Alternate Solution to Monitoring and Corrective Actions for an Excursion Detected in a Non-injection Interval Monitoring Well

Attachment A-7. Proposed Alternate Solution to Monitoring and Corrective Actions for an "Expanding Excursion Plume"

Attachment A-8. Proposed Alternate Solution to Monitoring and Corrective Actions for a "Remnant Excursion Plume"

Attachment A-9. Proposed Alternate Solution to Non-injection Interval Monitoring during Post-restoration Groundwater Monitoring

Attachment A-10. Proposed Alternate Solution to Aquifer Exemption Boundary Location

Attachment A-1

Proposed Alternate Solution to Core Sampling

Problem:

Part II, Section D.5 of the Draft Class III Area Permit would require Powertech to collect at least two cores from down-gradient locations within each wellfield prior to ISR operations. According to Part IV, Section D of the draft permit, these core samples would be tested using laboratory bench-scale column tests after groundwater restoration has been completed in the wellfield. Following are specific technical comments on the proposed permit conditions followed by a proposed alternate solution.

A-1-1: The requirement to collect core samples prior to operations adds unnecessary expense. Figure 6.1-1 in the approved NRC license application depicts the anticipated project schedule on a wellfield-by-wellfield basis. Depending on the wellfield size, the anticipated timeline from initial construction of an individual wellfield through operations, groundwater restoration, stability monitoring, and regulatory approval of groundwater restoration is about 5 to 9 years. Storing core samples from 14 wellfields for 5 to 9 years would cause undue financial burden on Powertech. Samples would have to be stored frozen and under a nitrogen atmosphere, which would be very expensive. In addition, the core samples would have been collected from a licensed source material facility and would be considered source material by NRC. Many laboratories do not have the appropriate licensing to store source material, and those that do are limited in the quantity that can be stored at any one time. This would restrict the number of potential storage facilities and drive up the cost even further.

A-1-2: The requirement to store core samples for 5 to 9 years risks compromising the integrity of the samples. The longer the storage duration, the greater the risk of a power outage, lab closure, or other event leading to a disruption of the controlled storage environment. Further, it is virtually impossible to collect core samples completely free of oxygen, and any entrained oxygen would have years to react with the material prior to testing.

A-1-3: As described in comment #A-5-5, limiting testing methods used to establish site-specific data to laboratory column testing is contrary to research cited in the Draft Class III Area Permit Fact Sheet and would not allow Powertech to take advantage of advancing research methodologies.

Proposed Alternate Solution:

As described in Attachment A-3, Powertech proposes to conduct geochemical modeling using site-specific data to evaluate the geochemical stability of the production zone and the possibility that contaminants could be released from the restored production zone to the aquifer exemption boundary and cause a violation of MCLs or otherwise adversely affect human health. Powertech requests that such site-specific data not be limited to column testing using core samples, since that would not allow Powertech to take advantage of advancing research methodologies. The geochemical modeling procedures and collection of site-specific data would be documented in the Closure Plan, which would be submitted to EPA for review and approval.

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In the event that core sampling is required, to solve the economic and technical feasibility issues associated with long-term storage and delayed testing of core samples, Powertech requests that the permit allow the flexibility to collect core samples at any time prior to conducting laboratory-scale bench testing and from any down-gradient locations within the aquifer exemption boundary that can be shown to be unaffected by ISR operations. This would include locations down-gradient from perimeter monitoring wells that never experienced an excursion during operation, which would be the vast majority of down-gradient wells based on the limited number of excursions that have occurred at operating ISR facilities. Collecting core samples as soon as practicable before testing would minimize the risk of the loss of core integrity and help ensure that the most representative *in-situ* conditions are used during testing. This would be consistent with various recent research studies on natural attenuation, none of which waited 5 to 9 years between core sample collection and laboratory testing.

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Attachment A-2

Proposed Alternate Solution to Locating Down-gradient Compliance Boundary Monitoring Wells

Note: As described in Attachment A-3, Powertech has proposed an alternate solution to post-restoration groundwater monitoring. In the event that this solution is not approved, this proposed alternate discusses proposed revisions to the location of down-gradient compliance boundary monitoring wells.

Problem:

Part IV, Section B.2 of the Draft Class III Area Permit would require down-gradient compliance boundary (DGCB) monitoring wells to be located "anywhere between the down-gradient portion of the wellfield perimeter monitoring well ring and the down-gradient wellfield boundary." Following are specific technical comments on the proposed permit conditions followed by a proposed alternate solution.

A-2-1: Requiring a new set of wells between the wellfield and down-gradient perimeter monitoring wells would cause an undue financial burden in terms of:

- Well installation (at least 200-300 additional wells would be needed)
- Pre-operational baseline sampling
- Pump testing to verify each well is in hydraulic communication with the wellfield and to estimate time of travel to each well under natural groundwater flow conditions
- The need for the down-gradient monitoring wells since there has never been a documented off-site impact to non-exempt groundwater (refer to general comment #G-1)

As described in comment #G-14, Powertech estimates that the additional incremental costs for the DGCB monitoring wells, post-restoration groundwater monitoring and other groundwater monitoring that would be required by the draft permit above and beyond that required by NRC license conditions and commitments in Powertech's approved NRC license application and Class III permit application are estimated to be approximately $30 million over the life of the project. This includes the costs of additional well construction and reclamation, labor and equipment to collect samples, costs of laboratory analytical work, geochemical modeling and core collection/column testing. It is based on very conservative durations of post-restoration groundwater monitoring (assuming pumping) and does not consider the added cost for maintaining financial responsibility and lease agreements for several additional years. These additional costs are not incurred by any existing or previously permitted uranium ISR project. This would represent a substantial increase in the overall life-of-mine project costs, equating to as much as a 10% increase in the unit cost of yellowcake produced, resulting in an economic burden and competitive disadvantage for Powertech. It should be added that these costs are highly dependent on the timeline for which groundwater restoration/stability is completed and approved by regulatory agencies and could increase significantly.

Of this cost, about $7 million is attributed to installing DGCB monitoring wells separate from the perimeter monitoring well ring, conducting baseline pump testing and water quality characterization prior to ISR operations and reclaiming the additional wells. In other words, it would cost about $7 million more to install the DGCB monitoring wells separate from the

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perimeter monitoring wells as compared to using the perimeter monitoring wells for post-restoration groundwater monitoring, if required.

A-2-2: Installing 200-300 additional DGCB monitoring wells would result in additional surface disturbance in an area that otherwise would be left almost entirely undisturbed throughout the project (i.e., the disturbance buffer area between the fenced wellfield pattern area and perimeter monitoring well ring). Assuming a typical disturbance area of 4,900 square feet (0.1 acre) per well (70-foot x 70-foot well pad), the total estimated additional disturbance is 22 to 34 acres. This represents 9 to 14% additional surface disturbance compared to the total estimated surface disturbance of 243 acres for the Class V injection well wastewater disposal option.

A-2-3: Installing what would amount to a second monitoring "ring" extending around a portion of each wellfield could be confusing to the public and various agencies for compliance monitoring purposes. For example, it could lead to questions as to why excursion monitoring is required at one set of wells but not the other. Also, ISR operators often install trend wells for internal (non-compliance) data gathering purposes between the wellfield pattern area and perimeter monitoring well ring, and those could be confused with DGCB monitoring wells by the public or regulators. The requirement could hinder Powertech's ability to install trend wells without having them construed as compliance wells.

A-2-4: Down-gradient compliance boundary monitoring wells are already required by NRC license requirements. Down-gradient perimeter monitoring wells must be installed prior to operations, sampled for baseline water quality, determined to be in communication with the wellfield through pump testing and monitored throughout ISR operations and groundwater restoration.

A-2-5: Powertech has identified areas with the highest uranium mineralization and will develop wellfields in those areas. However, it is likely that uranium mineralization exists outside of the wellfield boundaries that potentially impacts water quality. Such variations may cause difficulty in baseline characterization for additional DGCB monitoring wells because of proximity to the wellfield. These types of variability are much less likely to occur in the perimeter monitoring ring wells, since they will be 400 feet distant from the edge of the wellfield.

<u>Proposed Alternate Solution:</u>

Powertech requests the flexibility to use only perimeter monitoring wells for post-restoration groundwater monitoring, if required. This would have the following advantages compared to the requirement to install separate monitoring wells for this purpose:

1) No additional wells would need to be installed, which would save on drilling costs, surface disturbance, drill rig emissions, and other potential impacts related to significantly increasing the number of monitoring wells.
2) No additional pre-operational baseline sampling would be required, since the NRC license requires comprehensive characterization of the pre-operational water quality in perimeter monitoring wells. If EPA requires additional parameters to be analyzed, this could be done without collecting separate samples.

3) No additional pump testing would be required, since the NRC license and draft Class III permit conditions both require Powertech to demonstrate that perimeter monitoring wells are in hydraulic communication with the wellfield pattern area. In addition, the information gathered through pump testing would allow Powertech to estimate the average linear groundwater flow velocity and corresponding travel time to each DGCB monitoring well, as required by Part IV, Section B.6 of the draft permit.
4) Locating the DGCB monitoring wells at the perimeter monitoring ring would make it less likely that the wells would be impacted by an operational excursion, since they would be farther away from the wellfield. Moreover, the added distance would help ensure that only excursion parameters would potentially affect the well, since those parameters advance ahead of reactive constituents in any outwardly moving plume. Due to their highly mobile and less reactive nature, excursion parameters such as chloride would advance ahead of constituents of concern such as uranium. In general, the farther the distance of travel the greater the separation between the early warning constituents and contaminants that could cause a violation of MCLs or otherwise adversely affect human health. With distances of 400-500 feet at historically operated ISR facilities, this early warning system has proven effective for many decades. This is described in the NRC SEIS for the Moore Ranch ISR Project (Exhibit 017 at p. B-75):

> NRC does not define an excursion as contamination that moves into a USDW. An excursion is defined as an event where a monitoring well in overlying, underlying, or perimeter well ring detects an increase in specific water quality indicators, usually chloride, alkalinity and conductivity, which may signal that fluids are moving out from the wellfield. These specific water quality parameters are used because they are present in high concentrations in the ISR production fluids and are "conservative" in the sense that they move at roughly the same rate as the groundwater flow and are not significantly attenuated by adsorption or reduced by other factors. Therefore, they serve as early indicators of imbalance in the wellfield flow system to notify operators to take appropriate actions. The perimeter monitoring wells are located in a buffer region surrounding the wellfield within the exempted portion of the aquifer. These wells are specifically located in this buffer zone to detect and correct an excursion before it reaches a USDW. The overlying and underlying monitoring wells are located in aquifers that are separated from the ore zone by aquitards, which NRC has determined have sufficient thickness and integrity to prevent an excursion. However, in all cases, any excursion that lasts longer than 60 days is required to undergo corrective action to meet the drinking water protection standards in 10 CFR Part 40, Appendix A 5(B) 5. To date, no excursions from an NRC-licensed ISR facility has contaminated a USDW.

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5) Locating the down-gradient compliance monitoring wells farther from the wellfield would increase the opportunity for natural attenuation of impacted groundwater due to the longer distance.
6) Verification that the down-gradient compliance monitoring wells are not impacted by ISR solutions prior to post-restoration groundwater monitoring would be demonstrated through the excursion monitoring program that would be implemented from the onset of operations through groundwater restoration. As described in Section 3.3.2.1 of the Draft Cumulative Effects Analysis, "The monitoring well detection system described in Section 12.5 of the Class III Area Permit Fact Sheet is a proven method used at historically and currently operated ISR facilities." Existing NRC license conditions and Class III permit requirements would necessitate correcting any horizontal excursion long before the onset of post-restoration groundwater monitoring. As described previously, excursion monitoring is designed to provide early detection of non-hazardous indicator parameters (chloride, specific conductance and total alkalinity) before any contaminant reaches the well that could cause a violation of any primary drinking water regulation or otherwise adversely affect human health.
7) The buffer area between the perimeter monitoring well ring and the aquifer exemption boundary would provide flexibility to install additional down-gradient compliance wells if needed (e.g., if a statistically significant increase of a contaminant concentration were detected in a well during post-restoration groundwater monitoring).
8) The stated purpose of down-gradient monitoring is "to verify that no ISR contaminant will cross the aquifer exemption boundary" (e.g., Section 5.5 of the Draft Class III Area Permit Fact Sheet). The down-gradient perimeter monitoring wells are positioned to satisfy this purpose. Any well location that is down-gradient of the wellfield and within the aquifer exemption boundary would be suited to this purpose.
9) Since there has never been a documented occurrence of off-site impact to non-exempt groundwater in decades of U.S. ISR operations (general comment #G-1), there is no documented need for post-restoration groundwater monitoring down-gradient from the wellfield. Therefore, using existing down-gradient wells for this monitoring, if required, would not lessen any known risk of contamination.
10) Having only one set of down-gradient wells to monitor for potential excursions during operations and to verify that no contaminants will cross the aquifer exemption boundary and cause a violation of MCLs or otherwise adversely affect human health after groundwater restoration would significantly simplify the monitoring scheme and make it more understandable to members of the public, Powertech operators, and various regulatory agencies such as NRC, EPA, and SD DENR. It would also keep the monitoring well network consistent with other U.S. ISR operations, including those in EPA Region 8.

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Attachment A-3

Proposed Alternate Solution to Post-restoration Groundwater Monitoring

Problem:

Part IX, Section E of the Draft Class III Area Permit would require post-restoration groundwater monitoring for each wellfield after NRC approval that groundwater restoration has been successfully completed in accordance with the standards in 10 CFR Part 40, Appendix A, Criterion 5B(5). From a regulatory standpoint, the duplicative down-gradient compliance monitoring is not required, considering that the NRC license already requires Powertech to monitor down-gradient perimeter monitoring wells during ISR operations and groundwater restoration. From a human health standpoint, existing NRC license requirements have been demonstrated to be protective of human health and the environment (refer to General Comment #G-1). NRC's determination to this effect is found in the Dewey-Burdock Project SER (Exhibit 014 at 93):

> The staff conducted a detailed review and evaluation on the proposed ISR process and equipment presented in the application and found they are acceptable. License conditions will impose additional inspections, data collection, and reporting requirements on the applicant and provide additional assurance. The staff finds sections reviewed are consistent with the acceptance criteria of standard review plan Section 3.1.3 and comply with 10 CFR 40.32(c), which requires the applicant's proposed equipment, facilities, and procedures to be adequate to protect health and minimize danger to life or property. The staff also finds the proposed operations comply with 10 CFR 40.41(c), which requires the applicant to confine source or byproduct material to the location and purposes authorized in the license. Staff finds that the proposed ISR operations are consistent with NRC-accepted practices and are consistent with operations employed safely at existing NRC-licensed facilities. Based on commitments in the application and the license conditions identified above, NRC staff concludes that the applicant will be able to operate the ISR process in a manner that is safe for workers and the public health and safety and the environment.

From technical and economic standpoints, the proposed post-restoration groundwater monitoring requirements are infeasible based on the following comments.

A-3-1: Time of Travel under Natural Groundwater Conditions

Figure A3-1 shows the approximate configuration of Dewey Wellfield 1, as depicted in Plate 7.1 of the Class III permit application, along with the natural groundwater flow direction from Figure 5.2 in the Class III permit application. This figure shows that the natural groundwater

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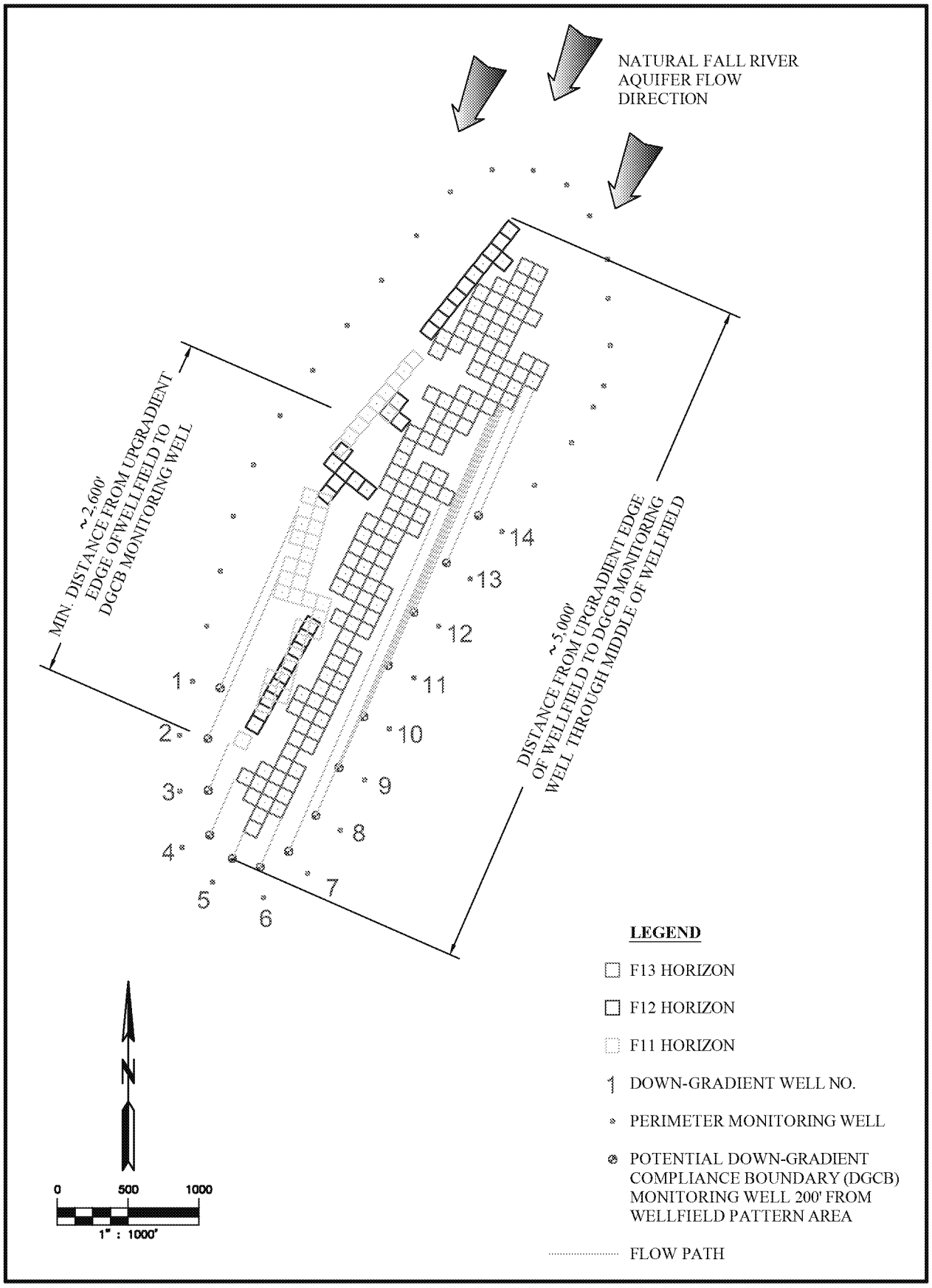

Figure A3-1. Dewey Wellfield 1 Potential Post-Restoration Groundwater Monitoring Wells.

gradient closely follows the longitudinal wellfield axis, much more so than what is depicted in Figure B4 in the Draft Class III Area Permit. The result is that the distance along the natural groundwater flow path between the wellfield and potential DGCB monitoring wells is much farther than the offset distance of the DGCB wells from the wellfield. This is illustrated in Table A3-1, which compares the distance along the natural groundwater flow path from the down-gradient edge of the wellfield to potential DGCB monitoring wells placed either 200 or 400 feet from the wellfield. The distance of groundwater travel ranges from 200 to 3,078 feet for wells placed 200 feet from the pattern area and 400 to 3,570 feet for wells placed 400 feet from the pattern area. Based on the average Fall River groundwater flow velocity of 6.1 feet per year, from Appendix 6.1-A (numerical groundwater flow model) of the approved NRC license application (Exhibit 018 at p. 6.1-A-11), it would take 33 to 505 years for groundwater to reach DGCB monitoring wells placed 200 feet from the wellfield or 66 to 585 years to reach wells placed 400 feet from the wellfield. Since the draft permit would require verification that the tracer reaches each DGCB monitoring well, it would be necessary to wait at least 500 years for groundwater to reach the most distant wells under natural groundwater flow conditions.

Table A3-1. Distance and Time of Travel to Down-gradient Wells from Dewey Wellfield 1

Well No.[1]	**Scenario A – Wells Placed 200 Feet from Wellfield (Halfway to Perimeter Monitoring Wells)**		**Scenario B – Wells Placed 400 feet from Wellfield (Perimeter Monitoring Wells)**	
	Down-Gradient Distance (feet)	**Time of Travel**[3] **(years)**	**Down-Gradient Distance (feet)**	**Time of Travel**[3] **(years)**
1	1,395	229	N/A[2]	---
2	1,270	208	N/A[2]	---
3	373	61	1,924	315
4	426	70	816	134
5	200	33	400	66
6	375	61	2,761	453
7	2,689	441	3,570	585
8	3,078	505	3,397	557
9	2,702	443	3,002	492
10	2,402	394	2,602	427
11	2,002	328	N/A[2]	---
12	1,585	260	N/A[2]	---
13	1,371	225	N/A[2]	---
14	972	159	N/A[2]	---
Average	1,489	244	2,309	379

Notes:

[1] Refer to Figure A3-1 for well locations.

[2] Well location is not down-gradient under natural groundwater flow direction.

[3] Time of travel calculated using 6.1 feet per year average Fall River aquifer groundwater velocity from Appendix 6.1-A (numerical groundwater flow model) of the approved NRC license application (Exhibit 018 at p. 6.1-A-11).

Given that Dewey Wellfield 1 would be about 4,700 feet long, the travel time from the upgradient edge of the wellfield to potential DGCB monitoring wells would be hundreds of years for any well. Figure A3-1 shows that the minimum distance would occur for potential DGCB monitoring well location 2, southwest of the wellfield. Even this minimum distance is more than 2,600 feet, corresponding to a travel time of 400 to 500 years. If it were necessary to inject a

tracer at the northernmost point in the wellfield, such that it would travel through the entire wellfield en route to a DGCB monitoring well, it would have to travel a distance of about 5,000 feet. This would take about 800 years under natural groundwater flow conditions. Clearly such travel times are technically infeasible regardless of how far the DGCB monitoring wells are placed from the wellfield.

A-3-2: Interference from Other Wellfields

EPA has not considered potential interference from nearby wellfields in the proposed post-restoration groundwater monitoring requirements. There are many instances of adjacent or nearby wellfields targeting the same aquifer or sub-aquifer unit for uranium recovery and groundwater restoration (e.g., Dewey Wellfields 1 and 3 both target the Lower Fall River and Burdock Wellfields 1, 2, 4, 6 and 7 all target the Middle/Lower Chilson). Since wellfield development would be phased, generally it would not be possible to conduct post-restoration groundwater monitoring under natural groundwater flow conditions for one wellfield until all ISR operations and groundwater restoration are completed in nearby wellfields targeting the same aquifer. This is illustrated in Appendix 6.1-A (numerical groundwater flow model) of the approved NRC license application (Exhibit 018 at pp. 6.1-A-101 through 102). The modeling results show that the potentiometric surfaces of the Fall River and Chilson aquifers will not recover to pre-operational levels until 1 to 2 years after the end of groundwater restoration in all wellfields. Prior to this time, the direction of groundwater flow in the vicinity of each wellfield will be influenced by operation and restoration bleed in other wellfields, which would impact which DGCB monitoring wells would actually be down-gradient of the wellfield. Conducting post-restoration groundwater monitoring, including tracer tests, prior to the project-wide end of ISR operations and groundwater restoration would be technically infeasible as natural groundwater flow conditions would not exist until the cone of depression for each wellfield has fully recovered to baseline (pre-ISR) conditions.

The draft permit also does not include any provisions to address instances where one wellfield occurs down-gradient from another wellfield targeting the same aquifer (e.g., Burdock Wellfield 2 is down-gradient from Burdock Wellfields 1 and 4; Burdock Wellfield 1 is also down-gradient from Burdock Wellfield 6). Occurrences of multiple wellfields in close proximity targeting the same aquifer make the proposed requirement to conduct post-restoration groundwater monitoring on an individual wellfield basis technically infeasible in certain situations. For example, a tracer test conducted at the down-gradient edge of Burdock Wellfield 4 would have to flow through Burdock Wellfield 2 before reaching a DGCB monitoring well. This could lead to confusion for Powertech and regulators regarding the approval status of a wellfield. For instance, if Burdock Wellfield 2 achieved regulatory approval for successful post-restoration groundwater monitoring, but later a statistically significant increase was observed during post-restoration groundwater monitoring of Burdock Wellfield 4 using the same DGCB monitoring well, would this reopen the approval status of Burdock Wellfield 2?

A-3-3: Lag between Tracer and Reactive Constituents

EPA has not considered the lag in the travel time between arrival of the conservative tracer (chloride) and reactive constituents (e.g., uranium). The Johnson and Tutu reactive transport model cited in the Draft Class III Area Permit Fact Sheet shows that it will take hundreds of years longer for a reactive constituent (affected by sorption) to reach a down-gradient perimeter monitoring well compared to a conservative constituent (no sorption). This lag does not seem to have been considered in the proposed requirement to conduct post-restoration groundwater monitoring for 2 years after arrival of the tracer. Unless the post-restoration groundwater monitoring period were extended for 100 years or more, there is very little chance that uranium and other reactive constituents would be detected according to research included in the fact sheet. Monitoring for hundreds of years would be technically and economically infeasible.

A-3-4: Reduced Attenuation Capacity if Pumping Is Used

As a potential remedy for hundreds of years of post-restoration groundwater monitoring under natural groundwater flow conditions, the draft permit would allow the flexibility to pump the DGCB monitoring wells to decrease the travel time. This is a technically infeasible alternative, since it could impact the ambient groundwater conditions and affect geochemical reactions that would attenuate the concentration of uranium and other reactive constituents in the buffer area between the wellfield and the aquifer exemption boundary. Pumping will change ambient conditions by pulling in groundwater not only from the wellfield but also from all other directions toward the pumped well. A change in pH or an increase or decrease in the carbonate concentrations could significantly impact the rate and extent of sorption reactions. Any type of pumping could change geochemical conditions, particularly for reductive-driven precipitation reactions. Pumping also may inadvertently introduce more oxygen or other oxidants along the flow path, and these oxidants may hinder formation of reduced minerals of uranium and other constituents or dissolve previously formed uraninite (UO_2). Effectively, EPA is proposing to pull any impacted groundwater remaining in the wellfield toward the aquifer exemption boundary in order to verify that no contaminants cross the aquifer exemption boundary. If a larger buffer area were available between the perimeter monitoring well ring and the aquifer exemption boundary, as originally proposed by Powertech, it might be feasible to pump groundwater to the perimeter monitoring well ring (see Attachment A-10 for a proposed alternate aquifer exemption boundary). However, since very little buffer area is provided, this alternative is technically infeasible and likely to result in contaminants being detected at DGCB monitoring wells that otherwise would attenuate under natural groundwater flow conditions.

A-3-5: Monitoring Is Unnecessary Due to the NRC Groundwater Restoration Approval Process

As described in Section 10.8.1 of the Class III permit application, Powertech will be required by NRC license condition and federal regulation to restore groundwater in each wellfield to satisfy the groundwater quality standards in 10 CFR Part 40, Appendix A, Criterion 5B(5). This requires restoration to baseline (background) or an MCL, whichever is higher, or an alternate concentration limit (ACL). These groundwater protection standards are designed to ensure that

the concentrations at the point of compliance (POC) – within the wellfield – protect human health and the environment at the point of exposure (POE) – at the aquifer exemption boundary. In particular, in order to approve an ACL application, NRC must determine that there will be no migration of recovery solutions outside of the aquifer exemption boundary. This is clarified in Appendix B of the NRC SEIS (Exhibit 008 at p. B-3, emphasis added):

> Before an ISR licensee is allowed to extract uranium, the U.S. Environmental Protection Agency (EPA) under 40 CFR 146.4 and in accordance with the Safe Drinking Water Act must issue an aquifer exemption covering the portion of the aquifer in which the uranium-bearing rock is located. EPA cannot exempt the portion of the aquifer unless it is found that "it does not currently serve as a source of drinking water" and "cannot now and will not in the future serve as a source of drinking water." Due to these criteria, only impacts outside of the exempted aquifer are evaluated. In most cases, the water in aquifers adjacent to the uranium ore zones does not meet drinking water standards. <u>The staff will not approve an ACL if it will affect any adjacent USDWs</u>.

More information on the ACL approval process is provided in the National Mining Association's comments on the previously proposed 40 CFR Part 192 rulemaking (Exhibit 009 at p. 13, emphasis added):

> In the event a licensee determines that an ACL is warranted, it is required to submit a wellfield-specific license amendment application to NRC for its review and approval, including a mandatory technical/safety and environmental review, production of a safety evaluation report (SER) and, at a minimum, an environmental assessment (EA), and notice of an opportunity for an administrative hearing before the Atomic Safety and Licensing Board (ASLB). An ACL is a site-specific (wellfield-specific), constituent-specific, risk-based human health standard that addresses thirteen specific requirements, including satisfaction of the ALARA standard, that the Commission will consider when evaluating an ACL license amendment application. Such a license amendment application is required to include an affirmative demonstration by the licensee that all of Criterion 5B(6) standards for ACLs have been met, including the ALARA standard, showing that the licensee has attempted to restore groundwater within the depleted ore body to primary or secondary restoration goals in Criterion 5B(5). <u>In accordance with ACL requirements, the licensee also must demonstrate that the values calculated for ACLs and the</u>

> geochemistry in the depleted ore body will be adequately protective of human health and the environment at the POE – i.e., will not pose a substantial present or future hazard.

A-3-6: A Second Round of Post-Restoration Groundwater Monitoring Is Unwarranted

Page 123 of the fact sheet describes the proposed requirement "to evaluate the potential impacts of groundwater located upgradient of the restored wellfield to mobilize any ISR contaminants ... to ensure that no rebound of contaminant concentrations occurs once the upgradient groundwater passes through the portion of the injection zone aquifer located down-gradient of the restored wellfield." This does not seem to consider that a cone of depression is maintained in each wellfield during ISR operations and groundwater restoration, which causes a continuous influx of groundwater from upgradient areas surrounding each wellfield into the wellfield. Due to this continuous intermixing of water within the restored wellfield with up-gradient water from the surrounding aquifer, there is no basis for an assumption that there would be a significant shift in geochemical conditions following groundwater restoration. Further, Powertech's NRC license allows for conducting groundwater sweep during groundwater restoration, which will draw native groundwater into the mining zone by pumping production wells without injection.

A-3-7: Post-Restoration Groundwater Monitoring Requirements Are Inconsistent with EPA Unified Guidance

The proposed post-restoration groundwater monitoring requirements are inconsistent with EPA Unified Guidance (Exhibit 019) with respect to the following issues:

a) The proposed monitoring requirements should use detection monitoring (i.e., to determine whether a release to groundwater with the potential to reach the aquifer exemption boundary occurs) rather than compliance/assessment monitoring (i.e., under the assumption that the monitoring location has been contaminated unless demonstrated to be significantly below the groundwater protection standards). As described on page 2-2 of the EPA Unified Guidance:

> Detection monitoring is the first stage of monitoring when no or minimal releases have been identified, designed to allow identification of significant changes in the groundwater when compared to background or established baseline levels.

EPA Unified Guidance further notes on page 2-10 that:

> Units under detection monitoring are initially presumed not to be contributing a release to the groundwater unless demonstrated otherwise.

This is exactly the scenario that would occur under post-restoration groundwater monitoring. The restored wellfield, approved by NRC as meeting applicable regulatory requirements, should be presumed to not be contributing a release to the aquifer exemption boundary unless demonstrated otherwise. Therefore, it is more appropriate to employ detection monitoring during post-restoration groundwater monitoring and only transition to compliance/assessment monitoring if a release of a contaminant is confirmed at a DGCB monitoring well.

b) Using the full suite of Table 8 parameters is inconsistent with EPA Unified Guidance for detection monitoring. As stated on page 6-9 of EPA Unified Guidance, the number of constituents should be limited in order to control the site-wide false positive rate (emphasis in original):

> To help balance the risks of false positive and false negative errors, the number of *statistically-tested* monitoring parameters should be limited to constituents thought to be reliable indicators of a contaminant release ... Some means of reducing the number of tested constituents is generally necessary to design an effective detection monitoring system.

Detection monitoring should focus on those constituents known to be present above background concentrations following groundwater restoration, which can only be determined following groundwater restoration. If post-restoration groundwater monitoring is required, Powertech requests flexibility to submit the parameter list to EPA for review and approval.

c) Use of an increasing trend for detection monitoring is inconsistent with EPA Unified Guidance, which does not recommend trend tests as formal detection monitoring tests. It describes how trend tests are more commonly "applied to background data prior to implementing formal detection monitoring tests" (page 6-41).

d) The proposed retesting strategy is similar to that used for excursion monitoring, in that the 2nd and 3rd samples must not show a statistically significant increase (SSI) in order for the 1st sample to be considered an error. Although this type of retesting strategy works for excursion monitoring, where the UCLs are set relatively high above baseline, it does not work for detection monitoring, where the detection limits would be set much closer to average background concentrations. This would likely lead to excessive false positives. Instead, EPA Unified Guidance recommends a "1-of-m" retesting strategy, in which "all *m* values must be larger than the prediction limit [or other test statistic] to be declared an exceedance" (page 6-44). Thus, if two samples were collected during retesting, all three samples (original plus two retesting samples) would have to exceed the detection limit in order to confirm an SSI.

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e) The retesting strategy also involves spacing samples only 48 hours apart using low-flow sampling techniques under the natural groundwater gradient (some 5-10 feet/year). While closely spaced sampling intervals work during ISR operations, when a relatively steep gradient would have caused the excursion compared to natural conditions, such intervals are not appropriate for detection monitoring under natural groundwater flow conditions, since they would not yield statistically independent samples. EPA Unified Guidance recommends retesting on the same sampling schedule as routine samples are collected (in this case quarterly or semiannually). Given that post-restoration groundwater monitoring would have to be carried out for decades at a minimum, there would be no need for closely spaced retesting.

A-3-8: Economic and Land Use Impacts Have Not Been Considered

Previous comments have shown that post-restoration groundwater monitoring could not feasibly start under natural groundwater flow conditions until after the end of project-wide ISR operations and groundwater restoration. They have also shown that the duration of post-restoration groundwater monitoring under natural groundwater flow conditions would be several decades at a minimum and more likely centuries. This would require Powertech to maintain lease agreements with all of the affected landowners for decades or centuries. It would also cause long-term access restrictions to lands occupied by ISR wellfields, access roads, and processing facilities. Section 12.5 of the Draft Cumulative Effects Analysis describes how added county road maintenance costs would be offset by increased tax revenues for Custer and Fall River counties; however, extending project-related vehicle traffic for well sampling and equipment maintenance for decades or centuries during post-restoration groundwater monitoring would add traffic and road maintenance needs without any tax revenues from uranium production. It would also require Powertech to maintain financial assurance for decades or centuries encompassing virtually the entire project (wellfields, processing facilities, pipelines, etc.), which would pose a significant financial hardship on the company and will likely make the entire project economically infeasible.

Proposed Alternate Solution:

Powertech requests the ability to prepare a Closure Plan that will be submitted to EPA for review and approval following NRC approval of groundwater restoration in the first wellfield. The Closure Plan will be updated or a new Closure Plan prepared for each subsequent wellfield. The Closure Plan will document groundwater restoration efforts, stability monitoring results, and NRC correspondence during the approval process. This would include documentation of NRC staff's rigorous review process for any ACLs to determine that the ACL does not pose a potential hazard to human health or the environment. As described in Appendix B of the NRC SEIS, this review process includes three risk assessments: 1) a hazard assessment to evaluate the radiological dose and toxicity of the constituents in question and the risk to human health and the environment; 2) an exposure assessment to examine the existing distribution of hazardous constituents, potential sources for future releases and potential consequences associated with the human and environmental exposure to the hazardous constituents; and 3) a corrective action assessment to identify the preferred corrective action to achieve the hazardous

constituent concentration that is protective of human health and the environment (Exhibit 008 at p. B-1).

Following the completion of each major wellfield area (i.e., the Dewey area or the Burdock area), the Closure Plan will be updated to include an integrated hydrologic and reactive transport (geochemical) model encompassing all restored wellfields in that area. The model will evaluate the geochemical stability of the production zone and the possibility of release of constituents from the restored production zone to the aquifer exemption boundary. Geochemical modeling using site-specific data would be far superior to post-restoration groundwater monitoring to demonstrate that there will be no threats to human health or the environment at the aquifer exemption boundary. Following are specific advantages to the requested modeling approach:

1) Geochemical modeling is the state of the art approach to demonstrate that there will be no detrimental impacts at the aquifer exemption boundary as part of the ACL application process to NRC for NRC-licensed ISR facilities. This is supported by the following statements by EPA in the previously proposed but discarded 40 CFR part 192 rulemaking:
    a. "Geochemical modeling can provide a defensible demonstration of an aquifer's natural capacity to maintain stability, which statistics alone cannot provide." (Exhibit 007 at p. 4172)
    b. "We believe that modeling ... can provide confidence that a geochemical environment exists to prevent uranium and other constituents from remobilizing ..." (Exhibit 007 at p. 4177)
    c. "Background data are also needed for geochemical modeling of the groundwater in the production zone and downgradient to support assessments of the natural capacity of the restored production area and downgradient portion of the exempted aquifer to maintain long-term stability of the restored wellfield." (Exhibit 007 at p. 4174)

    NRC staff also performed geochemical fate and transport modeling as part of its review of the groundwater restoration report for the Christensen Ranch Project (now part of the Willow Creek ISR Project) in Wyoming (Exhibit 020). The fact that NRC staff did not approve restoration as requested by the operator speaks to the detailed level of review that each ISR wellfield will undergo before receiving NRC approval of successful groundwater restoration.

2) The Closure Plan will provide the ability to evaluate various scenarios related to restoration activities, as well as monitoring strategies and remediation options if required. It would not require decades or centuries to determine whether groundwater restoration efforts are adequate to protect groundwater quality at the aquifer exemption boundary.

    For example, consider the scenario where post-restoration groundwater monitoring is required by EPA and that monitoring detects a statistically significant increase after 30 years of post-restoration groundwater monitoring. Based on comment #A-3-1, this would not be an unusual monitoring duration under natural groundwater flow conditions. It is very likely that it would necessitate restarting groundwater restoration efforts in that wellfield. Not only would this be a monumental task in terms of restarting equipment (pumps, pipelines, reverse osmosis units,

etc.) that had been idle for decades, but it would necessitate another 30 years of monitoring to see whether the additional groundwater restoration corrected the issue. This lag between adjusting the independent variable (groundwater quality within the wellfield) and determining the resulting change in the dependent variable (down-gradient water quality) makes post-restoration groundwater monitoring technically infeasible. Instead, geochemical modeling would provide predictive concentrations of all constituents of concern at the aquifer exemption boundary at the close of groundwater restoration. This would provide the EPA with the opportunity to review the model and determine whether groundwater would be adequately protected at the aquifer exemption boundary. This review would occur within months of the end of groundwater restoration stability monitoring instead of decades later. If it is determined that additional groundwater restoration efforts are needed or monitoring is required to verify model assumptions, those could be performed relatively quickly and additional assessment performed until EPA is satisfied.

3) Geochemical modeling is already required by the Draft Class III Area Permit. Part IV, Section D.1.e requires "geochemical modeling results demonstrating that no ISR contaminants will cross the down-gradient aquifer exemption boundary" if column testing does not prove that there will be a sufficient decrease in ISR contaminant concentrations. Based on the very narrow definition of what would entail adequate column test results (i.e., no statistically significant increase in the concentration of any constituent during the second set of tests), it is a virtual certainty that geochemical modeling would be required under the draft permit conditions. Further, the draft permit condition requires the model to demonstrate that no ISR contaminants will cross the down-gradient aquifer exemption boundary.

4) The modeling would be based on site-specific data. This could include a variety of data sources such as laboratory testing (e.g., batch sorption testing or column testing), field testing (e.g., cross-hole testing) or other methods. Due to the recent advancements in research technologies, Powertech does not propose to limit the data collection methods to any one method, but proposes to include site-specific data in the Closure Plan, which would be provided to EPA for review and approval.

Attachment A-4

Proposed Alternate Solution to Establishing Baseline Water Quality for Down-gradient Compliance Boundary Monitoring Wells

Note: As described in Attachment A-3, Powertech has proposed an alternate solution to post-restoration groundwater monitoring. In the event that this solution is not approved, this proposed alternate discusses proposed revisions to the establishment of baseline groundwater quality for down-gradient compliance boundary (DGCB) monitoring wells.

Problem:

Part IV, Section C and Part IX, Section B.3 of the Draft Class III Area Permit contain proposed monitoring requirements to establish and update baseline concentrations in DGCB monitoring wells. Following are specific technical comments on the proposed permit conditions followed by a proposed alternate solution.

A-4-1: Part IV, Section C.1 and Part IX, Section B.3 of the Draft Class III Area Permit would require Powertech to collect quarterly groundwater samples from the DGCB monitoring wells in order to establish initial baseline values before injection begins in the wellfield. Quarterly sampling prior to operations is inconsistent with NRC license requirements for other monitoring wells in the same monitoring interval. License Condition 11.3 in NRC license SUA-1600 requires Powertech to establish Commission-approved background groundwater quality for the ore zone and perimeter monitoring areas according to the commitments in Section 5.7.8 of the approved NRC license application. That section requires Powertech to collect four samples from each well spaced at least 14 days apart. NRC reviewed Powertech's justification for the 14-day sampling interval in Section 5.7.9.3.1 of the Safety Evaluation Report (SER) and determined that it complied with NRC guidance and regulations in 10 CFR Part 40, Appendix A, Criteria 5B(5), 7, and 7A (Exhibit 014 at p. 179). In order to comply with the NRC license and proposed Draft Class III Area Permit, Powertech would sample wells in the ore zone and perimeter monitoring well ring every 14 days for four samples. However, for the DGCB monitoring wells constructed in the same monitoring interval between these other wells, sampling would be required every quarter for four samples. The inconsistent sampling frequency for wells completed in the same aquifer unit would lead to confusion for Powertech, regulators and members of the public. It would also result in unnecessary economic hardship (e.g., delay the onset of production in each wellfield and increase the sampling cost).

A-4-2: Requiring quarterly pre-operational baseline samples is not necessary due to the lack of seasonal variation in groundwater quality in the Fall River and Chilson aquifers. Appendix N of the Class III permit application provides groundwater sampling results from Fall River and Chilson wells throughout the permit area and shows that there was no seasonal variation over the 1 year or more of data collected from each well. This is not surprising given the slow rate of groundwater movement in these bedrock aquifers and the distance to the recharge areas.

A-4-3: Requiring quarterly baseline samples from DGCB monitoring wells would unnecessarily delay the onset of ISR operations in each wellfield. Assuming at least four samples are required prior

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to operations in order to establish a statistically significant data set for each well, it would take at least 9 months to collect the DGCB monitoring well initial baseline samples prior to operations (four samples separated by 3 months each). This is 7.5 months longer than the minimum sampling duration for all of the other monitoring wells for each wellfield (four samples separated by 2 weeks each = 1.5 months). This would delay the onset of ISR operations in each wellfield by at least 7.5 months.

A-4-4: Requiring quarterly baseline samples from DGCB monitoring wells throughout ISR operations and groundwater restoration, in order to update baseline values prior to establishing final baseline concentrations for post-restoration groundwater monitoring, would result in an unnecessarily large number of samples and unnecessary economic hardship. Figure 6.1-1 in the approved NRC license application depicts the anticipated project schedule on a wellfield-by-wellfield basis. For larger wellfields, it may take 2.5 to 6 years to complete uranium recovery and groundwater restoration. This would result in 10 to 24 additional DGCB monitoring well samples beyond the 4 collected prior to operations, for a total of 14 to 28 samples for larger wellfields. This is significantly higher than the four samples required for all of the other monitoring wells. It is also above the 8 to 10 samples recommended by EPA Unified Guidance before running most statistical tests (Exhibit 019 at p. 5-3).

A-4-5: The proposed requirement to perform statistical trend analysis and establish final baseline concentrations at the onset of the stability monitoring period (Part IV, Section C.21) does not consider that there may be several years between the onset of stability monitoring and the regulatory approval of groundwater restoration. First, the stability monitoring period will extend for at least four quarters (the requirement in License Condition 10.6 of NRC License SUA-1600 is until *the most recent four consecutive quarters* indicate no statistically significant increasing trend that would lead to an exceedance above the respective standard in 10 CFR Part 40, Appendix A, Criterion 5B(5)) (Exhibit 016 at 7). Next, it may take anywhere from 6 months to several years to obtain regulatory approval of groundwater restoration, particularly if an ACL application is in involved, since that would necessitate a license amendment. The risk is that any natural variation in baseline groundwater quality within the DGCB monitoring wells would not be captured during the several years between the onset of stability monitoring and post-restoration groundwater monitoring.

A-4-6: As described in Attachment A-3, the use of compliance/assessment monitoring using the full suite of Table 8 parameters during post-restoration groundwater monitoring is inconsistent with EPA Unified Guidance, which recommends using detection monitoring using a shortened list of parameters and detection limits (prediction limits, tolerance limits or similar).

<u>Proposed Alternate Solution:</u>
Post-restoration groundwater monitoring is unnecessary and should not be required. If it is required, Powertech requests being allowed to collect pre-operational baseline samples from the DGCB monitoring wells at the same frequency as all of the other monitoring wells for each wellfield: at least four samples spaced at least 14 days apart. This is consistent with NRC license requirements and would avoid unnecessary delay in the onset of ISR operations in each wellfield. Site characterization baseline

sampling throughout the permit area demonstrated that there is no seasonal variation in water quality in the Fall River and Chilson aquifers, which is not surprising given that these are relatively deep, bedrock aquifers.

In order to avoid collecting an unnecessarily large number of samples in order to update baseline during ISR operations and groundwater restoration, Powertech requests the ability to collect annual samples from the DGCB monitoring wells during the baseline monitoring period (i.e., beginning at the onset of ISR operations). Furthermore, in order to avoid having several years of lag between establishing final baseline concentration limits and beginning post-restoration groundwater monitoring, Powertech requests the ability to continue annual sampling until NRC approval of groundwater restoration. Based on a typical anticipated duration of 3.5 to 8 years from the onset of ISR operations through regulatory approval of groundwater restoration, this would yield at least 4 to 8 additional samples, or 8 to 12 total samples used to establish final baseline concentration limits for post-restoration groundwater monitoring. This is consistent with the 8 to 10 samples recommended by EPA Unified Guidance.

Finally, Powertech requests the ability to submit a groundwater detection monitoring plan for post-restoration groundwater monitoring, if required, that would specify the parameters, retesting strategy and detection limits (prediction limits, tolerance limits, or similar) consistent with EPA Unified Guidance.

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Attachment A-5
Proposed Alternate Solution to Column Testing

Problem:
Part IV, Section D of the Draft Class III Area Permit would require laboratory column testing to verify the attenuation capability of the down-gradient injection zone aquifer. Following are specific comments that describe how the proposed column testing requirements are technically infeasible followed by a proposed alternate solution.

A-5-1: The proposed column testing methods are structured as "pass/fail" tests. If there is "an insufficient decrease in ISR contaminant concentrations after passing through the columns" or if there is an increase in any constituent concentration after passing the upgradient water through the columns, then Powertech would be required to submit a groundwater treatment plan and perform geochemical modeling. This approach is inconsistent with methods used in recent studies on natural attenuation of uranium at ISR facilities, including both Raymond Johnson papers cited in the fact sheet. In those cases, laboratory testing (batch sorption testing, column testing, or other methods) was used to establish site-specific inputs for geochemical modeling (i.e., sorption site density). Those studies recognize that one core sample would not have the attenuation capacity to prove that there is a "sufficient decrease in contaminant concentrations after passing through the columns" without geochemical modeling. Instead, the laboratory studies are used to inform geochemical modeling, which would be used to determine whether there is adequate natural attenuation capacity down-gradient to prevent contaminants from crossing the aquifer exemption boundary and cause a violation of any primary MCLs or otherwise adversely affect the health of persons.

There are few commercial laboratories set up to perform these types of attenuation studies. Many can perform bulk and sometimes even column leach tests that will release constituents from a soil or sediment. These typically use aggressive extractions but few can be relied upon for these more subtle procedures. These tests require an almost research laboratory setting where different approaches are developed over time until some method is selected. These types of programs can require years before a consensus is reached among the mining company, its consultants, the laboratory and the various regulatory agencies involved. Therefore, it is not appropriate or possible to specify the exact test procedures within the permit conditions.

Another issue with a "pass/fail" test is that subtle changes in composition can greatly affect the conclusion. For example, changes in pH due to exposure of the leaching solution to the atmosphere or even to an alternative partial pressure of carbon dioxide gas used during the test can result in a corresponding change in the sorption behavior. Also, water to rock proportions in the test can change conclusions. Furthermore, in the case of sorption, these chemical reaction isotherms are never linear. Elevated concentrations may only show slight attenuation in the short flow path within the column, but over distance the concentrations decrease and the percentage of sorped constituent increases such that the final concentrations decrease rapidly. Finally, what happens if some constituents are significantly attenuated and other show slight to no attenuation — is that a failed test?

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A-5-2: The proposed requirement to conduct column testing using unrestored groundwater taken from a wellfield before groundwater restoration has begun is unreasonable given that the NRC license conditions and federal regulations require Powertech to conduct groundwater restoration until 10 CFR Part 40, Appendix A, Criterion 5B(5) standards are met. Moreover, Powertech has committed in its approved NRC license application (Sections 6.1.8.1 and 6.1.8.2) to evaluate potential areas of flare or hot spots during active groundwater restoration and stability monitoring. This is described in Section 6.1.8.2 (Exhibit 010 at p. 6-9a) as follows:

> For one or two parameters, localized, elevated concentrations above the restoration criteria may remain in the production zone following restoration. These isolated, residual elevated concentrations are referred to as "hot spots." The primary indicator of a hot spot for a specific constituent or parameter will be the mean production zone concentration plus two standard deviations. For pH, the indication of a hot spot will be plus or minus two standard deviations. If a constituent or parameter at a production zone baseline sampling well exceeds that criterion during the stability period, the location of the well will be identified as a hot spot. Once a hot spot is identified, additional evaluation will be conducted to determine potential impacts that such a hot spot could have on water quality outside of the exempted aquifer. The additional evaluation may include collection of additional water samples, analysis of added parameters, trend analysis, or flow and transport modeling. Based on the results of the evaluation, additional stability monitoring or restoration may be conducted as needed to ensure the protection of water quality outside the exempted aquifer. If hot spots are sufficiently demonstrated not to have the potential to affect water quality outside of the exempted aquifer and the restoration criteria are otherwise met without increasing trends, then no additional action will be taken and Powertech (USA) will submit supporting documentation to the regulatory agencies showing that the restoration parameters have remained at or below the restoration standards and will request that the well field be declared restored.

Given that any hot spots will be subject to additional evaluation of potential impacts outside of the exempted aquifer, there is no plausible scenario by which unrestored groundwater would be representative of conditions after NRC approval of groundwater restoration.

A-5-3: The requirement to use actual wellfield groundwater, rather than allowing the flexibility to use synthesized groundwater approximating field conditions, is contrary to many recent studies on natural attenuation that use synthesized groundwater (e.g., the Raymond Johnson papers cited in the Fact Sheet). Maintaining the stability of solutions even over short periods of time is

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difficult and requires special procedures. A restored wellfield groundwater solution is apt to be sensitive to redox changes. Collection and storage of this water will require extreme care to assure that oxygen is not introduced along the way. The "unrestored wellfield groundwater, taken from a wellfield in which uranium recovery has been initiated but before groundwater restoration as begun" is equally difficult to maintain. If this solution is dominantly lixiviant, it will contain excess uranium that will swamp the sorption sites on the small amount of core. Furthermore, even if it has undergone some dilution, it is likely to be oversaturated with respect to carbonate minerals, which will precipitate and change the composition of the solution. Inclusion of any additive to limit mineral formation would void any other result from the tests. Synthetic solutions can eliminate some of the stability problems if prepared immediately before a test, but some issues such as redox conditions are difficult to eliminate. This variability makes it impractical to conduct laboratory bench-scale testing as "pass/fail" tests.

A-5-4: As described in Attachment A-1, core samples for column testing would need to be collected prior to ISR operations and stored for 5 to 9 years or more, until regulatory approval of groundwater restoration. A proposed alternate approach to core sample collection is presented in Attachment A-1.

A-5-5: Limiting laboratory testing methods to column testing is contrary to the research cited in the Draft Class III Area Permit Fact Sheet. Johnson et al. used batch sorption testing rather than column testing for similar testing, yet the flexibility is not provided in the draft permit conditions to allow batch sorption testing or another approved laboratory testing method. At this time, much research related to the fate and transport of constituents from ISR operations is ongoing through research by Johnson, South Dakota School of Mines and Technology, Los Alamos National Laboratory, University of Wyoming, Colorado State University and others. For example, Los Alamos National Laboratory and others recently completed cross-hole evaluation of the natural attenuation of uranium, selenium and other constituents in order to evaluate the ability of the down-gradient aquifer to geochemically attenuate contaminant transport after mining (Exhibit 021). Limiting laboratory testing to prescriptive column testing requirements would not allow Powertech to take advantage of advancing research methodologies.

A-5-6: The prescriptive testing approach fails to consider the difficulties in the actual implementation of these tests when the findings will have such a bearing on closure costs. Maintaining redox conditions, particularly if reducing conditions are required, can be very difficult. The sorption experiments described in the Johnson et al. efforts are relatively simple, but they only consider one geochemical process, mainly simple surface complexation reactions for uranium only. The experiments used a very specific targeted research approach. To fully evaluate the geochemical setting requires various tests that represent contradictory conditions. For example, sorption as described in the Johnson et al. papers assumes uranyl ([U(VI)] and oxidized iron hydroxides as the substrate, whereas precipitation of uranium mineral typically assumes a lower valence, usually the U(IV) form. Maintaining low Eh conditions requires another level of effort, and it is unlikely that any commercial laboratory can demonstrate that these conditions can be maintained. Even specialized research laboratories struggle with these issues and typically resort to glove boxes which will tend to limit the size of the column. This creates additional issues

regarding the scale of the column tests and the ability to extrapolate these results to an entire wellfield. There are a multitude of geochemical processes that cannot be addressed in column testing alone. For example, co-precipitation reactions (radium into barium sulfate) are likely to occur in small increments over large distances and take considerable time (Grundl and Cape 2006; Exhibit 022). These column tests completely fail for those conditions, and only certain types of models can be applied to evaluate such slow, large flow path processes.

A-5-7: Limiting the test method to any laboratory method would eliminate the possibility of using field-scale testing to determine geochemical modeling input parameters. This contradicts recent research by the Los Alamos National Laboratory and others, where they used cross-hole tests in an unmined ISR wellfield to determine the attenuation capacity for uranium and other constituents (Exhibit 021).

Proposed Alternate Solution:

As described in Attachment A-3, Powertech requests the ability to prepare a Closure Plan that would include geochemical modeling using site-specific data to demonstrate that no ISR contaminants will cross the aquifer exemption boundary and cause a violation of MCLs or otherwise adversely affect human health. Powertech requests the ability to use column testing, batch sorption testing, or any other approved laboratory or field testing method to provide the site-specific inputs for geochemical modeling, should they be needed to support geochemical modeling efforts. Such tests would not be used as a stand-alone demonstration of the down-gradient natural attenuation capacity, but would be an integral part of the geochemical modeling. Powertech requests the flexibility to use synthesized groundwater representative of parameters and concentrations in the restored wellfield for such testing, should it be needed to support geochemical modeling efforts. Powertech also requests that rather than using unrestored groundwater for testing, geochemical modeling would evaluate any hot spots identified during stability monitoring, in accordance with NRC license requirements.

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Attachment A-6
Proposed Alternate Solution to
Monitoring and Corrective Actions for an Excursion Detected in a
Non-injection Interval Monitoring Well

Problem:
Part IX, Section C.3.f of the Draft Class III Area Permit includes additional monitoring and corrective action requirements for an excursion detected in a non-injection interval monitoring well beyond those reviewed and approved by NRC. Following are key differences between the proposed Draft Class III Area Permit conditions and the approved NRC license requirements:

1) License Condition (LC) 11.5 of NRC license SUA-1600 requires Powertech to increase the sampling frequency of a well with a confirmed excursion to at least once every 7 days for the excursion indicator parameters (chloride, specific conductance and total alkalinity) (Exhibit 016 at 11). In contrast, Part IX, Section C.3.f.i would require analysis of the full suite of Table 8 parameters every 7 days for a non-injection interval monitoring well with a confirmed excursion.
2) LC 11.5 requires corrective actions for a confirmed excursion until all indicator parameters are below the upper control limits (UCLs) for three consecutive weekly samples. In contrast, Part IX, Section C.3.f.ii would require restoration of a non-injection zone aquifer well impacted by an excursion back to baseline concentrations for all constituents. Section C.3.f.iii would further require a trend analysis to determine whether there is an increasing concentration of any excursion parameter or baseline constituent, in which case Powertech would be required to sample the nearest unimpacted wells and analyze samples for the full suite of Table 8 baseline parameters.
3) LC 11.5 requires Powertech to terminate injection or increase the financial assurance in an amount to cover the full third-party cost of correcting and cleaning up the excursion if any excursion is not corrected within 60 days. In contrast, Part IX, Section C.3.f.iv would require Powertech to sample the nearest unimpacted wells and analyze samples for the full suite of Table 8 baseline parameters for a non-injection interval excursion not corrected within 60 days.
4) LC 11.5 requires Powertech to implement corrective actions for confirmed excursions that may include but are not limited to those specified in Section 5.7.8 of the approved NRC license application. In contrast, Part IX, Section C.3.f.vi indicates that if pumping is used to correct the excursion, then the pumping rate must be low enough to result in less than 1 foot of drawdown at the well being pumped.

Specific comments on the proposed permit conditions are presented below, followed by a proposed alternate solution.

A-6-1: The proposed additional corrective actions for an excursion in a non-injection interval monitoring well are unnecessary in light of NRC license requirements. As stated on page 116 of the Draft Class III Area Permit Fact Sheet, "The monitoring well detection system described in Section 12.5 is a proven method used at historically and currently operating facilities." Despite this acknowledgement and despite the fact that NRC has primary regulatory jurisdiction over excursion monitoring at ISR facilities, EPA is proposing to expand the excursion monitoring and corrective action requirements beyond those required for any other ISR facility in the U.S.

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Powertech requests deletion of these additional monitoring requirements because there is no justification for imposing them, and they are not required for other Class III permits for ISR facilities in the U.S., including within EPA Region 8.

A-6-2: Whereas the NRC license requirements do not require monitoring for anything other than the excursion detection parameters that provide early warning of potential to impact non-exempt groundwater, the proposed permit conditions would require monitoring the full suite of Table 8 parameters, many of which are reactive and will not travel as quickly as the excursion monitoring parameters (refer to Attachment A-3 for a discussion of the lag time in uranium transport compared to a conservative indicator parameter like chloride). Monitoring for these parameters would not increase the effectiveness of the early warning system to detect the potential to impact non-exempt groundwater.

A-6-3: Almost all of the parameters in Table 8 of the draft permit take significantly longer than 1 week for laboratory analysis. Other than the excursion monitoring parameters and pH, which Powertech will be able to analyze in its on-site laboratory, all other constituents will need to be analyzed by a third-party contract laboratory. According to Inter-Mountain Laboratories, an EPA-accredited laboratory in Sheridan, Wyoming, the standard turn-around time is 20 business days (about 1 month) for the full suite of Table 8 parameters. Even if a rush is placed on the analysis at a premium cost, the minimum turn-around time is 10 business days (about 2 weeks) for radiological constituents. For example, lead-210 requires 4 days to process and prepare the sample, 5 days for crystal ingrowth, 1 day to count radiological activity and 1 day to perform QA/QC and report (Exhibit 013). Therefore, it is technically infeasible and impractical to sample weekly for parameters that take 1 month to analyze. In contrast, Powertech will have the ability to analyze excursion parameters almost immediately on site, which again makes monitoring for these constituents better suited for an early warning system.

A-6-4: The NRC license requirement to correct an excursion such that three consecutive weekly samples are below the UCLs is a proven method of corrective action that has been used at domestic ISR facilities for decades without any evidence that an off-site impact to groundwater has occurred. As described in Attachment A-7, NRC staff evaluated historical records from NRC-licensed ISR facilities and determined that no excursion "had resulted in environmental impacts" (Exhibit 001 at 2). Moreover, LC 11.5 of NRC license SUA-1600 indicates that "the licensee remediate the excursion to meet groundwater protection standards as required by LC 10.6 for all constituents established per LC 11.3." Thus, NRC license conditions already require remediation of all excursions to satisfy federal groundwater protection standards in 10 CFR Part 40, Appendix A, Criterion 5B(5).

A-6-5: The statement is made in Part IX, Section C.3.f.ii that "The Permittee shall restore a non-injection zone aquifer impacted by an excursion of injection zone fluids back to baseline concentrations." EPA is attempting to redefine what constitutes a remediated excursion as being one that is restored to baseline. This is inconsistent with the NRC definition of a remediated excursion and would lead to confusion for Powertech, regulators and the public, not to mention creating unnecessary economic hardship.

A-6-6: Unlike DGCB monitoring wells, the baseline concentrations for which would be updated prior to post-restoration groundwater monitoring, the baseline concentrations for non-injection interval monitoring wells would not be updated during operations. Therefore, comparing concentrations on a constituent-by-constituent basis with baseline values established years earlier could lead to false positives caused by natural variation in groundwater quality. For this reason it would be better to compare excursion monitoring parameters with UCLs, as required by NRC license requirements.

A-6-7: Aside from the alluvium (if present), non-injection interval monitoring wells all would be completed within the exempted aquifer (i.e., within sub-units of the Fall River or Chilson aquifer). Requiring restoration to baseline within the exempted aquifer is inconsistent with what is required for the production zone and is not necessary to prevent contamination outside of the exempted aquifer, since Powertech would be required to cease injection or post additional financial assurance for remediation of the excursion in the event that an excursion is not corrected within 60 days. In any event, Powertech would be required to remediate all excursions prior to site closure. EPA has provided no evidence that an isolated excursion in a non-injection interval monitoring well, remediated according to NRC license requirements, has the potential to impact groundwater quality outside of the exempted aquifer.

A-6-8: Powertech could find no justification in the draft permit or fact sheet for limiting the pumping rate to an amount that would result in less than 1 foot of drawdown at the pumped well, if pumping is used for corrective action. For the alluvial aquifer in particular, which is under water table conditions, the ability to prevent the outward migration of impacted groundwater while limiting drawdown in the pumped well to 1 foot would not be technically feasible. Similarly, for bedrock aquifers, an absolute and very small limit on the drawdown could inhibit Powertech's ability to correct the excursion and prevent the outward spread of impacted groundwater. It is not feasible for EPA to determine an arbitrary level of drawdown required to control an excursion. The amount of drawdown required would depend on: (1) the pumping rate required, (2) well completion efficiency, (3) formation transmissivity and (4) residual effects from offset injection and production wells.

<u>Proposed Alternate Solution:</u>

Powertech requests the following alternate solution for monitoring and corrective actions for an excursion in a non-injection interval monitoring well:

1) No change would occur in the procedures for a confirmed excursion beyond what has been reviewed and approved by NRC, as long as the excursion is corrected within 60 days. This includes notifying NRC and EPA, sampling the well with a confirmed excursion for excursion parameters at least once every 7 days, and performing corrective actions as specified in the NRC license. Correcting an excursion within 60 days such that three consecutive weekly samples are below the UCLs is a proven method of preventing contamination outside of the exempted aquifer and is at least as protective as the methods proposed by EPA, which are impractical and technically infeasible due to relatively long laboratory analysis times and the potential for false positives caused by not updating baseline concentrations in non-injection interval monitoring wells.

2) Three changes are proposed if an excursion in a non-injection interval monitoring well is not corrected within 60 days:
    a. The State of Wyoming requires analysis of a comprehensive list of parameters only if an excursion is not corrected in a timely manner (Exhibit 004 at p. 22). A second sample must be analyzed for the same list of parameters after the excursion is corrected. Powertech would be willing to add this requirement to help EPA determine that there is no potential for impacts outside of the exempted aquifer.
    b. If the excursion occurs in the alluvium, which is not part of the exempted aquifer, Powertech proposes to restore the water quality consistent with baseline concentrations or to an MCL, whichever is greater. Powertech does not propose to conduct the trend analysis in Part IX, Section C.3.f.iii (second number iii), since it is unnecessary given the stringent requirement to restore all constituents to baseline groundwater protection limits.
    c. If the excursion occurs within the exempted aquifer, Powertech proposes to conduct an analysis of the potential to impact groundwater quality outside of the exempted aquifer considering site-specific conditions, corrective actions and monitoring results.

Attachment A-7
Proposed Alternate Solution to
Monitoring and Corrective Actions for an "Expanding Excursion Plume"

Problem:
Part IX, Section C.4 of the Draft Class III Area Permit proposes additional monitoring and corrective action requirements for an "expanding excursion plume." Following are technical comments regarding the technical feasibility of the proposed requirements, followed by a proposed alternate solution.

A-7-1: EPA has presented no evidence in the draft permit or fact sheet that "expanding excursion plumes" have occurred at other ISR facilities; therefore, there is no need to modify the proven excursion monitoring system that has been reviewed and approved by NRC. As stated on page 116 of the Draft Class III Area Permit Fact Sheet, "The monitoring well detection system described in Section 12.5 is a proven method used at historically and currently operating facilities." Despite this acknowledgement, EPA is proposing to expand the excursion monitoring and corrective action requirements beyond what is required for any other ISR facility in the U.S., including those within EPA Region 8.

A-7-2: There can be no justification for monitoring to address an expanding excursion plume. During uranium ISR operations and groundwater restoration, when excursion monitoring would occur, an inward hydraulic gradient would be present within each wellfield, such that the down-gradient flow direction from all perimeter monitoring wells would be inward toward the wellfield. The proposed requirement to install additional "down-gradient" wells is confusing and inconsistent with hydraulic conditions during operations, when the greatest potential for an excursion would occur.

A-7-3: Installing and sampling additional wells between the perimeter monitoring well ring and the aquifer exemption boundary would actually draw more impacted groundwater toward the aquifer exemption boundary. The well development process involves water withdrawals during air lifting, swabbing or pumping (see Section 11.4 of the Class III permit application). This development process would create local perturbations in the potentiometric surface established during operations and would have the potential to draw ISR solutions out of the wellfield. Water collected during sampling the additional wells would compound the impact. This makes the additional well installation requirements less protective than current NRC license requirements.

A-7-4: Installing additional monitoring wells during ISR operations without pump testing to verify that the wells are in hydraulic communication with the production interval could lead to difficulty in demonstrating that the wells are suited for their intended purpose. However, pump testing would not be technically feasible during ISR operations, where the cone of depression within the wellfield would have to be allowed to recover to perform such a test. This would result in loss of hydraulic control for the wellfield and increase the risk of contaminant migration. It would also violate NRC license requirements to not maintain a cone of depression during ISR operations and groundwater restoration.

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A-7-5: The excursion monitoring system is designed to provide an early warning of potential contaminant migration using non-hazardous indicator parameters that are not significantly attenuated in concentration or travel time compared to the groundwater flow. As such, they are designed to detect the leading edge of an excursion plume emanating from the wellfield. NRC license requirements to immediately correct an excursion (typically by adjusting the wellfield balance to draw solutions back into the wellfield) are designed to correct the imbalance before any contaminants that could cause a violation of MCLs or otherwise adversely affect human health reach the perimeter monitoring well. This is confirmed through weekly sampling until three consecutive samples are below the UCLs. Since the leading edge of an excursion plume would be detected and remediated under NRC license requirements, there is no mechanism for an excursion plume to expand beyond the perimeter monitoring well ring under NRC license requirements.

A-7-6: If an excursion persists for 60 days or more, License Condition 11.5 of NRC license SUA-1600 would require Powertech to terminate injection of lixiviant into the wellfield until the excursion is corrected or increase the financial assurance in an amount to cover the full third-party cost of correcting and cleaning up the excursion. This existing requirement will ensure that an expanding excursion plume is addressed and corrected.

A-7-7: Whereas the NRC license requirements focus on monitoring for the excursion monitoring parameters that provide early warning of the potential to impact non-exempt groundwater, the proposed draft permit would require monitoring the full suite of Table 8 parameters, many of which are reactive and will move more slowly and at reduced concentrations compared to the excursion monitoring parameters. Monitoring for such additional parameters would not increase the effectiveness of the early warning system to detect the potential to impact non-exempt groundwater.

A-7-8: Other than the excursion monitoring parameters, all of the parameters in Table 8 of the draft permit take significantly longer than 1 week for laboratory analysis. As described in comment #A-6-3, the standard turn-around time is 20 business days (about 1 month) for the full suite of parameters, and the minimum turn-around time is 10 business days (about 2 weeks). Therefore, it is technically infeasible and impractical to sample weekly for parameters that take 1 month to analyze. In contrast, Powertech will have the ability to analyze excursion parameters almost immediately on site, which again makes monitoring for these constituents better suited for an early warning system.

A-7-9: EPA has not included any provisions for performing adequate baseline characterization for the new down-gradient wells. Unless adequate baseline characterization is performed on any new monitoring wells (i.e., at least four samples per NRC license requirements), there is no way to verify whether any elevated concentrations in a new monitoring well are caused by an excursion or are attributed to natural variation in the monitoring interval. This is particularly true for situations where one wellfield is upgradient from another. Installing a new well at a down-gradient location could place the well within a mineralized horizon, which has the potential to result in local variations in groundwater quality, as acknowledged in the draft permit.

A-7-10: Powertech is required by NRC license requirements to sample all perimeter monitoring wells every 2 weeks during ISR operations for the excursion monitoring parameters, which are designed to provide early warning of potential impacted groundwater. Thus, if a perimeter monitoring well had a confirmed excursion, all of the other perimeter monitoring wells, including adjacent wells, would be sampled every 2 weeks. This would allow Powertech to determine the extent of groundwater impacts, develop corrective action measures, monitor implementation of the measures and demonstrate excursion control consistent with the NRC license requirements without installing additional wells or performing the additional monitoring proposed in the draft Class III permit.

Proposed Alternate Solution:

No additional monitoring requirements are needed for a potential expanding excursion plume beyond those required by the NRC license. Powertech requests removal of the proposed additional monitoring and corrective action requirements due to the following reasons:

1) The excursion monitoring program reviewed and approved by NRC is a proven method of detecting excursions and will provide timely detection and correction of a potential expanding excursion plume. This is documented in a 2009 memorandum from NRC staff to the Commission (Exhibit 001 at 1-2):

> With regard to the migration of production liquids toward the surrounding aquifer, each licensee must define and monitor a set of nonhazardous parameters to identify any unintended movement toward the surrounding aquifer. Exceedances of those parameters result in an event termed an excursion; excursion events are not necessarily environmental impacts but just indicators of the unintended movement of production fluids. The data show over 60 events had occurred at the 3 facilities. For most of those events, the licensees were able to control and reverse them through pumping and extraction at nearby wells. Most excursions were short-lived, although a few of them continued for several years. None had resulted in environmental impacts.

2) Installing additional wells between the perimeter monitoring well ring and the aquifer exemption boundary would have many disadvantages, including further drawing impacted groundwater away from the wellfield during well development and sampling, and causing false positives due to inadequate baseline characterization.
3) Sampling for the full suite of Table 8 parameters would not improve Powertech's ability to provide timely detection of an excursion, since many of these constituents travel relatively slowly compared to the early warning parameters and take much more time to analyze in a laboratory.

Attachment A-8
Proposed Alternate Solution to
Monitoring and Corrective Actions for a "Remnant Excursion Plume"

Problem:
Part IX, Section C.4.b.ii.E through I of the Draft Class III Area Permit proposes additional monitoring and corrective action requirements for a "remnant excursion plume." Following are technical comments regarding the technical feasibility of the proposed requirements, followed by a proposed alternate solution.

A-8-1: Absent any evidence that "remnant excursion plumes" have occurred at other ISR facilities, there is no need to modify the proven excursion monitoring system that has been reviewed and approved by NRC. As stated on page 116 of the Draft Class III Area Permit Fact Sheet, "The monitoring well detection system described in Section 12.5 is a proven method used at historically and currently operating facilities." Despite this acknowledgement, EPA is proposing to expand the excursion monitoring and corrective action requirements beyond what is required for any other ISR facility in the U.S.

A-8-2: NRC license requirements require Powertech to continue sampling all excursion monitoring wells from the onset of ISR operations through the end of groundwater restoration. This includes all perimeter monitoring wells and non-injection interval monitoring wells. If an excursion has not been fully remediated, it will be detected in future sampling events under the excursion monitoring program reviewed and approved by NRC.

A-8-3: The proposed requirement to extend the excursion monitoring program for additional down-gradient monitoring wells through the end of post-restoration groundwater monitoring is not warranted. Current NRC license requirements require Powertech to monitor all perimeter monitoring wells through the end of groundwater restoration. After groundwater restoration is complete, there is no nexus for an excursion to occur, since the groundwater would have been restored and no injection would occur into the wellfield.

A-8-4: Whereas the NRC license requirements focus on monitoring for the excursion monitoring parameters that provide early warning of potential impacted groundwater, the proposed draft permit would require monitoring the full suite of Table 8 parameters, many of which are reactive and will not travel as quickly as the excursion monitoring parameters. Monitoring for these parameters would not increase the effectiveness of the early warning system to detect potential impacted groundwater.

A-8-5: Other than the excursion monitoring parameters, all of the parameters in Table 8 of the draft permit take significantly longer than 1 week for laboratory analysis. As described in comment #A-6-3, the standard turn-around time is 20 business days (about 1 month) for the full suite of parameters, and the minimum turn-around time is 10 business days (about 2 weeks). Therefore, it is technically infeasible and impractical to sample weekly for parameters that take 1 month to

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analyze. In contrast, Powertech will have the ability to analyze excursion parameters almost immediately on site, which again makes monitoring for these constituents better suited for an early warning system.

A-8-6: The specific conductance threshold of 20% in Part IX, Section C.4.b.ii.F is inconsistent with NRC license requirements and likely to result in a large number of false positives. The NRC definition of an excursion is one constituent exceeding its UCL by 20% or two or more constituents exceeding the UCLs. The proposed condition sets the threshold at 20% above the initial concentration from the well, rather than 20% above the UCL. This is very likely to result in false positives due to natural variation in the specific conductance within the monitoring interval.

A-8-7: The proposed requirement in Part IX, Section C.4.b.ii.G to "immediately begin pumping the impacted well(s)" if a remnant excursion is detected is contrary to standard excursion recovery methods described in the approved NRC license application. Section 5.7.8.4.5 of the approved NRC license application describes how the typical method to correct an excursion is to adjust the flow rates of the injection and recovery wells within the wellfield to increase the aquifer bleed in the area of the excursion and draw impacted groundwater back into the wellfield pattern area. In contrast, the requirement to immediately begin pumping the well with a confirmed excursion would draw impacted groundwater away from the wellfield pattern area toward the aquifer exemption boundary. This would be less protective than excursion corrective actions required under NRC license requirements. Further, the proposed EPA approach could cause direct violation of NRC license conditions.

<u>Proposed Alternate Solution:</u>
No additional monitoring requirements are needed for a potential remnant excursion plume beyond those required by the NRC license. Powertech requests removal of the proposed additional monitoring and corrective action requirements due to the following reasons:

1) The excursion monitoring program reviewed and approved by NRC is a proven method of detecting excursions and will provide timely detection and correction of a potential remnant excursion plume (refer to additional information in Attachment A-7).
2) The proposed 20% specific conductance threshold is inconsistent with the NRC excursion criteria and is likely to result in false positives. Monitoring for potential remnant excursion plumes through standard excursion monitoring techniques and threshold criteria will provide timely detection of a potential remnant excursion plume.
3) There is no need to extend the excursion monitoring schedule for any wells through the end of post-restoration groundwater monitoring, since there is no nexus for an excursion to occur after groundwater restoration is complete.

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Attachment A-9
Proposed Alternate Solution to
Non-injection Interval Monitoring during Post-restoration Groundwater Monitoring

Note: As described in Attachment A-3, Powertech has proposed an alternate solution to post-restoration groundwater monitoring. In the event that this solution is not approved, this proposed alternate discusses proposed revisions to the monitoring requirements for non-injection interval monitoring wells during post-restoration groundwater monitoring.

Problem:
Part IX, Section E.4 of the Draft Class III Area Permit would require Powertech to collect groundwater samples every 6 months from non-injection interval monitoring wells and analyze them for the full suite of Table 8 parameters during post-restoration groundwater monitoring. Following are technical comments on the need for and technical feasibility of this proposed requirement, followed by a proposed alternate solution.

A-9-1: The NRC license requires excursion monitoring from the onset of ISR operations through the end of groundwater restoration. There is no nexus for an excursion to occur after groundwater restoration is complete, since the groundwater would have been restored and no injection would occur into the wellfield. This is especially true for the non-injection interval monitoring wells, which are separated from the production zone by overlying and underlying confining units.

A-9-2: If a vertical excursion occurs during ISR operations or groundwater restoration, it would have to be remediated in accordance with NRC license requirements.

A-9-3: No explanation could be found in the draft permit or fact sheet for the need for non-injection interval excursion monitoring during post-restoration groundwater monitoring.

A-9-4: No justification is provided for the proposed requirement to sample the non-injection interval monitoring wells for the full suite of Table 8 parameters rather than excursion detection parameters. As described in Attachments 6 through 8, additional parameters are not as effective at detecting a potential release due to slower transport, attenuation, longer laboratory analysis times, and lack of provisions to update baseline concentrations.

A-9-5: The proposed requirement in Part IX, Section E.4 to compare sample results with baseline standards is not consistent with EPA Unified Guidance (Exhibit 019), since it proceeds directly to compliance/assessment monitoring without the use of detection monitoring to determine whether a release occurs. Section 1.1 of EPA Unified Guidance describes how detection monitoring is used to "assess whether a hazardous constituent release has occurred," whereas compliance/assessment monitoring is used to "determine whether measured levels meet the compliance standards." See also comments in Attachment A-3. It would be more appropriate to use excursion monitoring parameters to determine whether a release occurs and follow that up

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with compliance/assessment monitoring if needed based on excursion (detection) monitoring results.

A-9-6: The proposed requirements are not consistent with EPA Unified Guidance in that they do not include provisions for updating baseline water quality. Comparing results during post-restoration groundwater monitoring to those collected some 5 to 9 years earlier during pre-operational baseline monitoring would not account for any natural changes in the non-injection interval water quality.

A-9-7: The proposed requirements are not consistent with EPA Unified Guidance in that they do not include provisions for retesting. Retesting is an important aspect of any groundwater detection monitoring program, and an excursion should not be confirmed without retesting. This is supported by EPA Unified guidance, which states: "Except for small sites with a very limited number of tests, any of the three detection monitoring options [including tolerance intervals such as UCLs] should incorporate some manner of retesting" (Exhibit 019 at p. 6-4).

Proposed Alternate Solution:

No additional monitoring requirements are needed for a potential excursion during post-restoration groundwater monitoring beyond the excursion monitoring requirements included in the NRC license. Powertech requests removal or modification of the proposed additional monitoring and corrective action requirements due to the following reasons:

1) The excursion monitoring program reviewed and approved by NRC is a proven method of detecting excursions and will provide timely detection and correction of a potential vertical excursion during ISR operations and groundwater restoration, which are the only times that injection will occur in the wellfield.
2) There is no need to extend the excursion monitoring schedule for any wells through the end of post-restoration groundwater monitoring, since there is no nexus for an excursion to occur after groundwater restoration is complete.
3) If EPA imposes the requirement to conduct excursion monitoring in the non-injection interval monitoring wells during post-restoration groundwater monitoring, Powertech requests that the parameter list be limited to the excursion monitoring parameters, which have proven effective at timely detection of a potential release at historically operated ISR facilities.
4) Per draft permit Part VII requirements, Powertech is required to maintain mechanical integrity of injection and production wells until such wells are plugged and abandoned. This provides added assurance that a long-term pathway between the production zone and non-injection monitoring intervals does not exist.

Attachment A-10
Proposed Alternate Solution to
Aquifer Exemption Boundary Location

Problem:
Following are technical comments on the currently proposed aquifer exemption boundary location in light of the proposed additional monitoring requirements, followed by a proposed alternate solution.

A-10-1: The proposed exempted aquifer boundary does not provide adequate room for the additional groundwater monitoring and corrective action requirements proposed in the draft permit. Powertech originally proposed an aquifer exemption boundary extending 1,600 feet from the potential wellfield pattern areas in its December 2008 Class III permit application (Exhibit 023 at p. 17-3). Justification for that aquifer exemption boundary proposal included adequate room to install the monitoring well network, potential worst-case fluid flow velocity during mining and response time needed to detect and correct a potential horizontal excursion. In response to a request from EPA, Powertech revised its proposed aquifer exemption boundary in the July 2012 update to the Class III permit application to include only the 14 proposed wellfields, potential perimeter monitoring well rings and a buffer area extending 120 feet from the monitoring well rings. As described in Appendix M of the updated Class III permit application, the general approach to calculate the buffer area was similar to what had been recently approved by EPA Region 8 for the Ur-Energy Lost Creek ISR Project in Wyoming.

A-10-2: The approach originally proposed by Powertech is completely consistent with accepted approaches to designating an exempted aquifer for a uranium ISR project. For example, the Nebraska Department of Environmental Quality granted an exemption for the entire license amendment area for the proposed North Trend Expansion to the Crow Butte ISR Project (compare Exhibit 027 at 7 with Exhibit 028). For a Class III permit, the regulations include an explicit requirement that the Director shall "consider Information contained in the mining plan for the proposed project, such as a map and general description of the mining zone, general information on the mineralogy and geochemistry of the mining zone, analysis of the amenability of the mining zone to the proposed mining method, and a time-table of planned development of the mining zone." 40 CFR § 144.7(c)(1). This requirement frames consideration of the approach to identifying and describing the exempted portion of the aquifer – 40 CFR § 144.7(c)(1) – by tying it to the mining plan. Among other things, this means that EPA must bear in mind that some of the details will remain uncertain until the mining plan has been implemented to further delineate the actual production areas. It further means that the original definition and description of the exempted aquifer must allow for the flexibility necessary to accommodate the implementation of the mining plan. UIC Guidance 34 also emphasizes the importance of the development plans by noting the importance of considering "a summary of logging which indicates that commercially producible quantities of minerals are present, a description of the mining method to be used, general information on the mineralogy and geochemistry of the mining zone, and a development timetable." This recognition of the development timetable includes an implicit recognition that some of the details of the exempted portion of the aquifer may need to be filled in as the mining program unfolds. Guidance further recognizes the

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importance of incorporating a "buffer zone" wherever it is possible to identify the existence of such a zone between the delineated mining areas and "any water supply wells which tap the proposed exempted aquifer" (Guidance 34, Attachment 3 at 2). Further, the Guidance indicates that the "buffer zone should extend a minimum of a 1/4 mile" outside of the designated mining area. In short, Guidance 34 reiterates the importance that the mandatory consideration of the mining plan plays in the delineation of the exempted aquifer and recognizes that the initial designation may need to be broad enough to allow for further adjustment as the mining plan is implemented and more detailed information obtained to further define the exempted portion of the aquifer. Any change of the designation pursuant to the additional information about the mining areas would be a non-substantial revision.

A-10-3: Powertech's modified proposal for an aquifer exemption boundary relatively close to the perimeter monitoring well rings was based on the reasonable expectation that the Dewey-Burdock Project groundwater monitoring and corrective action requirements would be consistent with those used at other ISR projects in EPA Region 8, including the Lost Creek ISR Project and other Wyoming projects for which EPA granted similar aquifer exemption approvals (i.e., the Ross ISR Project and Reno Creek ISR Project). At the time Powertech proposed the 120-foot offset distance from the perimeter monitoring well ring, EPA gave no indication that it would radically depart from past practice to impose additional groundwater monitoring and corrective action requirements in the draft Class III permit beyond those previously required by NRC or state Class III UIC programs such as that in Wyoming. These additional proposed groundwater monitoring and corrective action requirements that would encroach on the buffer area available between the perimeter monitoring well rings and aquifer exemption boundary and are incompatible with the currently proposed aquifer exemption boundary. Specific examples include:

1) Part IV, Section B.14 of the draft permit would allow Powertech to pump DGCB monitoring wells to decrease the travel time for groundwater from the restored production zone to reach the down-gradient wells. Pumping would significantly increase the groundwater velocity and would lessen time to respond to a statistically significant increase in concentration at a DGCB monitoring well in order to prevent a contaminant from reaching the aquifer exemption boundary and cause a violation of MCLs or otherwise adversely affect human health.
2) Part IX, Section B.10 of the draft permit would trigger non-compliance if any baseline constituent experiences a statistically significant increase above baseline concentrations at a DGCB monitoring well. Additional buffer area would be needed to address conservative and non-hazardous constituents such as sodium and chloride, which would not undergo geochemical attenuation.
3) Part IX, Section B.13 of the draft permit would require Powertech to install at least one new DGCB monitoring well down-gradient from a DGCB monitoring well that experiences a statistically significant increase in the concentration of any baseline constituent during post-restoration groundwater monitoring. There is no provision in the currently proposed aquifer exemption boundary to accommodate the installation, development and sampling of additional down-gradient wells.

4) Part IX, Section C.4 would require the installation of additional monitoring wells between the perimeter monitoring well ring and the aquifer exemption boundary in the event of a confirmed "expanding excursion plume." As described in comment #A-7-3, installing and sampling additional wells in this buffer area would draw more impacted groundwater toward the aquifer exemption boundary.
5) Part IX, Section C.3.f.v would similarly require the installation of additional monitoring wells down-gradient from a non-injection interval monitoring well impacted by an excursion under certain conditions.
6) The currently proposed aquifer exemption boundary was based on monitoring for excursion parameters (chloride, total alkalinity and specific conductance) that would be analyzed very quickly in Powertech's on-site laboratory. In contrast, Part IX, Section C.4 and other draft provisions would require excursion monitoring for the full suite of Table 8 parameters. As described in comment #A-6-3, the laboratory turn-around time for some of these added constituents is up to 1 month. The calculation of the time for excursion detection and corrective action used to justify the currently proposed aquifer exemption boundary does not consider the added laboratory analysis time.

A-10-4: As described in comment #E2 in Table 3, it is unclear whether the currently proposed aquifer exemption boundary is the green-dashed boundary shown in Figure 2 of the draft Aquifer Exemption ROD or whether it will be defined as 120 feet from the final perimeter monitoring well ring locations. If the green-dashed boundary shown in Figure 2 will be used to define the aquifer exemption boundary, there is a high likelihood that one or more modifications to the aquifer exemption boundary will be needed during wellfield design and construction, since the current boundary is based on the approximate perimeter monitoring well ring locations, which are subject to change during delineation drilling. Powertech is aware that two recent modifications to aquifer exemption boundaries for Wyoming ISR projects necessitated public notice even though the modification areas were small fractions of the total aquifer exemption area. One example is the Ross ISR Project, where EPA required public notice for a 1.1-acre modification to a 995-acre aquifer exemption area (0.115% of the exempted area) (Exhibit 029). The recommended inclusion of a buffer zone in the initial delineation of the exempted portion of the aquifer would avoid these unnecessary additional administrative procedures.

A-10-5: The proposed aquifer exemption boundary is inconsistent with larger exemptions granted by EPA Region 6 for uranium ISR projects in Texas. As recently as April 2017, EPA Region 6 granted an aquifer exemption for the UEC Burke Hollow ISR Project that included 5,384 acres, or about half of the 11,000-acre mine permit area (Exhibit 024). The aquifer exemption approval is provided as Exhibit 030. As discussed previously, an aquifer exemption approval for the entire mine permit area was granted for the proposed North Trend Expansion to the Crow Butte ISR Project, which is within EPA Region 8 (Exhibits 027 and 028). Such relatively larger aquifer exemption boundaries provide those ISR operations with confidence that minor adjustments may be made in wellfield boundaries without having to go through the major modification process to change the aquifer exemption boundary.

A-10-6: To Powertech's knowledge, EPA has never provided justification for the need to minimize the aquifer exemption area for uranium ISR projects within the jurisdiction of EPA Region 8.

Proposed Alternate Solution:

Regardless of whether Powertech's alternate solutions to post-restoration groundwater monitoring (Attachment A-3), monitoring and corrective actions for an excursion detected in a non-injection interval monitoring well (Attachment A-6), monitoring and corrective actions for an "expanding excursion plume" (Attachment A-7), monitoring and corrective actions for a "remnant excursion plume" (Attachment A-8) and non-injection interval monitoring during post-restoration groundwater monitoring (Attachment A-9) are incorporated, EPA needs to revise the designation of the exempted aquifer to include a buffer that allows for further adjustment as the wellfields are developed. Powertech requests modifications to EPA's proposed aquifer exemption boundary.

Powertech requests a larger aquifer exemption boundary to account for the additional groundwater monitoring and corrective action requirements. Even if all of Powertech's alternate solutions are accepted by EPA, unprecedented geochemical modeling would still be required to demonstrate that no contaminants will cross the aquifer exemption boundary and cause a violation of any primary MCLs or otherwise adversely affect the health of persons. A larger buffer area would provide additional assurance that such impacts to the non-exempt aquifer would not occur. Specifically, Powertech requests a buffer area ¼ mile from the ore bodies depicted in Figures 2a and 2b of the draft permit. This would equate to a distance of approximately 1,320 feet from the proposed injection and production wells and 920 feet from the proposed perimeter monitoring well rings. Justification for this proposed alternate solution includes the following:

1) A larger buffer area would provide added assurance that no impacted groundwater would cross the aquifer exemption boundary. For hazardous and reactive constituents such as uranium, the additional distance would provide added capacity for natural attenuation through adsorption, precipitation and other geochemical reactions. For all constituents, including non-hazardous and conservative constituents such as sodium and chloride, the additional distance would provide added capacity for dispersion, diffusion and other processes that would reduce the concentrations over a longer travel distance.
2) If post-restoration groundwater monitoring is required, a larger aquifer exemption boundary is essential to provide a buffer area needed to pump the DGCB monitoring wells and install additional DGCB monitoring wells, if needed.
3) A larger buffer area would allow for detection and correction of potential excursions without risking impact to the non-exempt aquifer. Industry standard excursion corrective actions such as increasing the bleed in the vicinity of a horizontal excursion would have adequate time for implementation without needing to resort to novel corrective actions such as installing additional down-gradient monitoring wells.
4) If Powertech is required to install additional monitoring wells down-gradient from perimeter or non-injection interval monitoring wells during an excursion, the larger buffer area would make it possible to install, develop and sample the wells without drawing solutions close to the aquifer exemption boundary.

5) Due to Powertech's commitment to avoid installing ISR production and injection wells within 1,600 feet of the permit boundary (as described under Part II, Section A of the draft permit), the aquifer exemption boundary must be at least 280 feet inside of the permit area at all locations (calculated as 1,600 feet from wellfield to permit boundary minus 1,320 feet from wellfield to aquifer exemption boundary).
6) No drinking water wells are included in the larger traditional aquifer exemption area.
7) No significant impact is anticipated to any nearby drinking water wells based on the very conservative capture zone analysis provided with the draft permit.
8) Powertech and EPA would have the flexibility to adjust final wellfield boundaries during delineation drilling without modifying the aquifer exemption boundary. This would avoid significant time and cost by EPA staff in approving what could be relatively frequent modification applications for very small changes to the aquifer exemption boundary.
9) The adjusted aquifer exemption boundary would encompass about 4,420 acres of the 10,580-acre permit area (42 percent). This is a smaller percentage than the recently approved aquifer exemption for the Burke Hollow ISR Project by EPA Region 6.
10) Sampling results summarized in Section 17.7 of the Class III permit application demonstrate that the groundwater quality in the Fall River and Chilson aquifers is unfit for human consumption throughout the permit area. Therefore, expanding the aquifer exemption boundary would serve to designate further groundwater that is unfit for human consumption and therefore is not a USDW.

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Attachment B

Exhibits

Exhibit List (All exhibits provided as PDF files)

Exhibit 001 NRC (U.S. Nuclear Regulatory Commission), Staff Assessment of Groundwater Impacts from Previously Licensed In-Situ Uranium Recovery Facilities, July 2009. Available from the NRC ADAMS document server under Accession Nos. ML091770187 and ML091770385: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 002 NRC, NUREG/CR-6733, A Baseline Risk-Informed, Performance-Based Approach for In Situ Leach Uranium Extraction Licensees, prepared by the Center for Nuclear Waste Regulatory Analyses for the NRC, September 2001. Available from the Internet as of May 2017: http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/.

Exhibit 003 TCEQ (Texas Commission on Environmental Quality), Decision of the Executive Director on Uranium Energy Corporation Permit No. UR03075, November 2008. Available from the NRC ADAMS document server under Accession No. ML14171A753: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 004 WDEQ/LQD (Wyoming Department of Environmental Quality, Land Quality Division), Guideline No. 4, In Situ Mining Noncoal, revised October 18, 2013.

Exhibit 005 Personal communication between Don Fischer, Wyoming Department of Environmental Quality, Water Quality Division, and Ben Schiffer, WWC Engineering, May 18, 2017.

Exhibit 006 EPA, Aquifer Exemption Record of Decision, Nichols Ranch Uranium ISR Project, Jane Dough Amendment, February 10, 2017. Available from the NRC ADAMS document server under Accession No. ML17068A415: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 007 EPA, 40 CFR Part 192, Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings, Proposed Rule, Federal Register Vol. 80, No. 16, January 26, 2015.

Exhibit 008 NRC, Environmental Impact Statement for the Dewey-Burdock Project in Custer and Fall River Counties, South Dakota, Supplement to the Generic Environmental Impact Statement for *In-Situ* Leach Uranium Milling Facilities, NUREG-1910, Supplement 5, January 2014. Available from the NRC ADAMS document server under Accession Nos. ML14024A477 and ML14024A478: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 009 NMA (National Mining Association), Comments on the United States Environmental Protection Agency's Proposed Rule on 40 CFR Part 192 Uranium Milling and 11e.(2) Byproduct Material, May 27, 2015. Available from the Internet as of May 2017: https://www.regulations.gov/document?D=EPA-HQ-OAR-2012-0788-0001.

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Exhibit 010 Powertech, Dewey-Burdock Project Technical Report, revised December 2013. Available from the NRC ADAMS document server under Accession No. ML14035A053: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 011 NRC, Safety Evaluation Report, Revision 1, for the AUC LLC Reno Creek ISR Project, Campbell County, Wyoming, Materials License No. SUA-1602, Docket No. 0400-09092, February 2017. Available from the NRC ADAMS document server under Accession No. ML16364A227: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 012 NRC, NUREG-1569, Standard Review Plan for In Situ Leach Uranium Extraction License Applications, Final Report, June 2003. Available from the Internet as of June 2017: https://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1569/.

Exhibit 013 Personal communication between Eric Brandjord, Inter-Mountain Laboratories (IML), and Jack Fritz, WWC Engineering, with standard and best-case laboratory turn-around times for water quality analysis, May 16, 2017.

Exhibit 014 NRC, Safety Evaluation Report (Revised) for the Dewey-Burdock Project, Fall River and Custer Counties, South Dakota, Materials License No. SUA-1600, Docket No. 40-9075, Powertech (USA) Inc., April 2014. Available from the NRC ADAMS document server under Accession No. ML14043A347: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 015 NRC, Regulatory Guide 4.14, Revision 1, Radiological Effluent and Environmental Monitoring at Uranium Mills, April 1980. Available from the Internet as of June 2017: https://www.nrc.gov/reading-rm/doc-collections/reg-guides/environmental-siting/rg/division-4/division-4-1.html.

Exhibit 016 NRC, Source and Byproduct Materials License SUA-1600, Amendment 1, issued to Powertech (USA) Inc., November 1, 2016. Available from the NRC ADAMS document server under Accession No. ML16202A174: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 017 NRC, Environmental Impact Statement for the Moore Ranch ISR Project in Campbell County, Wyoming, Supplement to the Generic Environmental Impact Statement for In-Situ Leach Uranium Milling Facilities, NUREG-1910, Supplement 1, August 2010. Available from the NRC ADAMS document server under Accession No. ML102290470: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 018 Petrotek Engineering Corporation, Numerical Modeling of Hydrogeologic Conditions, Dewey-Burdock Project, South Dakota, February 2012. Appendix 6.1-A to the Dewey-Burdock Project Technical Report. Prepared by Petrotek Engineering Corporation. Available from the NRC ADAMS document server under Accession No. ML12062A096: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 019 EPA, Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, Unified Guidance, March 2009, EPA 530/R-09-007. Available on the Internet as of May 2017: http://www.epa.gov/osw/hazard/correctiveaction/resources/guidance/sitechar/gwstats/unified-guid.pdf.

Exhibit 020 NRC, Fate and Transport Model for the Christensen Ranch ISR Project, Attachment I to the Technical Evaluation Report for Review of Restoration Report for Mine Units 2 through 6 of the Christensen Ranch Satellite Facility, Uranium One Willow Creek ISR Project, October 2012. Available from the NRC ADAMS document server under Accession Nos. ML12174A036 and ML12174A068: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 021 Reimus, P., J. Clay, G. Perkins, S. Brown and K. Williams, Cross-Hole Evaluation of Uranium and Selenium Natural Attenuation after ISR Mining, presentation at the 2017 National Mining Association Uranium Recovery Workshop in Denver, Colorado, June 6, 2017.

Exhibit 022 Grundl, T., and M. Cape, 2006, Geochemical Factors Controlling Radium Activity in a sandstone aquifer. Ground Water, Vol. 44, No. 4, p. 518-527, February 10, 2006. Copyrighted material. Website for abstract: http://onlinelibrary.wiley.com/doi/10.1111/j.1745-6584.2006.00162.x/abstract.

Exhibit 023 Powertech, Dewey-Burdock Project UIC Class III Permit Application, December 2008.

Exhibit 024 Uranium Energy Corporation, Uranium Energy Corp Receives Aquifer Exemption Approval for its Burke Hollow ISR Project in South Texas, press release, April 5, 2017. Available on the Internet as of June 2017: http://www.uraniumenergy.com/news/releases/index.php?content_id=625.

Exhibit 025 EPA, 40 CFR Part 192, Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings, Proposed Rule, Federal Register Vol. 82, No. 12, January 19, 2017.

Exhibit 026 TREC, NI 43-101 Technical Report, Preliminary Economic Assessment, Dewey-Burdock Uranium ISR Project, Report Date April 21, 2015. Available from the System for Electronic Document Analysis and Retrieval (SEDAR) as of April 2017: http://www.sedar.com/search/search_form_pc_en.htm.

Exhibit 027 Nebraska Department of Environmental Quality Aquifer Exemption Approval for the Crow Butte ISR Project, North Trend Expansion, April 7, 2011. Available on the NRC ADAMS document server under Accession No. ML15104A710: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 028 Crow Butte Resources, North Trend Area Mine Unit Map, Figure 1.7-4 in the Technical Report accompanying the Application for Amendment of USNRC Source Materials License SUA-1534, North Trend Expansion Area. Available on the NRC ADAMS document server under Accession No. ML071760344: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 029 Strata Energy, email to NRC re: aquifer exemption boundary modification for the Ross ISR Project, July 15, 2016. Available on the NRC ADAMS document server under Accession No. ML16201A054: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 030 EPA, Aquifer Exemption Approval for the Uranium Energy Corporation Burke Hollow ISR Project, March 27, 2017.

Exhibit 031 Plastic Pipe Institute, Standard Specifications, Standard Test Methods and Codes for PE (Polyethylene) Piping Systems, Chapter 5 in the Handbook of Polyethylene Pipe, 2nd ed., 2008. Available from the Internet as of April 2017: http://plasticpipe.org/publications/pe-handbook.html.

Exhibit 032 Powertech, Dewey-Burdock Class III and Class V UIC Permit Applications, Follow-up to October 22, 2014 Meeting [regarding impoundment construction and a non-drinking water, domestic well within the proposed aquifer exemption boundary], November 17, 2014. Available in the Powertech correspondence file under the Additional Administrative Record Documents: https://www.epa.gov/sites/production/files/2017-03/documents/correspondence_with_powertech_0.pdf.

Exhibit 033 IML Air Science, Ambient Air Quality Final Modeling Protocol and Impact Analysis, Dewey-Burdock Project, July 11, 2013. Available from the NRC ADAMS document server under Accession Nos. ML13196A061, ML13196A097 and ML13196A118: https://www.nrc.gov/reading-rm/adams.html.

Exhibit 034 BLM (Bureau of Land Management), 2015, Alton Coal Tract Lease by Application, Supplemental Draft Environmental Impact Statement, Appendix K: Air Resources Impact Assessment Technical Report, prepared for the BLM Kanab Field Office by Marquez Environmental Services and SWCA Environmental Consultants. Available from the Internet as of May 2017: https://eplanning.blm.gov/epl-front-office/projects/nepa/79446/106308/129967/25_Alton_Coal_SDEIS_App_K_Air_Resources_Reports.pdf.

Exhibit 035 Trinity Consultants, Preliminary Review of the December 15, 2015 Air Quality Modeling Analysis Performed by McVehil-Monnett Associates, Inc. in Response to Neighbor Complaint Regarding Traffic on County Road 120, January 26, 2016. Available from the Internet as of May 2017: http:// http://laplatacountyco.iqm2.com/Citizens/FileOpen.aspx?Type=4&ID=8189.

Exhibit 036 VISTAS, Draft BART Modeling Protocol for VISTAS, Ivar Tombach and Pat Brewer, March 22, 2005. Available from the Internet as of May 2017: https://www.weblakes.com/products/calpuff/resources/docs/BARTProtocolDraft_20050322.pdf.

Exhibit 037 EPA, 2014 National Emissions Inventory (NEI) Data. Available from the Internet as of April 2017: https://www.epa.gov/air-emissions-inventories/2014-national-emissions-inventory-nei-data.

Exhibit 038 Powertech, Agreement with Fall River County regarding protection of groundwater resources and road maintenance, January 12, 2007.

Exhibit 039 Appelo, C.A.J and D. Postma, Geochemistry, Groundwater and Pollution, 2nd ed., CRC Press. Copyrighted material. Website for purchase: https://www.crcpress.com/Geochemistry-Groundwater-and-Pollution-Second-Edition/Appelo-Postma-Appelo-Postma/p/book/9781439833544.

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POWERTECH (USA) INC.

June 16, 2017

Valois Shea
U.S. Environmental Protection Agency
Underground Injection Control Program, 8WP-SUI
1595 Wynkoop Street
Denver, CO 80202-1129

Re: Powertech (USA) Inc. Comments on Dewey-Burdock Project Draft Class V Area Permit

Dear Valois:

This letter and attachments represent Powertech (USA) Inc.'s (Powertech's) written comments on the Draft Class V Area Permit for the Dewey-Burdock Project issued for public comment in March 2017. The written comments pertain to the draft permit and Draft Class V Area Permit Fact Sheet. Table 1 includes specific technical comments. References are provided as PDF files in Attachment A.

Powertech appreciates the opportunity to provide these comments and would be happy to discuss them with EPA. We request that EPA give these comments full consideration, and we request that this be done within a reasonable time frame.

Sincerely,

John Mays
Chief Operating Officer
Powertech (USA) Inc.

Enclosures:

Table 1.	Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions
Attachment A	Exhibits

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions

No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
1	2	I.B	---	---	E, C	**Comment:** Why are South Dakota regulations in 40 CFR § 147.2100 referenced, when those regulations are for Class II wells? **Requested Change:** Powertech suggests changing the reference to the more general 40 CFR part 147, subpart QQ or else 40 CFR § 147.2101, which pertains to Class V wells. The requested change is shown below. UIC regulations specific to South Dakota are found at 40 CFR ~~§ 147.2100~~ part 147, subpart QQ.
2	2	I.B	---	---	I, C	**Comment:** Though it is referenced elsewhere in the draft permit, a reference to 40 CFR § 144.41 is not included here. **Requested Change:** Powertech requests adding reference to 40 CFR § 144.41 as follows. This Area Permit is issued for a period of ten (10) years unless modified, revoked and reissued, or terminated under 40 CFR § 144.39, ~~or~~ § 144.40, or § 144.41.
3	4 15	II.A.1 II.I	35	5.3.4.1	R	**Comment:** Part II of the draft permit presents a regulatory process to obtain "Limited Authorization to Inject". **Requested Change:** Powertech is not aware that a Limited Authorization to Inject (LAI) is an established regulatory process, or is warranted in any way, for the proposed operation. Powertech is not aware that EPA Region 8 has included an LAI requirement for any Class V, Class I, or Class III permit and requests clarification as to why this permit requirement is necessary to protect USDWs, or, absent such clarification, Powertech requests removal of the LAI requirement as described below. The testing procedures that are included under the LAI are routinely done in many similar well permits without a separate authorization, lack any significant potential for contamination of USDWs and are done with well casing in place. Powertech requests moving the Part II, Section A.1 requirements in entirety to Section A.2 (Information to Submit to the Director to Obtain an Authorization to Commence Injection). Similarly, Powertech requests moving the Part II, Section I requirements to Part II, Section K, where they can be identified as "Logging, sampling, and testing prior to well operation."

Comment type key: **A** – alternate approach proposed; **C** – correct to be consistent with application, regulations or NRC license requirements; **E** – additional explanation requested; **I** – inconsistency (internally inconsistent between parts of Draft permit or supporting documents); **R** – remove; inconsistent with application, regulations or NRC license requirements; **T** – typographical error

Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
4	4 20	II.A.1.c III.B Figure 3	---	---	I, C	**Comment:** Powertech is committed to completing Class V injection wells only into the Minnelusa Formation at this time and as such would not penetrate the Madison with drilling effort shown in Figure 3 of the draft permit. **Requested Change:** Powertech requests removal of Figure 3 in its entirety and removal of any requirement to collect Madison data from the drilling of Class V injection wells from the draft permit and fact sheet (see also comment #11). An example is provided below for Part II, Section A.1.c: Evaluation of the Minnelusa and Madison aquifer fluids at ~~DW. No. 1, if it is drilled to the base of the Deadwood Formation, AND at~~ the Madison water supply wells, if they are approved by the South Dakota Water Rights Program and if constructed, to confirm the injection zone formation is hydraulically isolated from the Madison aquifer at the Dewey-Burdock Project Site.
5	7	II.C Table 4	---	---	A	**Comment:** The draft permit states a "Fracture Finder" log will be run. Fracture Finder has different connotations to different people. To clarify, a micro-resistivity log would be an acceptable fracture finder log. A micro-resistivity log uses the same general principals as a normal resistivity (wireline) log, except it is a pad tool with small spacing that allows for very detailed evaluation of the wellbore face and the first 1-3 inches of the formation. It is useful to differentiate between wall cake from drilling mud, filtrate from drilling mud that has invaded the formation, and the formation fluid. It is also useful to identify zones that have significant fluid invasion (such as natural fracture intervals). For this reason, a micro-resistivity log is often referred to as a Fracture Finder log. **Requested Change:** Add "(Micro-resistivity)" after "Fracture Finder" in Table 4.
6	6-7 19-22	II.C Tables 3, 4, 5 Table 11 Figures 4-5	---	---	A	**Comment:** EPA has utilized casing sizes included in the permit application that was submitted in 2010. Since that time, market conditions and casing availability have changed; Powertech may elect to run larger production casing (7" OD versus 5 ½" OD stated in the permit application). The main reason that larger casing may be considered is to allow for installation of larger injection tubing, which will reduce friction loss and fluid velocity, both which will extend the useful life of the injection tubing. Installation of larger casing and/or tubing will have no impact on the protection of USDWs required under the Class V UIC permit.

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
						Requested Change: Update the text, tables, and figures to allow for use of 7" (or similar) production casing as dictated by technical and design requirements and market conditions. One specific text revision request is included in comment #24. Additional requested changes include but are not limited to: - Table 3: Under Cement Bond Log Due Date, change to "Prior to setting 7" or 5-1/2" casing in DW. No. 3" - Table 4: Under Due Date for all but Mud Logging, change to "Prior to setting 7" or 5-1/2" casing in DW. No. 3" - Table 5: Under Cement Bond Log Purpose, change to "Cement behind the 7" or 5-1/2" casing in DW. No. 3" - Table 5: Under Casing Inspection Log Purpose, change to "Casing quality of the 7" or 5-1/2" casing in DW. No. 3" - Table 11: Under Longstring Casing for DW No. 1 alternate and DW No. 3, change to "7" or 5 ½" - Figures 4 and 5: Change to "7" or 5 ½" Longstring Casing"
7	5 12	II.B Table 2 II.E.2.a, c	32	Sec. 5.1 Table 10	R	**Comment:** The Draft permit specifies that (1) core samples shall be collected only from the lower 50 feet of the Opeche Shale and upper 50 feet of the Lower Minnelusa confining zone, rather than within the confining zones in general; (2) cores must be collected in all Class V wells; and (3) core must be collected from the Lower Minnelusa only if DW No. 1 is drilled to the Deadwood. **Requested Change:** Powertech requests that the draft permit be revised to require core from the overlying and underlying confining zones, but allow the operator to determine the core location within the respective confining zones. The 50-foot restriction in the draft permit could misrepresent the overall confining abilities of the overlying and underlying confining zones. This approach, where it is up the operator to determine the appropriate core point in the confining zones, is common for UIC permits throughout the country. The core analysis data and geologic information (geophysical logs, drill cuttings, and mud log) will be provided to EPA to demonstrate that (1) the cores were collected from a representative portion of the confining zones, and (2) the properties of the confining zone are adequate to provide isolation between the USDWs and the injection zone.

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
						Further, Powertech requests the draft permit be modified to require collection of core only in the first well, rather than in each well. The overlying and underlying geologic confining units (Opeche Shale and Lower Minnelusa) are pervasive in the Dewey-Burdock area, and the intrinsic values for the formation properties are expected to be substantially similar at different locations across the site. After drilling the first Class V well (which will include core of the confining zones), geologic logs from subsequent wells will be compared to the first well to demonstrate consistency and continuity of the geologic confining units. Figures A-2, A-3, A-4, D-21 and D-22 in the permit application show consistent log character for the overlying confinement (Minnekahta and Opeche Shale) and underlying confinement (Lower Minnelusa, where logs are deep enough) over large distances (10-20 miles). New log information from the wells to be drilled at the project site will provide even more detail that will further support the regional information. Requested changes are shown below. **II.B. Collection of Drill Core in the Injection Zone and Confining Zones** 1. The Permittee shall collect drill core from the injection zone, the overlying confining zone formation and the underlying confining zone while drilling the first well under this Area Permit as described in Table 2 for the reasons stated in Table 2. Laboratory data may be supplemented by data from pressure transient testing and porosity information from the BHC Sonic log. 2. The Permittee shall compare geologic logs from subsequent wells to the first well to demonstrate consistency and continuity of the geologic confining units. ~~3~~2. The information shall be included in the Injection Authorization Data Package Report for each Class V injection well. ~~4~~3. The effective porosity and permeability of the injection zone formations shall be used as the input values in the equation used to calculate decline of injection zone pressure with distance away from the injection well described in Part II, Section F.2. **Table 2. Drill Core Collection for Laboratory Testing** TYPE OF TEST: While drilling ~~the first each~~ injection well, core samples shall be collected in the Minnelusa Injection Zone. PURPOSE: For laboratory testing to determine the porosity, effective porosity and DUE DATE: Prior to receiving ~~Limited~~ Authorization to Inject

Comment type key: **A** – alternate approach proposed; **C** – correct to be consistent with application, regulations or NRC license requirements; **E** – additional explanation requested; **I** – inconsistency (internally inconsistent between parts of Draft permit or supporting documents); **R** – remove; inconsistent with application, regulations or NRC license requirements; **T** – typographical error

Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
						permeability of the injection zone.
						While drilling the first ~~each~~ injection well, core samples shall be collected within the ~~lower 50 feet of the~~ Opeche Shale Confining Zone — For laboratory testing to determine the permeability and hydraulic conductivity of the overlying confining zone. — Prior to receiving ~~Limited~~ Authorization to Inject
						Samples shall be collected from the ~~top 50 feet of the~~ Lower Minnelusa confining zone while drilling the first injection well ~~DW No. 1, if the borehole is drilled to the base of the Deadwood Formation OR while drilling the Madison water supply wells, if they are approved by the South Dakota Water Rights Program~~. — For laboratory testing to determine the permeability and hydraulic conductivity of the underlying confining zone. — Prior to receiving ~~Limited~~ Authorization to Inject
						II.E.2. Core Sample Collection from Confining Zones a. During the drilling of ~~each~~ the first injection well, core samples within the ~~lower 50 feet of~~ Opeche Shale confining zone shall be collected. b. During the drilling of the first injection well ~~DW No. 1, if it is drilled down to the base of the Deadwood~~, core samples shall be collected within the ~~top 50 feet of the~~ Lower Minnelusa Formation ~~lower~~ confining zone. ~~c. If DW No. 1 is not drilled down to the base of the Deadwood, core samples shall be collected within the top 50 feet of the Lower Minnelusa Formation during the drilling of the Madison water supply wells, if they are approved by the South Dakota Water Rights Program.~~
8	6	II.C.5	---	---	A	**Comment:** The draft permit requires performance of deviation checks in a pilot hole, and then reaming the pilot hole to enlarge the diameter.

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
						Requested Change: The proposed Class V wells will be designed for and drilled with equipment commonly used for oil and gas wells where detailed deviation checks can be performed without the need for a pilot hole. The deviation checks discussed in 40 CFR § 146.12(d)(1) refer to a well where a pilot hole is planned, whereas no pilot hole is planned for any of the Powertech Class V wells. Powertech requests that the pilot hole requirement be removed. During drilling, deviation checks will be performed with either (1) single-shot survey tools (wireline survey tools run approximately every 1,000 feet that have an accuracy of ¼ of one degree), or (2) measurement while drilling (MWD) tools that "continuously" (every 30 feet) measure deviation to an accuracy of 1/10 of one degree). Pilot holes may be drilled in some situations where a large-diameter completion is required and very tight vertical deviation tolerances are necessary for installation of downhole pumps (e.g., municipal water supply wells where the final hole diameter is 18-36 inches and line shaft turbine pumps are used). This is a very different application from that proposed for Class V wells under this permit. A pilot hole approach would cause a large cost increase (due to drilling the pilot and subsequent reaming) and could cause hole problems due to longer exposure times for water-sensitive shales (e.g., the Morrison and Opeche). Requested changes are shown below. 5. The Permittee shall perform deviation checks on all injection well holes ~~constructed by first drilling a pilot hole, and then enlarging the pilot hole by reaming or another method~~. Such checks shall be conducted at sufficiently frequent intervals to assure that vertical avenues for fluid migration in the form of diverging holes are not created during drilling.
9	7-9	II.D Tables 6-7 II.D.2.b-h	21-22 33-34	3.4 5.3.1 Table 12	R	**Comments:** Given the extensive sampling of the Fall River and Chilson throughout the project area (as documented in the draft Class III permit and Class III permit application), additional characterization of the water quality in these overlying aquifers is not necessary. Between 2006 and 2010, baseline water quality samples were collected from 30 Inyan Kara wells (in either the Fall River or Chilson or both) and 4 Unkpapa/Sundance wells within the AOR. Between 1 and 15 samples were collected from each well resulting in over 200 samples in all. Data from these samples are presented in Appendices N and O of the Class III permit application.

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

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						Further, sampling every zone above the injection zone is inconsistent with UIC regulations (40 CFR 144 and 146). The Class V permit application and the Class V fact sheet indicate that the Minnekahta is not an aquifer at Dewey-Burdock, so it should not be sampled. The fact sheet clearly states that in the project area there is no evidence of porosity in the Minnekahta and that regionally, it is only an "aquifer" near surface where dissolution has occurred (p. 21). Given this evidence, there should not be a requirement to test the Minnekahta. This requirement is inconsistent with data provided in the permit application. With regard to the Minnelusa sampling (for each Class V well), Powertech requests: (1) sampling be based on field parameters that indicate formation fluid as determined in the field; (2) duplicate analyses of two fluid samples be performed (from the same sampling run); (3) bottom-hole pressure (indicative of potentiometric surface) will be recorded in the same 1-hour pressure monitoring period; (4) use of geophysical log data to calculate formation water salinity (indicated by NaCl concentrations) for the Fall River, Chilson, Unkpapa/Sundance and Minnelusa in all Class V wells; and (5) sampling be conducted "as appropriate given the tools available" as detailed in Comments #32 and 33. It is likely that the final Minnelusa formation water samples will be collected by swabbing through tubing after the production casing is installed and the casing has been perforated. The workover rig will install a work string (e.g., 2 7/8" tubing) and a work packer will be set above the top Minnelusa perforation. Swab cups will be installed on a swabbing line run from the surface and into the injection tubing to a depth commonly on the order of 1,000 to 2,000 feet. As the swab line is pulled back up through the tubing, formation fluid will be drawn up into the tubing, and eventually to the surface. The swabbing process is performed repeatedly so that completion fluid and near-wellbore filtrate are removed from the well, followed by formation fluid. The swab fluid parameters (temperature, pH, conductivity) will be measured and evaluated to determine when true formation fluid (as compared to drilling mud filtrate) has been recovered. Once formation fluid is present at the surface, duplicate fluid samples will be collected for the required fluid analyses.

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						Requested Change: Powertech requests the overlying sampling zone include only the Unkpapa/Sundance (in the first Class V well only). Powertech requests the ability to use, as an alternative, nearby existing well data and data from any new wells which may be in place at the time of drilling of the Class V well to provide water quality data on the Unkpapa/Sundance aquifer. See also comments #4 and #11 regarding Madison aquifer data collection. Requested changes are shown below.

Table 6. Aquifers to be Tested during Injection Well Drilling

Well Drill Hole	Aquifers to be Tested
DW No. 1	~~Fall River~~ ~~Chilson~~ Unkpapa/Sundance (first well only) ~~Minnekahta Limestone~~ Minnelusa porosity zone
DW No. 3	~~Fall River~~ ~~Chilson~~ Unkpapa/Sundance (first well only) ~~Minnekahta Limestone~~ Minnelusa porosity zone
~~DW No. 1, if it is drilled to the base of the Deadwood Formation AND the Madison water supply wells, if they are approved by the South Dakota Water Rights Program.~~	~~Minnelusa aquifer~~ ~~Madison aquifer~~

Table 7. Formation Testing Program

TYPE OF TEST	PURPOSE	DUE DATE
Isolate each aquifer specified in Table 6 and measure the potentiometric surface elevation of each aquifer specified in Table 6 as it is intersected by the wellbore	To determine the potentiometric surface elevation of each aquifer, including the injection zone	Prior to receiving ~~Limited~~ Authorization to Inject
Aquifer fluid sampling and analysis: A minimum of two (2) fluid samples shall be collected from each aquifer	To characterize the water quality of each aquifer intersected by the well bore.	Prior to receiving ~~Limited~~

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						specified in Table 6 for analyses of the parameters in Table 8		Authorization to Inject
						TDS evaluation of the injection zone based on a minimum of two (2) fluids samples from the Minnelusa injection zone according to the requirements under Part II, Section D.2.f and g.	To demonstrate the injection zone is not a USDW	Prior to receiving ~~Limited~~ Authorization to Inject
						Further characterization Minnelusa Injection Zone with respect to Bicarbonate, Calcium, Carbonate, Chloride, Fluoride, Magnesium, Potassium, Sodium and Sulfate concentrations. Report results as mg/L, milliequivalents per liter and plot as STIFF diagram show in Figure 2.	To verify the Minnelusa injection zone and Madison aquifer are hydrologically separated as described in Part II, Section E.3.	Prior to receiving ~~Limited~~ Authorization to Inject
						Characterization of the Madison Formation ~~at DW No. 1, if it is drilled to the base of the Deadwood Formation AND~~ at the two Madison water supply wells, if they are approved by the South Dakota Water Rights Program and if they are constructed, with respect to Bicarbonate, Calcium, Carbonate, Chloride, Fluoride, Magnesium, Potassium, Sodium and Sulfate concentrations. Report results as mg/L, milliequivalents per liter and plot as STIFF diagram show in Figure 2.	To verify the Minnelusa injection zone and Madison aquifer are hydrologically separated as described in Part II, Section E.3.	Prior to receiving ~~Limited~~ Authorization to Inject
						Measurement of additional parameters in the Madison aquifer required for updating the drawdown	To provide the input parameters for the drawdown model that will	Prior to receiving ~~Limited~~

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model of the Madison aquifer potentiometric surface described in Section 4.0 of the Report to Accompany Madison Water Right Permit Application submitted to the DENR Water Rights Program using site specific data, if the Madison wells are constructed.	determine the expected drawdown in the Madison aquifer at each Madison water supply well with 10~~2~~ years of pumping.	Authorization to Inject
Initial Temperature Survey Log[3]	To establish baseline temperatures of formations along well bore.	Prior to receiving ~~Limited~~ Authorization to Inject

2. Aquifer Fluid Sampling Requirements

b. Before aquifer sample collection, each aquifer specified in Table 6 shall be isolated within the drill hole to prevent inflow of groundwater from other aquifers.

c. Once the potentiometric surface for each isolated aquifer has been allowed to stabilize for 30 minutes, the Permittee shall collect three potentiometric surface elevation measurements a minimum of 15 minutes apart. After the potentiometric surface elevation measurements have been recorded, fluid samples shall be collected from each aquifer specified in Table 6 using the procedures in Part V, Section D.1.b and c of this Area Permit.

~~d. If the potentiometric surface of Minnekahta Formation is not above the top of the formation, the Permittee is not required to collect any fluids samples from the Minnekahta Formation. If the potentiometric surface of the Minnekahta aquifer fluid is above the top elevation of the formation, then the Permittee shall collect aquifer fluid samples to analyze for TDS and the other constituents in Table 8. If the Minnekahta Formation is not able to sustain pumping rates necessary for representative aquifer fluid samples to be collected, then the Permittee shall document sampling efforts, but is not required to collect fluids samples from the Minnekahta Formation.~~

~~d~~e. A minimum of two fluid samples from each aquifer specified in Table 6 shall be collected as appropriate given the tools available. ~~The second sample shall be collected after one drill stem volume of groundwater has been removed after the collection of the first sample.~~

~~e~~f. The two fluid samples from each aquifer specified in Table 6 shall be analyzed for the analytes listed in Table 8 using the analytical methods shown. Equivalent analytical methods

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						may be used after prior approval by the Director. Analytical results shall be reported in the units listed in Table 8. ~~g. In addition to the two samples collected under Part II, Section D.2.f, a minimum of three more samples shall be collected from the injection zone aquifer and analyzed for TDS only. One drill stem volume of groundwater shall be removed between the collection of each sample.~~[4] ~~fh.~~ The Permittee shall include the following information in the Injection Authorization Data Package Report submitted to the Director: i. Methods for aquifer isolation; ii. Sample collection methods; iii. Methods for insuring fluid sample is representative of the aquifer conditions; and iv. Methods for drilling fluid tracer sampling, field testing and analysis.
10	9	II.D.2.a	33	5.3.1	R, A	**Comment:** The draft permit requires use of a tracer (typically ammonium nitrate) to differentiate between drilling mud/filtrate and formation fluid. When the permit application was submitted (2010), it was common to use ammonium nitrate and it could be readily obtained. Since that time, it has become difficult to obtain due to Homeland Security concerns. Further, as far as Powertech is aware, the vast majority of sampling for Class V and Class I wells throughout the country has been conducted without the use of a tracer, and fluid samples from those wells have been approved by EPA and various state agencies. **Requested Change:** Powertech requests this permit requirement for a drilling mud tracer be removed and that this determination can be made using field sampling parameters and through observation of these parameters until they reach stability per Table 14. Measurement of field parameters has been proven to be sufficient to demonstrate that representative samples of formation fluid are obtained. The requested change is indicated below. The requirement in Part II, Section D.2.c to collect samples according to the procedures in Part V, Section D.1.b and c will necessitate measurement of field parameters without having to make additional modifications to address this comment. **2. Aquifer Fluid Sampling Requirements** ~~a. The drilling program for each well shall include the addition of a tracer in the drilling fluids. The tracer used for this purpose shall be such that the Permittee is able to analyze for the presence of the tracer in aquifer fluids samples using field testing methods. The tracer shall also be included as an analyte for laboratory testing of formation fluids to verify that no drilling fluid residual is present in the formation fluid samples.~~

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11	4 5 8 11	II.A.1.c Table 2 II.C.3 Table 7 II.E.1.d	16 17 33- 35	3.3.1 3.3.2 5.3.1 Tables 12&13 5.3.3	A	**Comment:** The Draft permit requires that Powertech characterize the Madison (which underlies the Lower Minnelusa confining zone and the Minnelusa injection zone) if DW No. 1 is drilled to the Deadwood, and in future water supply wells drilled under a South Dakota Water Rights permit. The confinement between the Minnelusa and Madison is clearly evident in geologic cross sections provided in the permit application and discussion found in the South Dakota DENR Report to the Chief Engineer on Water Permit Application No. 2685-2 (Exhibit 001). In the Dewey-Burdock Project area, there is no question about the continuity of the Lower Minnelusa confining zone that will isolate the Minnelusa injection zone from the Madison. **Requested Change:** As described in comment #4, Powertech requests removal of any requirement to collect Madison data from the drilling of Class V injection wells. In reference to potential Madison wells, Powertech requests that in all instance where the terms "if they are approved by the State of South Dakota" be further modified to "if they are approved by the State of South Dakota and if constructed". This would not necessitate the construction of the Madison wells as a condition of the Class V permit. Due to the requirement to conclude the State of South Dakota hearing prior to Madison well construction, Powertech would not want installation or operation of the Class V wells contingent on approval of a State of South Dakota water rights permit. Powertech anticipates that it will drill one or more Madison wells within the project area, and for any wells completed will collect data as listed in this section. An example of the requested text change for Part II, Section A.1.c is provided below (see also comment #4, which requests moving the Part II, Section A.1 requirements). **II.A. Injection Authorization Data Package Report** **1. Information to Submit to the Director to Obtain a Limited Authorization to Inject for Testing Purposes** For each injection well, the Permittee shall provide the following information, further described in Sections B through H, to the Director for evaluation. After evaluating the information, the Director will determine if it is appropriate to issue a written Limited Authorization to Inject to authorize the Permittee to commence injection activity for testing purposes only. c. Evaluation of the Minnelusa and Madison aquifer fluids ~~at DW. No. 1,~~ if ~~it is drilled to the base of the Deadwood Formation, AND at~~ the Madison water supply wells~~, if they~~ are approved by the South Dakota Water Rights Program and if they are constructed, to provide

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						additional confirmation that the injection zone formation is hydraulically isolated from the Madison aquifer at the Dewey-Burdock Project Site.
12	8 13	II.D Table 7 II.E.3.b.i II.F.2.a	31	4.4.4	C	**Comment:** Since the Class V permit duration is 10 years, it would be appropriate to model the drawdown in the Madison aquifer for 10 years rather than 12 years as required in the permit. A shorter duration for drawdown modeling is also warranted because the drawdown in the Madison is expected to be minimal with little change over time (Exhibit 001 at 9-10). Similarly, it would be more appropriate to calculate the injection zone formation pressures resulting from 10 years of injection activity rather than 12 years. **Requested Change:** In Table 7 and elsewhere, Powertech requests changing the modeling requirement for the Madison aquifer from 12 to 10 years. Powertech also requests removing the requirement to submit this information prior to receiving a limited authorization to inject and revising this to be submitted with a request for the final authorization to inject. Powertech requests revising Part II, Section E.3.b.i to remove the requirement for testing of the Madison aquifer should these wells not be approved by South Dakota DENR or not be constructed. Representative requested revisions are provided below. **II.E.3.b. Calculation of Potentiometric Surface Drawdown at the Madison Water Supply Wells** i. ~~After the testing of the Madison aquifer has provided the information on the potentiometric surface and other parameters required, t~~The Permittee shall generate a drawdown model of the change in the potentiometric surface of the Madison aquifer that can be expected to result from 10~~2~~ years of pumping the Madison aquifer at each of the Madison water supply wells. If available, the drawdown model shall use information on the potentiometric surface and other parameters for the Madison aquifer from Madison water supply wells at the Dewey-Burdock Project Site. Otherwise, regional data sources shall be used. **II.F. Injection Zone Pressure and Maximum Injection Rate Calculations** **2. Calculation of Injection-Induced Injection Zone Pressure** a. For each injection well, the Permittee shall calculate the injection zone formation pressures resulting from 10~~2~~ years of injection activity at the injection rate needed to dispose of the maximum anticipated volume of treated ISR waste fluids versus distance away from each injection well. Cumulative effects of injection from multiple wells shall be considered as applicable.

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13	11-12	II.E.1.e	17	3.3.2	A, R	**Comment:** The Formation Integrity Test (FIT) requirement is unnecessary and could cause impairment of the lower confinement due to testing to or above fracture pressure. **Requested Change:** As discussed previously, Powertech is committed to collection of core from the Lower Minnelusa in the first well. Analysis of that core, combined with geophysical logs across the Lower Minnelusa, will provide adequate demonstration of the integrity of the Lower Minnelusa confining zone. Lab testing of permeability from cores is superior to results obtained by FIT because it represents an actual measurement of the formation as opposed to indirectly measuring through FIT. The suitability of the Lower Minnelusa as a confining zone is also evidenced by regional hydrogeologic data collected by South Dakota DENR observation locations, as referenced in the fact sheet, and is supported by South Dakota DENR (Oil and Gas Program) who authorized the Barker Dome Class II injection wells completed in the Minnelusa and located immediately northeast of the project area. The permit file for the Ozark #3 Coffing Class II injection well, which is 3.5 miles east-northeast of the project area, is provided as Exhibit 006. Powertech requests removing the draft condition in Part II, Section E.1.e.
14	10 33	II.D Table 8 V.D.2 Table 16	35	Table 13	I, C	**Comment/Questions:** a. Are analyses for metals and radionuclides total or dissolved fractions? b. Why are the analytical methods different from those listed in the draft Class III permit (e.g., alkalinity, bicarbonate, sulfate, etc. have different methods in Table 8 of the draft Class III permit)? c. What would be the process for obtaining approval of alternate analytical methods? **Requested Change:** a. In Tables 8 and 16, metals and radionuclide samples should be analyzed for dissolved fractions to provide analytical results that represent the soluble (mobile) metals rather than suspended (particulate) metals. Dissolved analyses generally are preferred for most RCRA, CERCLA, and SDWA programs and consistent with permit requirements for UIC wells in other EPA regions and states. This would also be consistent with NRC requirements under the approved license, SUA-1600, for the Dewey-Burdock Project. b. In Table 8, Powertech requests that analytical methods be changed to be consistent with the Class III permit, Table 8. This would also make the laboratory analytical methods consistent with NRC license requirements (specifically with Table 6.1-1 of the approved NRC license

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						application). This will bring a consistency for data collected across the project. Further, Powertech request that total analysis may be left as an alternative method if needed.
15	13	II.F.1	33 41	5.3.1 Table 12 6.0	A, R	**Comment:** The requirement for determination of the potentiometric surface for all overlying aquifers is unwarranted, especially given that the critical pressure rise calculation is only required for the Unkpapa/Sundance (first overlying) aquifer. **Requested Change:** Powertech requests that this condition be limited to the first overlying aquifer (Unkpapa/Sundance). Please see comment #9 regarding the Minnekahta formation. Potentiometric data for the Inyan Kara and Unkpapa/Sundance aquifers have already been collected through existing well data. Powertech requests the ability to use, as an alternative, nearby existing well data and data from any new wells which may be in place at the time of drilling of the Class V well to provide potentiometric data on the Unkpapa/Sundance aquifer. Mapping of the potentiometric surfaces for the Inyan Kara aquifer, represented for the Fall River and Chilson, are presented in the Figures 5.2 and 5.3, respectively, of the Class III permit application. These potentiometric surface maps are based upon a number of observations and well locations and are mapped across the well sites for DW No. 1 and 3. In addition, potentiometric surface data for the Unkpapa/Sundance aquifer is presented in the Class III permit application (Figure 2.5 in Appendix J). Requested changes are provided below. **II.F. Injection Zone Pressure and Maximum Injection Rate Calculations** **1. Calculation of Critical Pressure Rise in the Minnelusa Injection Zone** After the depths have been determined to the top and bottom of the injection zone and the Unkpapa/Sundance ~~each~~ aquifer at each injection well location based on drillhole log, and the potentiometric surface~~s~~ has~~ve~~ been measured for the Unkpapa/Sundance ~~each~~ aquifer intersected by the injection well, the Permittee shall calculate the critical pressure rise that is needed within the injection zone to move fluids into a USDW along a hypothetical pathway through the confining zone. For the Minnelusa injection zone, this would be the critical pressure rise needed to move injection zone fluids into the Unkpapa/Sundance and Madison USDWs, respectively, at DW No.1 and DW No. 3. Representative potentiometric surface data for the Unkpapa/Sundance and Madison aquifers from wells within the Dewey-Burdock Project Site may be used, and regional data may be used for the Madison aquifer if the Madison water supply wells are not constructed.

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16	13	II.F.2.c	26, 30	4.4.2.1 Table 9	I, R	**Comment:** There is no evidence whatsoever that (a) oil/gas wells or (b) the Dewey Fault are potential conduits for flow from the Minnelusa injection zone to the first overlying aquifer. This characterization is supported by the permit application and the South Dakota DENR Report to the Chief Engineer on Water Permit Application No. 2685-2 (Exhibit 001 at 9, paragraph 1). Powertech believes that EPA may have misinterpreted the data provided in the application. **Requested Change:** Reference to either oil/gas wells or the Dewey Fault as conduits for vertical flow out of the injection zone within the project area should be removed because of the following: a. Earl Darrow #1 was properly plugged and abandoned with records included in the application. b. There are no data supporting the Dewey Fault as a conduit to flow between the aquifers. c. In the Class V fact sheet, Madison/Minnelusa well pairs at Hell Canyon shown on page 20 are 2 miles northwest of the Dewey Fault. These wells exhibit a difference in potentiometric surface, indicating confinement and hydrogeologic isolation between the Madison and Minnelusa in proximity to the fault. Further, the potentiometric surface of the Madison is well above (i.e., higher than) that in the Minnelusa by approximately 35 feet at this location. These data indicate that if a conduit for flow existed (which certainly does not up to the Dewey Fault or there would be little head difference), flow would be from the Madison into the Minnelusa. Powertech requests removal of the permit condition in Part II, Section F.2.c and removal of language in the draft permit and fact sheet indicating that either oil and gas test wells or the Dewey Fault act as a conduit between the Minnelusa and overlying or underlying aquifers.
17	14	II.F.3.a	29	Sec. 4.4.2.2	R, C	**Comment:** There is no explanation or evidence for the 1,000-foot offset restriction around the pre-existing offset area surrounding plugged oil and gas wells. Powertech has already (conservatively) requested an offset from those wells, even though plugging records clearly indicate that wells are property plugged. There is no basis for EPA to add another 1,000 feet to the offset requested in the permit application. Because of records to the contrary, the Earl Darrow #1 well does not serve as a potential conduit for flow, and there are no other oil and gas test wells penetrating the Minnelusa or deeper in the project area. **Requested Change:** Powertech requests removing the 1,000-foot offset requirement as shown below.

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						II.F.3. Calculation of Maximum Injection Rate for Each Class V Injection Well a. After the Permittee has calculated the critical pressure rise for each injection zone and the injection-induced injection zone pressure according to distance from each injection well using the injection rate needed to dispose of the maximum volume of treated ISR waste fluids and 10~~2~~ years of injection activity, the Permittee shall calculate a maximum injection rate for each injection well. ~~The maximum injection rate shall be determined such that the critical pressure in each injection zone is not exceeded 1,000 feet away from the nearest potential breech in confining zones, as discussed in Sections 4.4.2, 5.4.3 and 7.7.2 of the Class V Area Permit Fact Sheet.~~ This maximum injection rate shall ensure that no injection zone fluids move out of the injection zone through a pathway through the confining zones.
18	14	II.H.1	---	---	I	**Comment:** For consistency with regulatory requirements and for internal consistency, references to EPA or EPA Region 8 program should be changed to "the Director" wherever reference is made to EPA in its role as UIC program Director. **Requested Change:** **II.H. Initial Demonstration of Mechanical Integrity** **1. Prior Notification Requirement** Before conducting the initial mechanical integrity tests on each Class V injection well, the Permittee shall notify the ~~EPA Region 8 UIC program~~ Director a minimum of 30 days prior to testing date to give the ~~EPA~~ Director an opportunity to witness the test.
19	14 15	II.H.3 II.I.1.g	39	Sec. 5.5.2	I, C	**Comment:** It is requested that all permit conditions reflect consistency with permit condition Part II, Section H.3, which states the Cement Bond Log shall demonstrate 80% bonding through confinement zones (as opposed to applying the requirement to all casing above the injection zone). This is supported by industry references (Fitzgerald and others; SPE Paper 12141; Exhibit 002). **Requested Change:** Requested revisions are presented below. **II.I. Evaluation of the Injection Authorization Data Package Reports for Limited Authorization to Inject** 1. The Director will evaluate the information provided in the Injection Authorization Data Package Reports and may issue a written Limited Authorization to Inject for testing purposes only. The Director will issue Limited Authorization to Inject only after finding:

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						g. The well construction completion report demonstrates that each injection zone is isolated from USDWs by well casing and cement, meeting the requirements of Part III, Section D, and that there is a bond between at least 80% of the well casing and cement through confinement zones as demonstrated by the cement bond log;
20	16	II.J.4.a	36, 37	5.3.4.2	I, C, A	**Comment:** The requirement to monitor pressure within the injection zone may be problematic if a perforated interval were near the top of the injection zone, as it is ill advised to run tools below perforations. **Requested Change:** Change the permit language to allow for monitoring pressure within 50 feet of the top of the injection zone. This will allow for suspension of downhole gauges above perforations to mitigate risk of tool loss in the well. The requested change is shown below. **II.J.4. Step Rate Test and Determination of Maximum Allowable Injection Pressure** **a. Fracture Pressure:** The Permittee shall run an injection Step Rate Test for each well to determine the site-specific pressure at which fractures form in the injection zone at each injection well location. During the Step Rate Test, the Permittee shall monitor pressure within 50 feet of the top of the injection zone, as well as surface injection pressure. The Step Rate Test results shall be submitted to the Director for evaluation.
21	16 24 25 25 25 25 26 28-29 29 29 30 36 37 38 40 43	II.I.4.c III.H.2 III.J.2 III.J.2.e III.J.3 III.J.5 III.L.3 V.A.1 V.B.2 V.B.3 V.C.5.a V.E.3 Table 18 VI.A VII.C VII.D.11	---	---	I	**Comment:** For consistency with regulatory requirements and for internal consistency, references to EPA or EPA Region 8 program should be changed to "the Director" wherever reference is made to EPA in its role as UIC program Director. **Requested Changes:** - Page 16, Part II, Sec. I.4.c: "The MAIP permit limit for each injection well will be included in the Authorization to Commence Injection approval document issued by the Director~~EPA~~. - Page 24, Part III, Sec. H.2: "The Permittee shall submit to the Director~~EPA~~ an as-built final wellhead schematic diagram as part of the well construction completion report. - Page 25, Part III, Sec. J.2: "Prior to constructing an additional well under this Area Permit, the Permittee shall seek authorization to construct by submitting the following materials to the Director~~EPA~~:" - Page 25, Part III, Sec. J.2.e: "a list of all wells penetrating the Confining Zone within the Area of Review (AOR) of the new well including cementing records and cement bond logs any new wells within the AOR not previously evaluated by the Director~~EPA~~."

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	Page	Section	Page	Section	Type	
	45 46	VIII.A.2 VIII.J				- Page 25, Part III, Sec. J.3: "Once the Director~~EPA~~ has confirmed that the proposed injection well meets permit conditions, the Director~~EPA Region 8~~ will authorize construction by written communication to the Permittee." - Page 25, Part III, Sec. J.5: "The Permittee shall construct a requested injection well within one year of the Director~~EPA~~ construction authorization date as described in Section K." - Page 26, Part III, Sec. L.3: "…and shall provide this and any other record of well workover, logging, or test data to the Director~~EPA~~ in the next Quarterly Monitoring Report." - Page 28-29, Part V, Sec. A.1: "The falloff testing report should be submitted to the Director~~EPA~~ no later than 60 days following the test. Failure to submit a falloff test report will be considered a violation of the Area Permit and may result in an enforcement action. Any exceptions should be approved by the Director~~EPA~~ prior to conducting the test." - Page 29, Part V, Sec. B.2: "… the Permittee shall immediately cease injection and report to the Director~~EPA~~ within twenty-four (24) hours according to Part VII, Section D.11.e of this permit. Injection shall not resume until the Permittee has obtained approval to recommence injection from the Director~~EPA~~." - Page 29, Part V, Sec. B.3: "For any seismic event occurring between two and fifty miles of the permit boundary, that event will be recorded and reported to the Director~~EPA~~ on a quarterly basis." - Page 30, Part V, Sec. C.5.a: "Before conducting the regularly scheduled mechanical integrity tests on each Class V injection well, the Permittee shall notify the Director~~EPA Region 8 UIC program~~ a minimum of 30 days prior to the testing date to give the Director~~EPA~~ an opportunity to witness the test. The Director may allow a shorter notification period if it would be sufficient to enable the Director~~EPA~~ to witness the mechanical integrity test." - Page 36, Part V, Sec. E.3: "The Permittee shall notify the Director~~EPA~~ as to the location where injection well records are maintained. The Permittee shall notify the Director~~EPA~~ if this location changes." - Page 37, Table 18: "REPORT DUE TO THE DIRECTOR~~EPA~~" - Page 38, Part VI, Sec. A: "**Requirement for Director~~EPA~~ Approval before Plugging and Abandonment of Class V Deep Injection Wells**." - Page 40, Part VII, Sec. C: "In accordance with 40 CFR part 2 and 40 CFR § 144.5, information submitted to the Director~~EPA~~ pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page

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						containing such information. If no claim is made at the time of submission, the Director~~EPA~~ may make the information available to the public … ” - Page 43, Part VII, Sec. D.11: “Before written Authorization to Commence Injection is issued … and shall be submitted to the Director~~EPA~~ at the following address … After written Authorization to Commence Injection is issued … and shall be submitted to the Director~~EPA~~ at the following address:” - Page 45, Part VIII, Sec. A.2: “The Permittee, when periodically requested to revise the plugging and abandonment cost estimate discussed above, must submit 3 current independent plugging and abandonment cost estimates for the Director~~EPA~~ to accurately determine the likely cost to plug the well(s).” - Page 46, Part VIII, Sec. J: “The demonstration of financial responsibility shall be submitted to the Director~~EPA~~ …. Any well construction activities are prohibited until financial responsibility has been approved by the Director~~EPA~~.”
22	16 17	II.J Table 10 II.J.2.a	36	Table 14	I, C	**Comment:** The permit requirement limits Part II MIT logging to Radioactive Tracer (RAT) logs. Few vendors run RAT logs, and it may be difficult for those vendors to get a license to bring RAT tools into South Dakota. Temperature logs should also be considered. **Requested Change:** EPA Guidance No. 37 indicates that Part II MIT may be demonstrated by cement bond log showing 80% bond through an appropriate interval, <u>or</u> radioactive tracer survey, <u>or</u> temperature survey. Further, 40 CFR § 146.8 (general UIC) clearly indicates that a temperature log alone may be used. It states that other or alternate tests may be allowed by the Director/Administrator or may be required if the results are unsatisfactory. Powertech is committed to running a cement bond log and a temperature log to demonstrate Part II MIT. This process is commonly used on Class I wells in EPA Region 8 pursuant to 40 CFR § 146.14(b). Powertech requests the following change to provide flexibility in the event that RAT tools cannot be located. **Table 10. Formation Testing Involving Injection** TYPE OF TEST: Step Rate Test PURPOSE: Initial test to determine site specific fracture gradient and fracture pressure to use for calculating MAIP permit limit for each well. Injection pressures shall be monitored at surface and bottom hole to determine friction loss for each well.

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<table>
<tr><th rowspan="2">No.</th><th colspan="2">Draft Permit</th><th colspan="2">Fact Sheet</th><th rowspan="2">Type</th><th rowspan="2">Comment and Recommended Permit Language Revision or Other Modification</th></tr>
<tr><th>Page</th><th>Section</th><th>Page</th><th>Section</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>
<table>
<tr><td>Initial Radioactive Tracer Survey or Temperature Log</td><td>Baseline assessment of ability of the cement behind the longstring casing to prevent movement of injected fluids out of the approved injection formation.</td></tr>
</table>

II.J.2. Initial Radioactive Tracer Survey or Temperature Log
a. After the Step Rate Test has been run to identify injection zone fracture pressure, the Permittee shall conduct an initial radioactive tracer survey or temperature log for each injection well while injecting at a pressure below the injection zone fracture pressure but not below the MAIP permit limit.
</td></tr>
<tr><td>23</td><td>19-20</td><td>III.B Table 11 Figures 3-4</td><td>43</td><td>Table 16</td><td>I, C</td><td>
Comment:
The DW No. 1 Alternate surface casing and cement interval in Table 11 are inconsistent with Figure 4.
Requested Change:
Surface casing in the table should be corrected to an approximate depth of 970 feet as shown below. Also, as described in comments #4 and #11, Powertech requests removal of Figure 3 and its listing in Table 11.

Table 11. Well Casing and Cement Summary
<table>
<tr><th></th><th colspan="2">Burdock</th><th>Dewey</th></tr>
<tr><td></td><td>~~DW No.1 (Figure 3)~~</td><td>DW No.1 ~~alternate~~ (Figure 4)</td><td>DW No.3 (Figure 5)</td></tr>
<tr><td>Conductor Casing (in)</td><td>~~13 3/8"~~</td><td>13 3/8"</td><td>13 3/8"</td></tr>
<tr><td>Depth (ft)</td><td>~~60'~~</td><td>60'</td><td>60'</td></tr>
<tr><td>Surface Hole (in)</td><td>~~12 1/4"~~</td><td>12 1/4"</td><td>12 1/4"</td></tr>
<tr><td>Depth (ft)</td><td>~~Top of Minnelusa (~1,615')~~</td><td>50' below base of Sundance aquifer (~970~~1,615~~')</td><td>50' below base of Sundance aquifer (~1,305')</td></tr>
<tr><td>Surface Casing (in)</td><td>~~9 5/8"~~</td><td>9 5/8"</td><td>9 5/8"</td></tr>
<tr><td>Cement Interval (ft)</td><td>~~From top of Minnelusa to surface (0' – ~1,615')~~</td><td>From 50' below base of Sundance aquifer to surface</td><td>From 50' below base of Sundance aquifer to surface</td></tr>
</table>
</td></tr>
</table>

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						(0 - ~9701~~,615~~') | (0 - ~1,305')
						Longstring Hole (in) | ~~8 1/2"~~ | 8 1/2" | 8 1/2"
						Depth (ft) | ~~Near base of Minnelusa (~2,765')~~ | Up to ~250' below base of Minnelusa Porosity injection zone (~2,455') | Up to ~250' below base of Minnelusa Porosity injection zone (~2,790')
						Longstring Casing (in) | ~~7"~~ | 5 1/2" | 5 1/2"
						Cement volume | ~~120% of calculated volume between exterior of casing and surrounding annulus.~~ | 120% of calculated volume between exterior of casing and surrounding annulus. | 120% of calculated volume between exterior of casing and surrounding annulus.
						Cement Interval (ft) | ~~From base of Minnelusa to surface (0' - < ~2,765')~~ | Up to ~250' below base of Minnelusa Porosity injection zone to surface (0' - ~2,455') | From ~250' below base of Minnelusa Porosity injection zone to surface (0' - ~2,790')
						Open Hole (ft) | ~~6 1/4"~~ | n/a | n/a
						Total Depth (ft) | ~~At Precambrian basement (~3,195')~~ | Up to 250' below base of Minnelusa Porosity injection zone (~2,455') | Up to 250' below base of Minnelusa Porosity injection zone (~2,790')
24	19	III.B	41 42	6.0 6.1	I, A	**Comment:** The permit does not provide for reasonable and expected, normal, minor changes in well construction. Due to potential conditions in the field and minor variations in geology at different locations, it is not possible to dictate exact intervals and casing depths, packer depth, tubing depth, or perforations before a well is drilled. As such, some flexibility is required for well construction. This type of flexibility is common for Class V and Class I wells regulated by EPA and various states. In addition, as described in comment #6, Powertech may use 7" or similar production casing as dictated by technical and design requirements and market conditions. **Requested Change:** Add a statement in Part III, Section B as follows:

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						PART III. WELL CONSTRUCTION REQUIREMENTS **B. Approved Well Construction Plans** The details of the approved well construction plans are summarized in Table 11 and Figures 3 or 4 and 5. It is understood that minor changes in well construction may be necessary and are customary. The permittee has the flexibility to make such changes during well construction as warranted as long as the resulting Class V well construction is consistent with Federal UIC regulations and Part III of this permit. Allowable changes include, but are not limited to, use of 7-inch (or similar) production casing.
25	23	III.D	---	---	I, C	**Comment:** Depth intervals discussed in this section are inconsistent with other sections of the draft permit and should be indicated as approximate for the reasons discussed in the previous comment. Part III, Section D.5 discusses cementing from ~200 feet below base of Minnelusa porosity zone. This is inconsistent with other parts of the draft permit, which indicate that wells may be drilled up to 250 feet below this zone. **Requested Change:** The following changes are requested to make the draft permit internally consistent and to provide some flexibility during well construction. Throughout the permit, Powertech requests changing specific depths to "approximately" to allow for minor changes in the field without requiring a minor modification or approval from EPA (for example, Part III, Sec. D.3 shown below). Powertech requests removing Sections D.6.c and D.7, since field conditions will dictate cement volumes and casing centralizer spacing. It is inappropriate for EPA to specify these construction specifications, since Powertech will demonstrate Part II MIT in accordance with the permit and UIC regulations. **III.D. Casing and Cement** 3. The surface casing shall extend to approximately 50 feet below the lowermost USDW intersected by the well and must be cemented by recirculating the cement to the surface from a point approximately 50 feet below the lowermost USDW intersected by the well. 4. The Permittee shall isolate all USDWs by placing cement between the outermost casing and the well bore; 5. The Permittee shall isolate the injection zone by placing sufficient cement to fill the calculated space between the casing and the well bore: a. For DW No. 1: ~~from base of Minnelusa Formation to surface (if drilled to top of Precambrian Basement) or~~ from ~2500' below base of Minnelusa porosity injection zone to surface, depending on drill hole depth; and

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						b. For DW No. 3: from ~2500' below base of Minnelusa porosity injection zone to surface, depending on drill hole depth. 6. The Permittee shall use cement: a. Of sufficient quantity and quality to withstand the maximum operating pressure; and b. Which is resistant to deterioration from formation and injection fluids~~; and~~ ~~c. In a quantity no less than 120% of the calculated volume necessary to cement off a zone.~~ ~~7. A float shoe shall be used with a float collar one or two joints up from the bottom of the casing and centralizers shall be placed at a minimum of one on every fifth casing joint.~~
26	24	III.H.1	---	---	I, C	**Comment:** A stab fitting or threaded fitting are both suitable. See comment #24 for more detailed discussion on Powertech's request for more flexibility during well construction. **Requested Change:** Powertech requests the following change: **H. Sampling and Monitoring Devices** 1. The Permittee shall install and maintain in good operating condition at the wellhead: c. One-half (1/2) inch stab or threaded fittings, isolated by shut-off valves and located at the wellhead at a conveniently accessible location, for the attachment of a pressure gauge capable of monitoring pressures ranging from normal operating pressures up to at least 500 psi above the Maximum Allowable Injection Pressure (MAIP) specified in Part IV, Section H: i. on the injection tubing; and ii. on the tubing-casing annulus;
27	25	III.K	7	2.0	I, E	**Comment:** The draft permit does not clearly state that "additional wells" would be wells after the first four wells authorized by this permit are installed (e.g., Sec. K.1, K.2). There should be no time requirement for well construction, either for the initial wells (DW No. 1-4) or "additional" wells. The proposed requirements do not seem to consider that there are a number of permits and regulatory approvals needed prior to construction, including State of South Dakota hearings and additional Section 106 NHPA consultation required under the NRC license. Additionally, economic factors outside of Powertech's control may contribute to a delay in the onset of construction. **Requested Change:** Recognizing that EPA's primary concern is that additional wells could be constructed in the project vicinity prior to operations, Powertech proposes to replace the requirement to commence

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						construction within a specified timeline with a requirement to present an annual Area of Review (AOR) update to EPA until construction commences. The AOR update will include an annual review of wells drilled within the AOR (well name/API or DENR number; depth; completed interval; well construction information; evidence that USDWs were isolated and, if the well is deep enough, that the Minnelusa injection zone was isolated). This type of AOR update will provide EPA with information to assure that there are no new AOR issues (potential pathways for flow from the injection zone to a USDW) that have occurred since issuance of the permit. This approach has been used successfully for years by the TCEQ in Texas for regulation of Class V and Class I (radioactive waste) UIC wells. This and other requested changes to address these comments are provided below. **III.K. Postponement of Construction** 1. The Permittee shall present an annual Area of Review (AOR) update to the EPA until construction of the Class V injection wells commences. The AOR update shall include identifying the location, depth, completion interval, and, if applicable, evidence that the Minnelusa injection zone was isolated for any new wells within the permit area ~~commence construction of at least one of the originally proposed Class V injection wells within one year of the Effective Date of the Permit. Authorization to construct and operate shall expire if construction of at least one of the originally proposed Class V injection wells has not commenced within one year of the Effective Date of the Permit, unless the Permittee has notified the Director and requested an extension prior to expiration. Notification shall be in writing, shall state the reasons for the delay and shall provide an estimated date for which well construction will commence. Once Authorization has expired under this part, the complete permit process including opportunity for public comment shall be required before Authorization to construct and operate can be reissued.~~ 2. To obtain authorization for additional wells beyond the four wells authorized by this Area Permit for injection into the Minnelusa injection zone, the Permittee shall follow the permit requirements under Part II of this Area Permit. ~~3. If an additional well is added to this Area Permit, the Permittee shall commence construction of the well within one year of authorization of the additional well. Authorization for construction of the additional well expires after one year from date of issuance, unless the Permittee has notified the Director and requested an extension prior to expiration.~~

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						~~4. After the authorization for well construction has expired, the Permittee shall reapply for authorization to construct an additional well according to the procedures listed in Section J of this Part.~~
28	26 27	III.L.4 IV.F.3	45	7.3	I, C	**Comment:** The Draft permit states that minor modifications, such as adding perforations within the already approved injection zone, would be a major modification. This is an overly restrictive condition. It is common for many UIC well classes that perforations are added within the approved injection zone due to physical plugging, friction loss, or additional porosity discovered through data analysis. In all these examples, additional perforations would help inject more fluid at a lower injection pressure but would not affect fluid containment described in the permit application or specified in the Permit. There is no requirement in 40 CFR 144 or 146 to conduct MIT after adding additional perforations assuming the packer and tubing are not removed. If tubing and packer were removed to add perforations, Part I MIT would be necessary once the tubing and packer were replaced. **Requested Change:** Powertech requests the following changes. **III.L. Workovers and Alterations** 4. Any modification to well construction that is substantially different from the approved well construction plan is allowed only as a major modification of this Area Permit according to 40 CFR § 144.39 and § 124.5. **IV.F. Approved Injection Zone and Perforations** 3. Additional injection perforations may be added once the following requirements are met: a. The new perforations remain within the approved injection zone, b. The top perforation is no higher than the approved top of the injection zone ~~c. The Permittee has received approval from the Director as a major modification of this Permit in accordance with Part III, Section C.2 of this Permit; and~~ ~~d. The Director approves the addition of perforations as a major modification of this Area Permit according to 40 CFR § 144.39 and § 124.5.~~ ~~c~~e. After the addition of perforations, the Permittee shall follow the requirements for well Workovers and Alterations under Part III, Section L if the tubing and packer are removed to add the perforations.

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29	28	IV.K.1	50	7.8	I, C	**Comment:** There are several waste streams identified in the Waste Analysis Plan included with the permit application that are not included in the list of waste fluids in the draft permit (e.g., restoration bleed [whether or not it is processed through RO], yellowcake wash water, bleed from effluent and precipitation circuits, sumps, membrane cleaning solutions, groundwater sweep solutions, and plant washdown water). **Requested Change:** Powertech requests adding the waste streams above, which were included in the permit application, to the permit text. All of these fall into the category of waste fluids generated by the ISR process, which is already described in the draft permit. Further, Powertech requests that EPA update the description of the injectate in both the draft permit and fact sheet to make it clear that only waste fluid generated by the Dewey-Burdock Project would be injected into the Class V wells (as opposed to waste fluid from any other ISR project). Requested changes are provided below. **IV.K. Approved Injectate** 1. Injection fluid is limited to waste fluids from the ISR process generated by the Dewey-Burdock Project. These waste fluids include groundwater produced from well construction, laboratory waste fluids, well field production bleed, ~~and~~ concentrated brine generated from the reverse osmosis treatment of groundwater produced from wellfield during groundwater restoration, restoration bleed not processed by reverse osmosis, yellowcake wash water, bleed from effluent and precipitation circuits, sumps, membrane cleaning solutions, groundwater sweep solutions, and plant washdown water. The groundwater pumped from any portion of the Inyan Kara aquifers for the purpose of remediating an excursion is also approved for injection into the Class V ~~Class V~~ injection wells.
30	29 34-35	V.B.2 Tables 17A and 17F	52-55 56	8.1.2.1 8.1.2.2	I, C	**Comment:** The draft permit has overly restrictive language related to change of operations if seismic events occur. Because low-frequency seismic events (e.g., <2.0 magnitude [MMI scale]) can occur regularly, the reference to "any" seismic event could preclude operations entirely for many days. Except for the BOR Paradox permit, where injection above fracture pressure is specifically authorized by EPA, a seismic monitoring requirement and associated operations limitation is uncommon for Class V permits. Likewise, it is uncommon for Class I permits, except for the City of Sterling wells despite the fact that there was little if any seismic risk. We are not aware of any

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						historical induced seismic event from a Class V well operated below fracture pressure. Further, information provided in the permit application (Figures F-3 and F-4) shows that the project site is located in an area of low seismic risk, so there is not an existing concern regarding seismic issues. **Requested Change:** The requested changes shown below are similar to the Stop Light approach successfully employed by the Colorado Oil and Gas Conservation Commission (COGCC) (Exhibit 003). For example, the Exhibit 003 approach dictates response levels as follows: Green Light – Continue operations (<M2.5 ([MMI scale] within 2.5 mi) Yellow Light – Modify operations (>M2.5 & < 4.4 within 2.5 mi) Red Light – Suspend operations (> M4.5 within 2 mi) **B. Seismicity** 2. For any seismic event with greater than 4.5 magnitude (MMI scale) reported within two miles of the permit boundary, the Permittee shall immediately cease injection and report to EPA within twenty-four (24) hours according to Part VII, Section D.11.e of this permit. Injection shall not resume until the Permittee has obtained approval to recommence injection from the EPA. **Table 17. Monitoring, Recording and Reporting Requirements for Well Operating Parameters** A. CONTINUOUS MONITORING MONITOR: Seismic events with greater than 2.0 magnitude (MMI scale) within a two (2) mile radius of the Area Permit boundary, gathered from USGS Earthquake Hazard Program website or through personal communication. **Table 17. Monitoring, Recording and Reporting Requirements for Well Operating Parameters** F. QUARTERLY MONITORING REPORT: Summary of monthly reviews of seismic events with greater than 2.0 magnitude (MMI scale) within a fifty (50) mile radius of the Area Permit boundary.
31	30	V.C.6.b	---	---	C, A	**Comment:** The Draft permit states that "USEPA certified" gauge should be used for annuls pressure test. Powertech is not aware of such a certification program. As in EPA regions across the country

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						(including Region 8), a digital pressure gauge, which is calibrated annually using a deadweight tester, will be used and certification will be provided in testing reports. **Requested Change:** Change to "calibrated and certified" gauge as shown below. **V.C.6. Mechanical Integrity Test Methods and Criteria** **b. Internal Mechanical Integrity: TCA Pressure Mechanical Integrity Test Procedure** The Permittee shall conduct the following internal mechanical integrity test to verify there are no leaks in the well tubing, casing or packer. iv. Install ~~USEPA~~ calibrated and certified gauge on "bleed" type valve. The annulus may need to be pressurized and bled off several times to ensure an absence of air.
32	31	V.D.1.b-c	---	---	R, A	**Comment:** The low-flow sampling requirement is not applicable to this type of Class V well. Sampling methods specified in Part V, Section D.1.b and c are inconsistent with deep injection wells and oil/gas equipment that will be required to install the wells. The requirement for fluid sampling by swabbing 3 volumes during drilling and producing fluid via submersible pump should be removed. **Requested Change:** Sampling will be conducted "as appropriate given the tools available," commonly by swabbing or drill stem testing (DSTs). See comment #9 for anticipated sampling procedures for the Minnelusa. In the case of a drill stem test (DST) that might be used to sample the Sundance/Unkpapa, a packer or packers would be used on the end of the drill string to seal around or above the zone to be sampled. A valve in the bottom hole assembly would be opened allowing formation fluid to fill the drill pipe to a level dependent on reservoir pressure. The pipe would be tripped out of the hole, and formation fluid would be sampled at surface. This is an often used and viable option for collecting reservoir data and fluid samples. Assuming the formation has reasonable porosity and permeability, sufficient fluid will be produced such that wellbore fluid (mud), mud filtrate, and formation fluid are all recovered by the DST. The formation fluid will be the last fluid recovered and will be present in the bottom of the testing string and in the fluid sampling chamber (typically 1-2 gallons of volume). Fluid samples will be transferred from the sample chamber, and if necessary, the first joint of drill pipe above the sample chamber, into the sample bottles that are then sent to the laboratory for analysis.

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
						Requested changes are shown below. **V.D. Monitoring Methods, Parameters and Frequency** **1. Monitoring Methods** a. Monitoring observations, measurements, samples, etc. taken for the purpose of complying with these requirements shall be representative of the activity or condition being monitored. ~~b. During drilling, before an aquifer fluid sample is collected for laboratory analysis, the formation shall be swabbed a minimum of three times.~~ b~~c~~. Aquifer fluid shall be produced from the well using methods appropriate given the tools available ~~a submersible pump, swabbing or wireline testing equipment~~. Aquifer fluid sampling shall occur after the open-hole section has been drilled, but prior to conducting any injection testing. ~~The submersible pump is the preferred method to be used and shall be used, if possible. If a submersible pump is able to be used, the Permittee shall use the Standard Operating Procedure for Low-Stress (Low Flow) / Minimal Drawdown Ground-Water Sample Collection and measure the f~~Field parameters listed in Table 14 shall be measured at the surface as fluid is ~~pumped out of~~ withdrawn from the well to determine when collection of a representative sample is possible. When the field parameters meet the stabilization criteria in Table 14, indicating that the water quality indicator parameters have stabilized, then sample collection can take place.
33	32	V.D.1 Table 14 V.D.1.f-i	---	---	I, R, C	**Comment:** The NRC license requires analysis of three field parameters (pH, specific conductance and temperature) during monitor well sampling. The approved NRC license application also specifies a stability criterion of 10% for each of these constituents. For consistency with the NRC license, Powertech suggests changing Table 14 to list these three constituents along with the 10% stabilization criterion for each. These are reliable indicators of formation fluid and are much more stable than ORP, turbidity, or DO. Analysis of ORP, turbidity and dissolved oxygen are not included in the NRC license requirements. Powertech requests omitting these constituents from Table 14 for that reason and since these constituents are not common indicator parameters for the relatively deep, bedrock aquifers that will be monitored. For example, the EPA guidance document cited under Part V, Sec. D.1.c indicates that "Oxidation-reduction potential may not always be an appropriate stabilization parameter." ORP, turbidity and dissolved oxygen are appropriate for surface water or shallow groundwater sampling where the water would be expected to have seasonal variation in turbidity levels and

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

<table>
<tr><th rowspan="2">No.</th><th colspan="2">Draft Permit</th><th colspan="2">Fact Sheet</th><th rowspan="2">Type</th><th rowspan="2">Comment and Recommended Permit Language Revision or Other Modification</th></tr>
<tr><th>Page</th><th>Section</th><th>Page</th><th>Section</th></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td>varying dissolved oxygen and ORP concentrations. They are not appropriate for deep bedrock aquifers where oxygen is absent and turbidity is only related to well development and does not affect dissolved constituent concentrations.

Powertech also requests modifying Part V, Sections D.1.f, h and i for flexibility as shown below.
Requested Changes:
Following are the suggested revisions to Table 14 and Part V, Section D.1.f.

Table 14. Field Parameters to be Monitored and Stabilization Criteria to Meet before Sample Collection
<table>
<tr><th>Parameter</th><th>Stabilization Criteria</th></tr>
<tr><td>pH</td><td>± ~~0.1~~ 10% pH units</td></tr>
<tr><td>Specific conductance</td><td>± ~~3~~10% µS/cm</td></tr>
<tr><td>Temperature</td><td>± 10% °C</td></tr>
<tr><td>~~Oxidation-reduction potential~~</td><td>~~± 10 millivolts~~</td></tr>
<tr><td>~~Turbidity~~</td><td>~~± 10 % NTUs when turbidity is greater than 10 NTUs~~</td></tr>
<tr><td>~~Dissolved oxygen~~</td><td>~~± 0.3 milligrams per liter~~</td></tr>
</table>
V.D. Monitoring Methods, Parameters and Frequency
1. Monitoring Methods
f. Injection pressure, annulus pressure, injection rate, and cumulative injected volumes shall be observed and recorded under normal operating conditions, and all parameters shall be observed ~~simultaneously~~ at the same general time to provide a clear depiction of well operation.
g. Pressures are to be measured in pounds per square inch (psi).
h. Fluid volumes are to be measured in standard oilfield barrels (bbl) or gallons (gal).
i. Fluid rates are to be measured in barrels per day (bbl/day) or gallons per minute (gpm).</td></tr>
<tr><td>34</td><td>36</td><td>V.E.2</td><td>4</td><td>1.0</td><td>I, E</td><td>Comment:
Powertech is uncertain why 40 CFR part 146 subpart G regulations are referenced as those regulations refer to Class I hazardous waste injection wells.</td></tr>
</table>

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Table 1. Draft Class V Area Permit Specific Comments and Recommended Permit Language Revisions (cont.)

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	Page	Section	Page	Section	Type	
						Requested Clarification: Please explain the basis for reference to 40 CFR part 146 subpart G, which pertains to Class I hazardous waste injection wells. This permit is not for a Class I hazardous waste injection well, and permit conditions prohibit injection of hazardous waste.
35	37-38	V.G	44 58	6.5, 8.1.5	I, C	**Comment:** Powertech will operate a manned facility. Why are there automated monitoring and shut-off requirements that would apply whether the facility is manned or unmanned? In addition, the monitoring requirements in Part V, Section G.6.h through k apply regardless of manned or remote operations. **Requested Change:** Powertech requested the addition of a qualifier to indicate that automatic monitoring guidelines must be followed only if the facility is unmanned. In addition, Powertech requests moving the requirements in Part V, Section G.6.h through k to Part V, Section D.4 (Page 36).
36	38	VI.A	---	---	I, R	**Comment:** This requirement prohibits Powertech from plugging and abandoning any Class V deep injection well until after receiving written authorization from the Director, who will not approve the plugging and abandonment of any Class V deep injection wells until all Class III wellfields have been decommissioned. **Requested Change:** Powertech is committed to completing groundwater restoration and understands fully that wastewater disposal capacity is a necessity to effective completion of this requirement. However, Powertech has submitted permit applications for two methods for wastewater disposal including deep well disposal and land application. Powertech's Groundwater Discharge Plan application, which requests use of land application of treated wastewater from the project, has been recommended for approval by the South Dakota DENR and is currently pending a State Hearing. Because there is a separate option for wastewater disposal, Powertech requests that EPA update this requirement accordingly to allow for the possibility that land application may provide the necessary wastewater disposal capacity for groundwater restoration and that it may be possible that no deep wells are used for this purpose. Requested changes are provided below. **PART VI. PLUGGING AND ABANDONMENT** **A. Requirement for EPA Approval before Plugging and Abandonment of Class V Deep Injection Wells** The Permittee shall not commence plugging and abandonment of a Class V Deep injection well until after receiving written authorization from the Director. The Director will not approve the

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No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
						plugging and abandonment of all~~any~~ Class V deep injection wells until all Class III wellfields have been decommissioned by the NRC unless land application or another alternate method of disposing treated wastewater is available. At least one Class V deep injection well shall remain active or temporarily abandoned until all Class III wellfields have been decommissioned unless land application or another alternate method of disposing treated wastewater is available.
37	44	VII.D.11.i	---	---	R	**Comment:** Suggest not using the "NRC" acronym for National Response Center, since it is used elsewhere in the document for U.S. Nuclear Regulatory Commission.
38	45	VIII.A.1	---	---	E	**Comment:** Specifically, what is meant by "EPA's model language" with respect to the various acceptable forms of financial assurance? **Requested Change:** Powertech requests clarification of "EPA's model language."
39	46	VIII.J	61	10.2	I, A	**Comment:** The proposed provision would require an updated financial responsibility cost estimate to be submitted within 21 days of the Effective Date of the Final Permit and a demonstration of financial responsibility within 30 calendar days of the Effective Date of the Final Permit. As described in comment #27, there are a number of permits and regulatory approvals needed prior to construction, and economic factors may contribute to a delay in the onset of construction. **Requested Change:** Powertech proposes to provide EPA with an updated financial responsibility cost estimate at least 90 days prior to initial construction of any Class V injection wells within the permit area. This is consistent with License Condition (LC) 9.5 in NRC license SUA-1600, which requires Powertech to provide an updated financial assurance estimate at least 90 days prior to beginning construction activities associated with any planned expansion or operational change that was not included in an annual financial assurance update (Exhibit 004 at 3-4). Powertech proposes to provide EPA with demonstration of financial responsibility at least 90 days prior to commencing Class V injection well operations. This is also consistent with LC 9.5, which requires Powertech to submit the financial assurance instrument for NRC staff review and approval 90 days prior to commencing operations. Requested changes are shown below. **VIII.J. Updated Cost Estimate and Timing for Demonstration of Financial Responsibility** An updated cost estimate shall be submitted at least 90 days prior to construction of any Class V injection well within the permit area~~within 21 days of the Effective Date of the Final~~

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No.	Draft Permit		Fact Sheet			Comment and Recommended Permit Language Revision or Other Modification
	Page	Section	Page	Section	Type	
						~~Permit~~. The demonstration of financial responsibility shall be submitted to the Director~~EPA~~ at least 90 days ~~within 30 calendar days of the Effective Date of the Final Permit and~~ before the commencement of operation of any Class V injection well ~~construction activities~~. Any well ~~construction~~ operational activities are prohibited until financial responsibility has been approved by the Director~~EPA~~.
40	48	App. A Fig. A-1	---	---	I, A	**Comment:** Appendix A, Figure A-1 Preliminary Wellhead Schematic depicts an impractical tree configuration which in inconsistent with the permit application and industry standards. **Requested Change:** Powertech requests that the attached proposed wellhead schematic (Exhibit 005) replace that in the draft permit as it satisfies all capabilities for monitoring and sampling requirements.
						Typographical Errors
41	4	II.A.1.a	---	---	T	**Error & Suggested Correction:** Section uses "and is" causing a seemingly unintended reference to the injection zone instead of the confining zone. Change "and is" to "which is" to properly reflect zone intended.
42	11	II.E.1.a	---	---	T	**Error & Suggested Correction:** Section refers to "Minnelusa porosity zone injection zone" but elsewhere it is referred to as the "Minnelusa porosity injection zone." Change "Minnelusa porosity zone injection zone" to "Minnelusa porosity injection zone".
43	17	II.J.2	---	---	T	**Error & Suggested Correction:** Correct section to J.5.
44	17	II.K.1.b	---	---	T	**Error & Suggested Correction:** Section indicates that the MAIP calculation method is in Part II, Sec. J.4.b. Correct this to Part II, Sec. J.4.c.
45	19	Table 11	---	---	T	**Error & Suggested Correction:** Regarding cement interval for DW No. 1 (Figure 3), suggest removing "<".
46	27	IV.F.2	---	---	T	**Error & Suggested Correction:** In the 4th sentence, remove "the" in "top of the each."
47	28	IV.K.1	---	---	T	**Error & Suggested Correction:** Remove duplicate "Class V Class V".
48	34	Table 17.C	---	---	T	**Error & Suggested Correction:** Correct "for wells NOT actively injection well" to "for wells NOT actively injecting".

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49	39	VI.D.5	---	---	T	**Error & Suggested Correction:** Suggest removing "in" in "to surface in using".
50	46	VIII.B	---	---	T	**Error & Suggested Correction:** In the 1st paragraph below numbered list, it appears "(a)", (b), or (c)" should be changed to "(1), (2), or (3)".
51	46	VIII	---	---	T	**Error & Suggested Correction:** Part VIII, Sections J and K should be changed to Sections C and D.
						Fact Sheet Only
52	---	---	4, 12	1.1, 2.2	I, R	**Comment:** Waste generated on site will be 11e.(2) byproduct material regulated by NRC, not hazardous waste according to RCRA. The references stating that Powertech will treat fluid to below hazardous standards implies that hazardous fluid exists on site. Language in the draft permit already prohibits injection of hazardous waste into the Class V wells. **Requested Change:** Remove repeated references that characterize site waste as hazardous because this is not accurate; it is 11e.(2) byproduct material. This comment also applies to similar statements on page 1 and elsewhere in the Draft Cumulative Effects Analysis.
53	---	---	24-29	4.4.1 4.4.2 4.4.2.1 4.4.2.2 4.4.3	R, C, A	**Comment:** Assignment of 10% porosity to Minnelusa based on Greene (1993) data is incorrect and leads to a greatly exaggerated and inaccurate Radius of Fluid Displacement (ROFD) calculation. The well reference by Greene is located west of Rapid City approximately 53 miles distant from the site and near the outcrop of the Minnelusa. There are local data that would be more representative including the following: API 40-04720085; DENSITY POROSITY IN MINNELUSA AVERAGES 19% API 49-4522030; NEUTRON-DENSITY POROSITY AVERAGES 16% API 40-03320023; NEUTRON-DENSITY POROSITY AVERAGES 20% API 49-04521646; NEUTRON-DENSITY POROSITY AVERAGES 16% API 49-04522160; NEUTRON-DENSITY POROSITY AVERAGES 16% API 49-04522108; NEUTRON-DENSITY POROSITY AVERAGES 17% API 49-02720471; NEUTRON-DENSITY POROSITY AVERAGES 17% API 49-02720391; NEUTRON-DENSITY POROSITY AVERAGES 16%

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						Requested Change: Refer to log data from well with API No. 047-20085, which is within the project area. The average density porosity is 19% in the Minnelusa in the project area. Powertech requests that EPA recalculate ROFD accordingly in the fact sheet.
54	---	---	25	4.4.1	I, T, R	**Comment:** EPA states they calculated a lower critical pressure rise than Powertech for movement of fluid from the Minnelusa to Madison; therefore, less pressure is needed to move Injection zone fluids "upward into the Minnelusa" aquifer. **Requested Change:** Revise to "downward into the Madison".
55	---	---	24 28 38	4.4.1 4.4.2.2 5.4	R, C, A	**Comment:** Critical Pressure Rise calculations performed by EPA are incorrect. Cone of Influence (COI) data for Minnelusa-Madison are incorrect. EPA interpreted Figure D-10 from the Class V permit application to indicate that the potentiometric surface of the Madison at ground surface (Dewey Area) and 15 feet below ground surface (Burdock Area). As noted in the application (pp. 2-4 & 2-5), this map was based on little (if any) local data. In fact, it shows the contours approaching the project area are "inferred". Powertech used local data from the City of Edgemont wells to estimate the potentiometric surface of the Madison to be approximately 200 feet above ground surface, an estimate which is reasonable. The critical pressure rise was properly calculated on this basis in Tables 1 and 2 of the Class V permit application. It is noted that data now available for the closest state Madison observation well at Hell Canyon and shown in page 20 of the fact sheet, located approximately 9 miles away on the northwest side of the Dewey Fault, if extrapolated to the project area, indicate that the potentiometric surface of the Madison would be at least 50 to 100 feet above ground surface. Further, EPA incorrectly used maximum drawdown at the pumping well from the South Dakota DENR Report to the Chief Engineer on Water Permit Application No. 2685-2 (86.8 feet at Madison well at pumping rate of 551 gpm; Exhibit 001) and subtracted that depth from ground surface. Using this extreme scenario (which is 3.4 times the maximum rate needed by Powertech if Class V wells are drilled), the calculated drawdown at locations 1,000 feet distant from the pumping well is less than 35 feet after 20 years of continuous pumping at 551 gpm. In addition, as noted in the report, the calculation uses a transmissivity of 3,000 ft^2/d, which is likely low for the area. It states that other local data indicate transmissivity values for the Madison as high as 7,393 ft^2/d; therefore, drawdown could be even less.

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						The report states that 551 gpm produced from the Madison is maximum usage rate in the event that Class V wells were not used for disposal. It goes on to state that the use of disposal wells would reduce the need for Madison fluid to approximately 160 gpm. In either case, the report states that Madison drawdown would not be significant or impact the area. The report notes that drawdown measured in wells near high capacity municipal wells in Spearfish, Sturgis and Rapid City has been only a few feet or tens of feet. Powertech notes that the seven high capacity wells in the Spearfish area that are documented by the state produce 500-2,200 gpm per well or 6,980 gpm in total (South Dakota DENR December 2013 evaluation of Spearfish public water system, Exhibit 007 at 4). **Requested Change:** 1) Powertech requests that EPA recalculate Critical Pressure Rise and Cone of Influence using Edgemont data provided in the Class V permit application for the potentiometric surface of the Madison (pp. 2-4 & 2-5; Tables 1 & 2) and a porosity of 19%. 2) Powertech requests that EPA revise the drawdown to coincide with data from Exhibit 001 (e.g., no significant drawdown in Madison or 0 feet). 3) Powertech requests that the revised calculations be presented in a revised fact sheet.
56	---	---	31	Sec. 4.5	R	**Comment:** EPA stated that Class I standards were applied "due to the nature of the activity." Did EPA apply such standards to the BOR Class V well? Why is "activity" such a concern when the water will be treated to below 10 CFR Part 20 standards for release of radionuclides to the environment such that it cannot be classified as hazardous or radioactive material due to the permit conditions? Indeed, under regulation, the injectate should be classified as 11e.(2) byproduct material. **Request:** Powertech requests explanation of the "nature of activity" and regulatory basis for the statement and application of Class I standards or removal of such references. Powertech requests that statements describing the injectate be classified appropriately as "byproduct material."
57	---	---	32	Table 11	R	**Comment:** Why is this Table included in Class V when these confining zones apply to Class III? **Requested Change:** Powertech requests removing Table 11.

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58	---	---	---	---	C	**General Comment:** Powertech requests that based upon the included information that EPA update and issue with any subsequent documents all of the calculations within the fact sheet and draft permit and related documents using representative values of porosity and potentiometric surface. This includes calculation for: a.) Critical Pressure Rise b.) Diffusivity calculations c.) Radius of Fluid Displacement

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Attachment A

Exhibits

List of Exhibits (All exhibits provided as PDF files)

Exhibit 001	Report to the Chief Engineer on Water Permit Application No. 2685-2, Powertech (USA) Inc., November 2, 2012.
Exhibit 002	Fitzgerald, D.D., B.F. McGhee and J.A. McQuire, Guidelines for 90% Accuracy in Zone-Isolation Decisions, Society of Petroleum Engineers Paper 12141, Journal of Petroleum Technology, November 1985.
Exhibit 003	Groundwater Protection Council (GWPC), Induced Seismicity and the O&G Industry, January 23, 2013, figure modified by the Colorado Oil and Gas Conservation Commission. Original presentation retrieved June 2017: http://www.gwpc.org/sites/default/files/event-sessions/Bull_Jeff.pdf.
Exhibit 004	NRC (U.S. Nuclear Regulatory Commission), Source and Byproduct Materials License SUA-1600, Amendment 1, issued to Powertech (USA) Inc., November 1, 2016. Available from the NRC ADAMS document server under Accession No. ML16202A174: https://www.nrc.gov/reading-rm/adams.html.
Exhibit 005	Figure A-1 (Revised). Proposed Wellhead Schematic, Dewey-Burdock Disposal Wells, Petrotek Engineering Corporation, April 2017.
Exhibit 006	SD DENR (South Dakota Department of Environment and Natural Resources), Permit File for the Ozark #3 Coffing Class II Injection Well, API No. 40-033-05113. Retrieved June 2017: http://cf.sddenr.net/sdoil/index.cfm?index=New+Search.
Exhibit 007	SD DENR, Spearfish Public Water System Evaluation, December 5, 2013. Retrieved June 2017: https://www.cityofspearfish.com/document_center/PublicWorks/2013%20DENR%20Public%20Water%20System%20Evaluation.pdf.

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STRATA ENERGY INC
A WHOLLY-OWNED SUBSIDIARY OF PENINSULA ENERGY LIMITED
Ross ISR Uranium Mine
2929 New Haven Road
Oshoto, WY 82721
(307) 467-5995

July 19, 2017

Valois Shea
U. S. Environmental Protection Agency
Underground Injection Control Program, 8WP-SUI
1595 Wynkoop Street
Denver, CO 80202-1129

Re: Comments on Dewey-Burdock Draft Class III Area Permit

Dear Ms. Shea,

This letter provides comments by Strata Energy, Inc. (Strata) to the Dewey-Burdock Draft Class III Area Permit. Strata Energy is the operator of the Ross Uranium ISR Project in Crook County, Wyoming.

Strata is concerned the Draft Class III Area Permit includes many unprecedented requirements that are not included in Class III permits for any other ISR facilities within the U.S. These include post-restoration groundwater monitoring requirements, column testing requirements and additional excursion monitoring and corrective action requirements.

Groundwater restoration and excursion monitoring requirements at other ISR operations are imposed by the US Nuclear Regulatory Commission (NRC) or governing Agreement State and are sufficient to ensure that there will be no impacts to groundwater quality outside of the exempted aquifer that would affect the usability of the non-exempt waters. The requirements are prime examples of regulatory duplication of existing NRC license conditions.

The various unprecedented requirements in the Draft Area Permit are nothing more than a thinly veiled attempt to impose the previously proposed, but never approved 40 CFR Part 192 rulemaking. The Region 8 office is attempting to apply similar standards to those included in a proposed rule issued by the EPA in January 2017 – Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings. However, as you know, that rulemaking is not finalized. EPA must evaluate projects based on the existing statute, regulations, and long-standing guidance.

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STRATA ENERGY INC
A WHOLLY-OWNED SUBSIDIARY OF PENINSULA ENERGY LIMITED
Ross ISR Uranium Mine
2929 New Haven Road
Oshoto, WY 82721
(307) 467-5995

I urge Region 8 to re-evaluate its proposed requirements to ensure they are scientifically justified and in line with the existing rules and regulations.

Sincerely,

Ralph Knode, CEO
Strata Energy, Inc.

ED_005364K_00000157-00506

Daniel Bear Shield
testimony

Santee Sioux Nation

TRIBAL COUNCIL HEADQUARTERS

Chairman: Roger Trudell
Vice Chairman: David Henry
Treasurer: Derek LaPointe
Secretary: Stuart Redwing

108 Spirit Lake Avenue West
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RESOLUTION OF THE SANTEE SIOUX NATION

TO OPPOSE THE "DEWEY BURDOCK URANIUM MINING PROJECT," IN SUPPORT OF ALL TRIBES THAT ALSO OPPOSE THIS PROJECT.

Resolution Number: FY2017-35

WHEREAS, the Santee Sioux Nation is a federally-recognized Indian Tribe pursuant to Section 16 of the Act of June 18, 1934, (48 Stat. 984), codified at 25 U.S.C. 476, *et seq.*, as amended by the Act of June 15, 1935, (49 Stat. 378); and

WHEREAS, the Santee Sioux Nation is governed by a Tribal Council made up of elected representatives who act in accordance with the powers granted to it by its Constitution and By-Laws, as amended on August 30, 2002 by Secretarial Election; and

WHEREAS, the Santee Sioux Nation Tribal Constitution, with the inherent powers of self-governance, recognizes the Powers of Self Governance and authorizes the Tribal Council, under Article IV, Section 1 to promulgate and enforce ordinances providing for the maintenance of law and order and general welfare of the Nation; and

WHEREAS, the Tribal Council has RESPONSIBILITY OF MAINTAINING AND GUARANTEE THE HEALTH, SAFETY AND WELFARE OF IT'S PEOPLE OF THE SANTEE SIOUX NATION

WHEREAS, THE URANIUM MINING PROJECT BY DEWEY BURDOCK OR ANY OTHER COMPANY OR URANIUM MINING ACTIVITIES ARE DANGEROUS, UNCONSTITUTIONAL AND FURTHERMORE, DETRIMENTAL TO THE FUTURE OF OUR GENERATIONS TO COME.

WHEREAS, THE URANIUM MINING PROJECTS INCLUDING DEWEY BURDOCK HAVE NOT LEGALLY CONSULTATED WITH TRIBES IN MEANINGFUL WAYS TO MOVE THE PROJECT FORWARD SAFELY AND WITH THE PERMISSION OF TRIBES IN THE GREAT PLAINS REGION.

WHEREAS, THAT LAND IN, ON OR AROUND THE He' Sapa ARE FOREVER SACRED AND MUST BE PROTECTED BY ALL NATIONS OF THE SIOUX PEOPLE IN ACCORDANCE WITH Wope' OR NATURAL LAW AND TRIBAL LAW, APPROVED BY TRIBES.

WHEREAS, the Tribal Council determined that it is in the best interest of the Santee Sioux Nation AND FOR FUTURE GENERATIONS OF THE SANTEE SIOUX NATION AND OTHER NATIONS OF THE GREAT SIOUX NATION AND OPPOSE ANY URANIUM MINING IN, ON OR AROUND THE BLACK HILLS.

Santee Sioux Nation

108 Spirit Lake Avenue West
Niobrara, NE 68760-7219

WHEREAS, THE SANTEE SIOUX NATION TRIBAL COUNCIL, ELECTED BY THEIR PEOPLE, ALONG WITH TREATY COUNCIL REPRESENTATIVES OF THE ISANTI DAKOTA FURTHER OPPOSE URANIUM MINING AND THE DEWEY BURDOCK URANIUM MINING PROJECT.

NOW THEREFORE BE IT RESOLVED, the Santee Sioux Nation, acting through its Tribal Council, hereby approves and adopts THIS RESOLUTION, OPPOSING URANIUM MINING IN, ON OUR AROUND THE BLACK HILLS AND FURHTER OPPOSES THE DEWEY BURDOCK URANIUM MINING PROJECT.

BE IT FINALLY RESOLVED, THIS RESOLUTION WAS PASSED BY THE SANTEE SIOUX NATION TRIBAL COUNCIL IN A SPECIAL MEETING HELD AT THE TRIBAL HEADQUARTERS OF THE SANTEE SIOUX NATION ON APRIL 24TH, 2017 AND PASSED BY MOTION NUMBER 10 (TEN) AND ENACTED IMMEDIATELY.

CERTIFICATION

This will certify that the foregoing resolution was considered at a meeting of the Santee Sioux Tribal Council of the Santee Sioux Nation, duly cal.1led and held on the 24 day of April, 2017, and was adopted by a vote of 7 FOR, 0 AGAINST and 1 NOT VOTING OR ABSENT. A quorum of 8 was present.

Dated this ____ day of _____, 2017.

Roger Trudell, Chairman
SANTEE SIOUX TRIBAL COUNCIL

ATTEST:
Stuart Redwing, Secretary
SANTEE SIOUX TRIBAL COUNCIL

DEPARTMENT of ENVIRONMENT
and NATURAL RESOURCES

JOE FOSS BUILDING
523 EAST CAPITOL
PIERRE, SOUTH DAKOTA 57501-3182

denr.sd.gov

June 9, 2017

Valois Shea
U.S. EPA Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, CO 80202-1129

Subject: Administrative Record for the Dewey-Burdock Class III and Class V Injection Well Draft Area Permits

Dear Ms. Shea,

The South Dakota Department of Environment and Natural Resources (DENR) reviewed the available Administrative Record for the Dewey-Burdock Class III and Class V Injection Well Draft Area Permits and has enclosed comments for your consideration. If you have any questions about DENR's comments, please contact me at brian.walsh@state.sd.us or 605.773.3296.

Sincerely,

Brian J. Walsh
Environmental Scientist III
Ground Water Quality Program

Enclosure (1)

c: Mike Cepak, SD DENR, Pierre, SD

South Dakota Department of Environment and Natural Resources Comments on EPA's Administrative Record for the Dewey-Burdock Class III and Class V Injection Well Draft Area Permits

General:

1. An EPA issued Aquifer Exemption in South Dakota for Class III injection does not exempt groundwater from the requirements of the state's Groundwater Quality Standards (ARSD 74:54:01). However, it is DENR's position that if the Aquifer Exemption is finalized, South Dakota's groundwater quality standards will not apply within the exempted area. The state's Groundwater Quality Standards will apply and be enforceable on groundwater located outside of the exempted area.

2. DENR recommends EPA make the final Injection Authorization Data Package Reports and approval documents for the Class V and Class III permits publically available on EPA's webpage.

Comments on the Draft Class V Area Permit

3. **Page 4, Section A.1.d** – DENR recommends EPA evaluate the total dissolved solids (TDS) concentration on a well-by-well basis due to the variability of TDS concentrations in the area and to be consistent with the existing aquifer exemption process for the Class II disposal wells in the vicinity of the proposed project.

4. **Page 27, Section D** – DENR recommends EPA have an inspector on-site to witness the initial and ongoing mechanical integrity testing of the Class V Area Permit wells.

5. **Page 27, Section E** – DENR concurs with the permit limitation described in Section E – Class V disposal should only be authorized in non-USDWs (Underground Source of Drinking Water with TDS greater than 10,000 mg/L).

6. **Page 28, Section K** – DENR recommends EPA add a third sub-section to this section stating the permittee is prohibited from injecting waste fluids received from facilities other than from operations associated with the Dewey-Burdock Uranium In-Situ Recovery Project.

7. **Page 38, Section A** – This section states EPA will not approve the plugging and abandonment (PA) of any Class V well until all Class III wellfields have been decommissioned by the Nuclear Regulatory Commission (NRC). DENR recommends EPA revise this section to include the authority to authorize the immediate PA of a Class V well in the event a well loses mechanical integrity or otherwise fails and threatens a USDW.

8. **Page 44, Section D.11.i** – Revise this section to include the following contact information for reporting oil and chemical releases to DENR. DENR Ground Water Quality Program, Spills Section, (605) 773-3296 or after hours at (605) 773-3231.

Comments on the Draft Class III Area Permit

9. **Page 40, Part VII, Section C** – DENR recommends EPA have an inspector on-site to witness the initial and ongoing mechanical integrity testing of the Class III Area Permit wells.

10. **Page 40, Part VII, Section C.3** – South Dakota's Underground Injection Control Class II rule ARSD 74:12:07:18 requires a minimum 15 minute time period for pressure fall-off and wellhead pressure tests. Based on the rule and to ensure testing procedures are consistent with existing Class II wells in the vicinity of the proposed project, DENR recommends EPA require the internal mechanical integrity tests to run for a minimum of 15 minutes rather than the 10 minutes proposed in the draft permit.

11. **Page 45, Section H** - DENR recommends EPA add a fifth sub-section to this section stating the permittee is prohibited from injecting fluids received from facilities or operations other than those associated with the Dewey-Burdock Uranium In-Situ Recovery Project.

12. **Page 72, Section D.11.i** - Revise this section to include the following contact information for reporting oil and chemical releases to DENR. DENR Ground Water Quality Program, Spills Section, (605) 773-3296 or after hours at (605) 773-3231.

Comments on the Aquifer Exemption Draft Record of Decision

13. **Page 9, Option 2** – DENR recommends EPA select Option 2, plugging and abandonment of well 16. This is DENR's preferred option because it eliminates the possibility of well 16 being used as a drinking water well in the future.

14. **Page 12, Flow Rates Used in the Capture Zone Equation** – In the first paragraph of this section replace "South Dakota State Engineer's Office" with "South Dakota Department of Environment and Natural Resources".

15. **Page 14, Flow Rates Used in the Capture Zone Equation** – in the third paragraph on this page replace "State Engineer" with "South Dakota Department of Environment and Natural Resources".

16. **Page 18 – 19, Demonstration that the Injection Zone Fluids Will Remain within the Exempted Portion** – DENR recommends EPA include a bullet describing the Class III Area Permit mechanical integrity requirements as an additional factor supporting EPA's conclusion that adjacent USDWs will not be impacted.

Dr Don Kelly submitted 5/8/17

Introduced by: Subject: Referred to:

District 9 Medical Society Opposition to in-situ and open pit Uranium Mining in the Black Hills of South Dakota

South Dakota State Medical Association

1. WHEREAS, the value of Uranium has increased due to the current number and projected increase in Nuclear Power Plants in the world (436 currently and 90 projected for the next 15 years), and

2. WHEREAS, the Black Hills of South Dakota geology shows a rich source of Uranium and

3. WHEREAS, all aspects of Uranium mining have adverse environmental consequences and, the main proposed mining method for Black Hills sites in-situ and open pit mining that are known to contaminate groundwater (aquifers) and surface water resources with heavy metal and traces of radioactive uranium, and

4. WHEREAS, in areas where uranium mining has been performed in the past there is documented increase in rates of; testicular and ovarian cancer, leukemia, childhood bone cancer, miscarriages, infant death, congenital defects, genetic abnormalities and learning disorders in the population living near the mining site, and

5. WHEREAS, safe drinking water is a key pillar of public health, and

6. WHEREAS, water is in short supply in South Dakota to include the Black Hills and contaminating this natural resource can be an irreversible disaster to communities that depend on that aquifer, therefore be it

7. RESOLVED, that the South Dakota State Medical Society is

opposes the practice of in-situ and open pit mining of Uranium in geographical areas that are utilized by the farming or ranching communities or where there are human residents due to the adverse health conditions associated with the mining process, and be it further

8. RESOLVED, that the South Dakota State Medical Association Delegation, along with the Colorado Medical Society Delegation to the American Medical Association take to the AMA House of Delegates a resolution that would provide a similar opposition at the federal level.

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Dave Archambault II
Chairman

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Joe White Mountain Jr.
Bear Soldier District

Caroline Thompson
Rock Creek District

Robert Taken Alive
Running Antelope District

Samuel B. Harrison
Porcupine District

By email to shea.valois@epa.gov

June 19, 2017

Valois Shea
U.S. Environmental Protection Agency Region 8
Mail Code 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80802-1129

RE: Testimony of the Standing Rock Sioux Tribe in Opposition to the Dewey Burdock Class V UIC Permit Application

Dear Ms. Shea:

I write to submit written testimony of the Standing Rock Sioux Tribe in opposition to the Dewey Burdock Class V Underground Injection Control permit application, by Powertech USA, Inc. I request that this letter be included in the administrative record for the Dewey Burdick UIC permit application, and that our concerns be given full consideration by EPA.

The Standing Rock Sioux Tribe opposes the permit application for the following reasons:

(1) The proposed Dewey Burdock project will desecrate sacred lands and waters in the Black Hills, in violation of the Treaty of Fort Laramie of April 29, 1868. (15 Stat. 635);

(2) The Nuclear Regulatory Commission failed to conduct a good faith identification of traditional cultural properties in the project area, in violation of National Historic Preservation Act section 106 and 36 CFR §800.2(c)(2)(ii); and

(3) The draft permit will jeopardize groundwater and surface water in the Black Hills. The administrative record lacks adequate information to demonstrate that the affected aquifer formation and surface waters will be protected from contamination.

BLDG. 1 NORTH STANDING ROCK AVE. P.O. BOX D • FORT YATES, NORTH DAKOTA 58538
PHONE: 701-854-7201 or 701-854-8500 • FAX: 701-854-7299

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As discussed in more detail below, for these reasons, the permit application must be denied.

1. The Draft Dewey Burdock Permit Violates the 1868 Fort Laramie Treaty

The Treaty of Fort Laramie of April 29, 1868 is denominated "Treaty with the Sioux – Brule, Oglala, Minneconjou, Yanktonai, Hunkpapa, Blackfeet, Cuthead, Two Kettle, Sans Arcs, and Santee…" (15 Stat. 635). The Standing Rock Sioux Tribe is comprised of the Yanktonai, Hunkpapa, Blackfeet and Cuthead bands of the Lakota and Dakota Nation. Accordingly, Standing Rock is a signatory to the 1868 Fort Laramie Treaty and our Tribe is entitled to the rights prescribed therein.

The 1868 Fort Laramie Treaty established the Great Sioux Reservation. The boundaries of the Reservation were described in Article 2:

> The United States agrees that the following district of country, to wit, viz: commencing on the east bank of the Missouri River where the 46th parallel of north latitude crosses the same, thence along low-water mark down said east bank to a point opposite where the northern line of the State of Nebraska strikes the river, thence west across said river, and along the northern line of Nebraska to the 104th degree of longitude west from Greenwich, thence north on said meridian to a point where the 46th parallel of north latitude intercepts the same, thence due east along said parallel to the place of beginning; and in addition thereto, all existing reservations of the east back of said river, shall be and the same is, set apart for the absolute and undisturbed use and occupation of the Indians herein named, and for such other friendly tribes or individual Indians as from time to time they may be willing, with the consent of the United States, to admit amongst them; and the United States now solemnly agrees that no persons, except those herein designated and authorized so to do, and except such officers, agents, and employees of the government as may be authorized to enter upon Indian reservations in discharge of duties enjoined by law, shall ever be permitted to pass over, settle upon, or reside in the territory described in this article.

(15 Stat. 635).

The Black Hills are a significant part of our Treaty Reservation. In the negotiations for the 1868 Treaty, our forefathers emphasized the importance of the Black Hills to our Tribe and ensured that our Treaty Reservation included the Black Hills. This is sacred land. The Black Hills are integral to our creation story, and remain an important place for pilgramage and ceremony by our Tribal members. They are the spiritual center for the Lakota and Dakota Nation. The late David Blue Thunder, a prominent Sicangu ceremonial

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leader, explained that "The Black Hills are the heart of our home, and the home of our heart." (S. Hrg. 99-844, p. 234, statement of David Blue Thunder). It is akin to Jerusalem or Bethlehem, for Christianity and Judaism.

It is unlikely that EPA would suggest that uranium mining waste be permitted to be injected into disposal wells at those sacred places. EPA should not permit injection wells for uranium mining wells at the Dewey Burdock project location in the Black Hills.

Article 12 of the 1868 Treaty was supposed to ensure that our sacred lands would not be taken or despoiled without our consent:

> No treaty for the cession of any portion or part of the reservation herein described which may be held in common shall be of any validity or force as against the said Indians, unless executed and signed by at least three-fourths of all the adult male Indians.

(15 Stat. 638).

Nevertheless, as explained by the Standing Rock Sioux Tribal leader Aljoe Agard to the U.S. Senate Committee on Indian Affairs:

> Members of the committee, there are only two things that caused the government to break the 1868 treaty and deny our rights to the Black Hills. These two things were gold and greed. Once many white men learned there was gold in the Black Hills, they began to move in, driven by greed… Our efforts to protect land made the Government angry. The Government decided that we must give up our land. They tried everything – negotiations, threats, and then fierce attacks by the Army.
>
> Nothing worked. We refused to sell our land. How could we sell it? As Crazy Horse said, "One does not sell the earth upon which the people walk." And when General Custer tried to wipe us out, we defeated him at the great battle of Little Big Horn.
>
> The Government then decided to starve us into selling our land. They cut off all our rations and dent a commission to make an agreement with us. But the usual threats and bribes did not work. Under the 1868 treaty, no agreement was valid unless it was approved by three-fourths of the adult male Sioux. Less than 10 percent of our men approved the agreement.
>
> Having totally failed to either fight us, bribe us, or starve us into selling our land, Congress tried to pass a law trying to take our Black Hills. But it is my firm belief, and the firm belief of the Sioux Nation,

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> that these illegal acts did not succeed in tearing the sacred Paha Sapa away from us.

(S. Hrg. 99-844, pp. 44-45, statement of Aljoe Agard).

The title to the Dewey Burdock project area remains disputed by the Standing Rock Sioux Tribe. In the case of *United States v. Sioux Nation of Indians*, 448 U.S. 371, 387 (1980), the United States Supreme Court ruled that the taking of Sioux Nation treaty lands under the Act of February 2, 1877 and other laws violated the 5th Amendment of the United States constitution. In affirming a judgment of $108 million, the Court described the treatment of the Sioux Nation by the United States as "(a) more ripe and rank case of dishonorable dealings will never, in all probability, be found in our nation's history."

The Standing Rock Sioux Tribe and *Oceti Sakowin Oyate* have not accepted the award of money damages, and have continuously insisted that land restoration be the cornerstone of a settlement of the outstanding Treaty claims under the 1851 and 1868 Treaties. As explained by Aljoe Agard:

> It has been over 100 years since the Federal Government broke faith with our people and illegally tried to take the Black Hills from us… we will continue our fight for the restoration of our sacred lands. We have not given up in 100 years and we will not give up now.

(S. Hrg. 99-844, p. 44).

The Standing Rock Sioux Tribe and *Oceti Sakowin Oyate* have rejected a monetary settlement of the issues litigated in the *United States v Sioux Nation* case, and have insisted that land restoration be the cornerstone of any settlement. Consequently, there is a cloud on the title to the land impacted by the proposed Dewey Burdock project. There is uncertainty with respect to future land use in the area, as the *Oceti Sakowin Oyate* pursues our claim. Ultimately, the proposed Dewey Burdock UIC permit violates Article 2 of the 1868 Fort Laramie Treaty and must be denied.

The requirements of the United Nations Declaration of the Rights of Indigenous Peoples apply to the Dewey Burdock UIC permits. Article 29 paragraph 2 prohibits approval of the proposed permits without the consent of the Standing Rock Sioux Tribe:

> States shall take effective measures to ensure that no storage or disposal of hazardous materials shall take place in the lands or territories of indigenous peoples without their free, prior and informed consent.

(U.N. Doc. A/RES/61/295, Sept. 13, 2007).

In Article 37, paragraph 1, the U.N. Declaration requires compliance with our Treaty rights:

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> Indigenous peoples shall have the right to the recognition, observance and enforcement of treaties.

These requirements are incorporated into the laws of the United States, pursuant to Executive Order 13175 on *Consultation and Coordination with Indian Tribal Governments*. E.O. 13175 provides that:

> The United States continues to work with Indian tribes on a government-to-government basis to address issues concerning Indian… treaty and other rights. **Agencies shall… honor treaty rights** and other rights.

(65 Fed. Reg. 67249).

The proposed Class V UIC permit violates the 1868 Fort Laramie Treaty, the United Nations Declaration of the Rights of Indigenous Peoples and Executive Order 13175. The EPA must deny the Dewey Burdock permit application.

2. The Nuclear Regulatory Commission Failed to Properly Identify Traditional Cultural Properties

Section 106 of the National Historic Preservation Act establishes requirements for the identification of the impacts of a federal undertaking on cultural resources. Section 106 requires that:

> The head of any Federal agency… prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, shall take into account the effect of the undertaking on any historic property.

(54 U.S.C. §306108).

The identification efforts of historic properties under section 106 must include identification of traditional cultural properties of Indian Tribes in the area of potential effects. Under section 101(d)(6) of the act, Native American traditional cultural properties are eligible for inclusion on the National Registry:

> Property of traditional religious and cultural importance to an Indian Tribe or Native Hawaiian organization may be determined to be eligible for inclusion on the National Register (of Historic Places).

(54 U.S.C. §302706(a)).

The section 106 regulations prescribe the process for identifying historic properties and traditional cultural properties; evaluating their eligibility for the National Register;

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determining whether there are adverse impacts and resolving or mitigating those impacts. (36 CFR Part 800). The statute requires consultation with Indian Tribes on the identification of the traditional cultural properties which may be impacted by a federal undertaking:

> ...a Federal agency shall consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to property

(54 U.S.C. §302706(a)).

The regulations explain:

> Section 101(d)(6)(B) of the act requires the agency official to consult with any Indian tribe or Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by an undertaking.... **The agency official shall ensure that consultation in the section 106 process provides the Indian tribe or Native Hawaiian organization a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional, religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects.**

36 CFR §800.2(c)(ii).

The role of Tribes is further delineated for the identification of traditional cultural properties in section 4 of the regulations:

> In consultation with the SHPO/THPO, the agency official shall: (d)etermine and document the area of potential effects... (and) Gather information from any Indian tribe or Native Hawaiian organization... to assist in identifying properties, including those located off tribal lands, which may be of religious and cultural significance to them.

36 CFR §800.4(a).

The consultation and identification efforts must be reasonable and in good faith:

> ... in consultation with the... THPO, and any Indian tribe or Native Hawaiian organization that might attach religious and cultural significance to properties within the area of potential effects, **the agency official shall take the steps necessary to identify historic properties within the area of potential effects. The agency official**

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> **shall make a reasonable and good faith effort to carry out appropriate identification efforts,** (to include)… consultation.

36 CFR §800.4(b).

The EPA administrative record does not demonstrate compliance with these requirements. To the contrary, the NRC, as lead agency, in cooperation with PowerTech, refused to consult in good faith with the Tribes as required by the section 106 regulations. 36 CFR §800.3(f)(2). Early discussions about Tribal participation in the identification of traditional cultural properties went nowhere. NRC and PowerTech refused to establish a meaningful area of potential effects (APE) in consultation with the Tribes. They were uncooperative and unresponsive in the limited discussions on a scope of work and funding for Tribal traditional cultural properties surveys.

As a result, the NRC failed to properly identify traditional cultural properties that are directly or indirectly impacted by the proposed Dewey Burdock UIC wells in the APE, in violation of NHPA section 101(d)(6)(B), and 36 CFR §§800.2(c)(ii) & 800.4(a) & (b).

The Standing Rock Sioux Tribe THPO documented our Tribe's fruitless efforts for the requisite section 106 consultation and Tribal role in the survey of traditional cultural properties in the sacred Black Hills. The Standing Rock Sioux Tribal Historic Preservation Office sent correspondence dated February 4, 2014 to provide comments on a draft Programmatic Agreement. None of the comments were incorporated into the Final PA, and the stated concerns with the section 106 process were totally ignored. Correspondence from our THPO dated November 5, 2012 and August 30, 2011 likewise received no response. There was no consultation on the identification of TCPs.

As stated above, the Black Hills are sacred Treaty lands of the Standing Rock Sioux Tribe under the 1868 Fort Laramie Treaty. The NRC actually attempted to rely on consultations with the Three Affiliated Tribes of Fort Berthold and Turtle Mountain Band of Chippewa Indians for the consultation on TCPs of the *Oceti Sakowin Oyate*. The consultation requirement applies to "any Indian tribe that attaches religious and cultural significance to historic properties" (36 CFR §800.2(c)(2)(ii)) or "located on ancestral, (or) aboriginal… lands." (36 CFR §800.2(c)(2)(ii)). For the Black Hills, that applies to the Oceti Sakowin Oyate and Northern Cheyenne Nation. The NRC cannot simply select **any** Indian Tribe willing to consult on its project. That is what occurred with Dewey Burdock.

The Final Programmatic Agreement acknowledges but mis-portrays and attempts to minimize the significance of the lack of good faith efforts in identifying TCPs. It states on page 3:

> … the parties were unable to reach agreement on the scope and the cost of the Tribal survey.

That does not obviate the need for compliance with the section 106 regulations. Nevertheless, the NRC refused to engage in the good faith consultation and identification

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efforts that are required. Ultimately, the NRC failed to adequately consult with the Standing Rock Sioux Tribe THPO in the identification and evaluation of Traditional Cultural Properties in the Dewey Burdock project area. Consequently, the EPA must deny the PowerTech UIC permit application.

3. The UIC Permit will Jeopardize Groundwater and Surface Water in the Black Hills

The administrative record fails to support the contention that the Dewey-Burdock injection wells will not result in the release of contaminants into the Minnnelusa formation, or to surface water in the project area. Available data demonstrates that there is potential communication between the Minnelusa and Madison aquifers, and with the surface water.

The U.S. Geologic Survey has explained:

> Ground and surface-water resources in the Black Hills area are highly inter-connected. The quality of the surface water can affect the quality of ground water, and vice versa… The Madsion, Minnelusa, and Minnekahta aquifers are especially sensitive to contamination, because of secondary permeability and potential for streamflow recharge.

(USGS, *Atlas of Water Resources in the Black Hills Area, South Dakota*, Water Resources Investigations Atlas HA-747, 2002, pp. 59, 71).

The EPA acknowledges that there is downward flow from the Minnelusa formation into the Madison formation, but discounts the potential for migration upward. (EPA, Dewey-Burdock Class V Draft Area Permit Fact Sheet, p. 30). The Madison aquifer is the source for artesian springs in this area. Contamination of the Madison formation potentially impacts surface water through artesian springs. According to USGS,

> Aquifer interactions can occur at artesian springs, which discharge about one-half of average recharge to the Madison and Minnelusa aquifers in the Black Hills area. Various investigators have hypothesized that the Madison aquifer is the primary source for many artesian springs.

(Naus et al, *Geochemistry of the Madison and Minnelusa Aquifers in the Black Hills Area, South Dakota*, Water Resources Investigations Report 01-4129, 2001, p. 2).

The potential pathway for migration of injectate into the Madison aquifer (per EPA) and then into surface water (per USGS) is improperly discounted by EPA. The agency has failed to give proper consideration of the potential existence of pathways resulting from unidentified faults or future seismic activity. The EPA finding that "the nearest potential pathway for fluid movement out of the injection zone in the Dewey area is the Dewey

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fault," is not supported by adequate data, in light of the regional seismology. (EPA, *Dewey Burdock Class V Draft Area Permit Fact Sheet*, p. 26).

Unidentified faults and abandoned test wells in the project area provide potential pathways for the migration of contaminants into adjacent aquifer formations and artesian springs, which potentially impacts surface water. For these reasons, the Dewey Burdock UIC Class V permit application must be denied.

Sincerely,

Dave Archambault II, Chairman
Standing Rock Sioux Tribe

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DEPARTMENT OF GAME, FISH, AND PARKS
Division of Wildlife – Regional Office
4130 Adventure Trail
Rapid City, South Dakota 57702-0303

June 19, 2017

Valois Shea
U.S. EPA Region 8
1595 Wynkoop Street
Denver, Colorado 80202-1129

RE: Public Notice: Administrative Record for the Dewey-Burdock Class III and Class V Injection Well Draft Area Permits

Dear Valois,

South Dakota Department of Game Fish, and Parks (GF&P) reviewed information provided in the *Public Notice: Administrative Record for the Dewey-Burdock Class III and Class V Injection Well Draft Area* and "Additional Administrative Record Documents." Agency comments result exclusively from evaluation of the analysis found in the Additional Administrative Record Documents and specifically the *Draft Cumulative Effects Analysis* (Administrative Record). Our evaluation identifies issues listed below.

- South Dakota Mine Permit
- Avian management planning
- Affected environment
- Species of state concern
- Waste disposal options
- Process pond mitigation

South Dakota Mine Permit

Wildlife mitigative strategies presented in the Administrative Record are tiered to Powertech's proposed mine permit. EPA must recognize Powertech has only applied for a state mine permit. The proposed state mine permit application has no state standing. Under the SD Mined Land Reclamation Act (SD Codified Law Chapter 45-6b), the Board of Minerals and Environment (BME) is charged with issuing state permits and requirements for ISR facilities. In November of 2013, the BME discontinued hearings on Powertech's proposed state mine permit application until other state and federal agencies finalized their respective permitting. Powertech proposed mine permit application is still pending and no state mine permit exists. The Administrative Record must not reference a state large scale mine permit.

Avian Management Plan

The Administrative Record identifies an avian management plan. At this time, the management plan is conceptual, has not undergone agency review and essentially does not exist; therefore the extent and effectiveness of mitigation cannot be substantiated.

The Dewey Burdock Project proposes a plan to mitigate impacts to avian species during operations, however, special emphasis is given to bald eagles. Monitoring wells, a processing plant, production well fields, disposal facilities, and a supply water well are all currently proposed within a buffer established for an active bald eagle nest. During the life of the project, seasonal restrictions and unspecified mitigative measures are proposed for the facilities. The Administrative Record does not analyze the viability of seasonal mitigation measures on continuously operated facilities. Analysis also does not consider the questionable effectiveness of seasonal mitigation during times of urgent maintenance or situations requiring emergency repairs on continuously operated facilities. Mitigation measures also rely on individual eagle tolerance; as tolerance is known to vary greatly among individuals. Unsuccessful mitigation risks a disturbance take. Analysis in the Administrative Record does not recognize the necessity of bald eagle take permitting.

Administrative Record fails to recognize or establish the relationship between the site's prairie dog colonies and avian management. The site's prairie dog colonies are the presumed forage base and home range for bald eagles and other avian species. The Administrative Record does not describe the project's direct and cumulative effects on prairie dog colonies, and collateral impacts on bald eagles and other avian species.

Authorization of UIC activities on the site provides a reasonable risk of unpermitted bald eagle disturbance take. Seasonal mitigation in the discernible method of nesting bald eagle protection but USFWS take permitting is done "only" if necessary. Obtaining a permit out of necessity implies a response to a situation that may already has constituted disturbance or take. Operation of UIC permits in important bald eagle habitat, and the uncertainty associated with a seasonal mitigation strategy at a continuously operated facility will result in the probability of take. The Administrative Record does not assess the probability of bald eagle take during project operation.

Affected environment

The Administrative Record does not include the site's available wildlife data in describing impacts to ecological resources. Scant use of citations in the Administrative Record makes it difficult to determine what available wildlife study data is used to describe the affected environment. It is reasonable to believe that wildlife data is only as current as the date of application. However it must be noted that it has been almost 10

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years since the EPA has started its UCI evaluation. During that time, new wildlife and habitat data have enhanced understanding of the site's ecological conditions. Also, recently listed ESA species may exist on site. The Administrative Record did not adequately describe the affected environment or impacts to ecological resources.

Additional wildlife information includes:

Prairie dog colonies: The initial baseline wildlife survey documents only 3 of the 7 prairie dog colonies known to exist in the wildlife study area. The significance of the ecologic function of both the existing and newly identified prairie dog colonies is unknown. Direct and cumulative UIC impacts on prairie dog viability are not considered in the Administrative Record.

Bats: The USFWS ESA listing of the Northern Long-eared Bat is a significant change since permitting began on the Dewey Burdock Project. The Administrative Record does not address the recent ESA listing or the habitat potential of the project area's historic mine workings.

Burrowing owls: Recent wildlife surveys by Powertech have identified burrowing owls use in one of the project area's prairie dog colonies. The extent of burrowing owl use at the site's existing or newly discovered colonies is unknown.

Bald eagle: The bald eagle nest identified in the initial wildlife survey is no longer in use, but an alternated nest is now the primary nest site. Powertech proposes construction and facility operation within active bald eagle nest buffers. The Administrative Record does not consider bald eagle disturbance take resulting from project effects on forage areas and home range.

Reptiles and amphibians: The rational to determine impacts to short-horned lizard on page 149 of the Draft Cumulative Effects Analysis is unfounded. The rational presumes that native prairie, the preferred habitat of lizards, does not exist on rangelands and since impacts are on rangelands, lizards will not be impacted. The rational originates from Section 6.0 'Impacts To Land Use'. Baseline study from the project identifies native vegetation and "widespread occurrence" of an unknown lizard species. The Administrative Record does not identify native vegetation, cumulative effects of conversion of native vegetation, or direct impacts on lizards.

Species of state (South Dakota) concerns

Section 14.2, "Species of State and Tribal Interest: The Short-Horned Lizard" does not describe species of state interest. For a complete listing of state threatened, endangered or rare species see: http://gfp.sd.gov/wildlife/threatened-endangered/ .

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Waste disposal options

The Administrative Record does not analyze the potential for combined disposal methods (deep well and land application), or the potential for onsite disposal of wastes produced off site. Section '10.1 Overview of Operations' in the Class III permit states that Powertech may use land application in conjunction with deep disposal wells or by itself.

Process Pond mitigation

The Administrate Record is silent on the ecologic impact of process ponds containing toxic solutions or viability of mitigation measures. Section '14.0 Impacts To Ecological Resources' did not include analysis of direct and cumulative impacts to migratory birds and bats exposed to toxic solutions contained in the projects process related ponds.

If you have question please contact me at any of the numbers listed.

Sincerely

Stan Michals -Energy and Minerals Coordinator
SD/Game, Fish and Parks
[redacted]

"Serving People, Managing Wildlife"

The Division of Wildlife will manage South Dakota's wildlife and fisheries resources and their associated habitats for their sustained and equitable use, and for the benefit, welfare, and enjoyment of the citizens of this state and its visitors.

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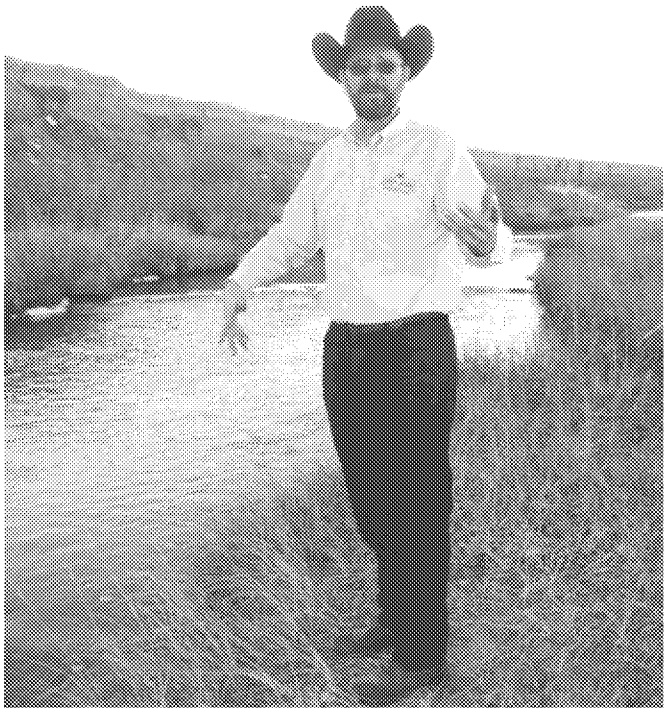
Native Sun News: Non-Indians choose sides in uranium fight
Wednesday, September 25, 2013
Filed Under: Environment | National
More on: black hills, cheyenne river sioux, native sun news, oglala sioux, south dakota, uranium

The following story was written and reported by Talli Nauman, Native Sun News Health & Environment Editor. All content © Native Sun News.

Susan Henderson sides with Native Americans in advocating water rights remain in South Dakota. PHOTO BY/Talli Nauman



Mark Hollenbeck sides with Canadian company in promoting uranium mining in Inyan Kara Aquifer.PHOTO BY/Talli Nauman

Cowboys and Indians choose sides

By Talli Nauman
Native Sun News
Health & Environment Editor

PART 1

EDGEMONT- Mark Hollenbeck and Susan Henderson are both cattle ranchers in Fall River County, South Dakota. They are both listed under "H" in the Edgemont telephone directory. They get their mail from the same post office in this railroad town 50 miles west of the Pine Ridge Indian Reservation. That's where their similarities end.

Edgemont is at Ground Zero for the nuclear industry in Lakota territory: It is the headquarters for the first in-situ uranium mining proposed in the state, and therefore the metaphoric epicenter of a clash over whether to go ahead with the project.

Hollenbeck, whose ranch is north of town, not only sides with the industry, but he is its local face and one of its champions nationally. Henderson, whose ranch is south of town, sides with Native American constituents: Recognizing herself as the "baby poster-child" for the opposition, she vows that the mining will proceed only over her dead body.

Together with Lakota allies, Henderson will go head-to-head with Hollenbeck and colleagues at a week's worth of state hearings on the large-scale mining permit, set to open with public comments at 10 a.m., Sept. 23 at the Ramkota Conference Center in Rapid City.

Friction is mounting as the state Mining and Environment board hearings and others loom on the mining proposal by Hollenbeck's employer, a Canadian holding company called Powertech Uranium Corp.

Conflict about the front end of the nuclear power chain is nothing new to the tiny town of Edgemont, which takes its name from its location on the extreme southwestern edge of the Black

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Hills.

Silver King Mines, exploited by the local husband-and-wife team of Roy and Virginia Chord, started producing the raw material for atomic bombs here in the 1950s.

In the late 1970s, the likes of Union Carbide and Tennessee Valley Authority took over the ore body and set up shop to supply the energy market's demand for yellow cake. Then the bottom dropped outta the market, and their plans ran amuck.

Again poised for a revival, uranium mining and milling will get underway in 2014, if Powertech Corps' wholly owned subsidiary Powertech (USA) Inc. has its way on the 10,000-acre Dewey-Burdock tract, so-named after two Burlington Northern and Santa Fe Railroad whistle stops demarcating it.

Back in the day, the U.S. government encouraged the mining, kept scarce records, and imposed minimal regulations. The resulting scars are visible. The U.S. Forest Service map shows 200 abandoned uranium mines in the Dewey-Burdock area. Powertech claims 4,000 exploration drill-holes dot the tract.

In the 1970s, ad hoc organizations, including the Black Hills Energy Coalition, Black Hills Alliance, Women of All Red Nations, and Miners for Safe Energy, banded together against minefield redevelopment.

Their opposition and advocacy of alternative renewable energy options drew tens of thousands of participants for a 17-mile march and Black Hills International Survival Gathering encampment in 1980. They successfully held the mining at bay until the uranium market downturn shortly thereafter.

When uranium prices rose again during a 2003-2007 speculation bubble attributed to aspirations for nuclear power in China and India, it motivated Powertech and other startups to invest in mineral claims.

This time around, the mining interests face challenges from 23 Sioux tribal governments; Native American non-profits Owe Aku (Take Back the Way) and Defenders of the Black Hills; statewide organizations including Dakota Rural Action, South Dakota Peace and Justice, and Democracy in Action, as well as local groups, such as Clean Water Alliance and Action for the Environment; and individual landowners wary of the proposal, among them Wild Horse Sanctuary proprietor Dayton Hyde, and of course, Henderson.

Powertech (USA) Inc. bought claims in 2005 and began filing applications to reopen the mines in 2009. At the time of the initial purchase, uranium was netting $300 a kilogram, and hopes were high for an upward trend.

Powertech told its potential investors about the great seam of uranium on the southwestern roll front of the Black Hills. The company called the Dewey-Burdock prospect its flagship operation.

After the South Dakota Department of Environment and Natural Resources (DENR) twice rejected Powertech's deep underground injection water discharge plan, Hollenbeck went to the statehouse in Pierre to lobby for streamlining the application process.

The 2011 South Dakota Legislature responded by suspending the state agency's accountability in the matter. Lawmakers hewed to arguments that the state supervision was a duplication of federal controls. An attempt to reestablish the state's jurisdiction failed in the 2012 legislature, leaving the Class III Underground Injection Control to Region 8 EPA, based in Denver.

Then came the Fukushima nuclear plant meltdowns and a market slump that could prove to be an even harsher antagonist than the public opinion being marshalled against the mining in the comment period leading up to the scheduled 2013 regulatory board decisions.

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"The earthquake and tsunami in Japan in March 2011, with the resultant damaging effect on that country's nuclear reactors, negatively affected public opinion regarding nuclear energy as a safe and viable source of power," Powertech Uranium Corp. stated in a "Management Discussion and Analysis" briefing paper in July 2012.

"Since the occurrence of these events, the company and other companies engaged in uranium exploration and development have experienced a reduction in the trading prices of their shares on applicable stock exchanges. Further, a number of heads of government and their legislative bodies announced reviews and/or delays of plans to develop new nuclear power facilities," Powertech admitted.

Among them are Germany, which immediately closed eight reactors and plans to shutter the rest by 2022. Austria had long-since set the trend for developing country phase-outs of nukes, beginning in 1978. Sweden followed suit in 1980, Italy in 1987, and Belgium in 1999. Switzerland and Spain have a ban on the construction of new reactors. Japanese and Taiwanese heads of state advocate reducing dependence on atomic energy.

By 2013, uranium's value was down to $42 from $300 a kilogram in 2007. Powertech shares were worth 30 times less than the $1.63 of their trade value at the acme of the bubble, hitting an all-time low of five cents in July.

According to the company's first-quarter financial statement, its revenues were down to $1.38 million and it was spending them at the rate of about $350,000 a month, a little less than what the state of South Dakota would require for an annual construction bond -- just enough to cover potential road damage from the first year of mining operations.

In August, Powertech announced it procured a $500,000 loan from a new 17-percent shareholder, Azarga of the British Virgin Islands, with headquarters in Hong Kong. The shot of fresh cash allowed the business partners to pursue permits.

The South Dakota Board of Minerals and Environment set hearing dates for interveners registered in the contested large-scale mine permit process for Sept. 24-26 daily at the Ramkota, following the Sept. 23 public comment period. The interveners' testimony was set to continue Sept. 27 at a time to be determined in Rushmore Plaza Civic Center's Alpine Ponderosa Room.

The board also set Nov. 11-14 to reconvene the hearing at the Ramkota and Nov. 15 at Rapid City's Hilton Garden Inn, if necessary to consider all testimony.

The hearings could be postponed due to a motion for continuance filed by the interveners.

Meanwhile, the state's Water Management Board set 8:30 a.m. Oct. 7 as the time to start taking public testimony on Powertech's two water rights permit applications and its surface water discharge plans at a hearing in the Ramkota lasting through Oct. 11. That hearing was scheduled to reconvene Oct. 28 -Nov. 1, in the same venue, if needed.

Once a board reaches its decision, either proponents or opponents can appeal the administrative resolution to the state judicial system.

In order to begin mining, Powertech also will have to obtain several federal authorizations.

For one, Powertech will need a uranium recovery license from the Nuclear Regulatory Commission. Toward that end, NRC's draft supplemental environmental impact statement for Powertech's operation remains to be finalized. The drafters on the NRC staff state that the project will have little economic effect, "small to moderate" impacts on water and other conditions, and a "large" impact only on cultural resources, mainly Native American artifacts.

Section 106 of the National Historic Preservation Act, requiring consultation between the federal government and tribes on these resources, means the impact statement cannot be concluded

until formal negotiations between the parties is achieved.

Meanwhile, the federal agency's staff has arrived at a preliminary recommendation to proceed with the mine licensing under 75 conditions. It determined that "the benefit from building and operating the facility would outweigh the economic, environmental, and social costs.

"Unless safety issues mandate otherwise, the preliminary NRC staff recommendation to the commission related to the environmental aspects of the proposed action is that a source and byproduct material license for the proposed action be issued as requested," staff said.

That granted, although Powertech no longer has to deal with state oversight to dispose mine waste water deep in aquifers, the company needs Class III or Class V Underground Injection Control permits from EPA.

In addition, Powertech still has to obtain other federal permits, including an exemption from the Clean Water Act in order to mine uranium.

The government provides an escape valve to industry by granting requests to exempt portions of the aquifers designated for uranium mining from having to comply with standards for underground drinking water.

That way, Powertech will have the legal duty to monitor only the leaks or spills outside the exempted area and "restore groundwater parameters affected by ISR operations to levels that are protective of human health and safety." ISR stands for in-situ recovery. It is another name for in-situ leach mining (ISL) or solution mining. In this case, the process entails building wells to extract water from the Inyan Kara Aquifer, injecting that water under high pressure to dissolve uranium in the aquifer, pumping the solution to the surface, processing the mineral into a concentrated product called yellow cake for storage and shipment, purifying the water, releasing most of it on the surface or underground, and disposing of toxic wastes off-site.

The technology is in use just across the state lines in Wyoming and Nebraska, but neither Powertech nor the state of South Dakota has experience with it.

The issue of most concern to Henderson is the water. The company has applied to take 8,500 gallons a minute from the Inyan Kara Aquifer and 551 gallons a minute from the Madison Aquifer over a 20-year-period.

That's almost 13 million gallons per day, according to the South Dakota Department of Environment and Natural Resources (DENR). Rapid City used 11.35 million gallons per day in 2012, the municipal Water Division statistics show. If Powertech bought the water from the city, the price tag would be $1 million a year. Water permits to the company will provide it free. Hollenbeck's assurances that the company will only consume or "bleed" about 2 percent and put back the rest do not move Henderson.

"Most of the ranchers in this area have Inyan Kara wells," Henderson says. "Mine is in the Lakota Sandstone in the Inyan Kara. "The effect of this is that you'll put these guys out of business."

The Oglala Sioux Tribe contends that both surface and underground water could be negatively impacted.

"The tribe is correctly trying to protect the Cheyenne River because the Cheyenne ultimately makes its way down into the reservation, and the Indians are smart enough to know that their livestock water comes from that," Henderson says.

"Plus they also have Inyan Kara wells and some Madison wells. If you look at the reservation, there's a lot of cattle operations down there and they need that water just the same way we do," she adds.

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The Cheyenne drains both the Pine Ridge and Cheyenne River Indian Reservation before joining the Missouri River.

Oglala Sioux Tribal Historical Preservation Officer Wilmer Mesteth, who will offer testimony at the state Mining and Environment Board hearing, notes that the area of Powertech's application includes water resources "known as favored camping sites of indigenous peoples, both historically and prehistorically, and the likelihood that cultural artifacts and evidence of burial grounds exist in these areas is strong."

IS BLACK HILLS URANIUM MINING ANY DIFFERENT?
Clean Water Alliance spokesperson and Oglala Lakota College Professor Lilias Jarding contends that no ISL mine has ever been able to return the mine water to its original condition before mining.

Hollenbeck counters that the water around the Dewey-Burdock ore body isn't even fit for livestock consumption to begin with, and the mining will extract uranium, reducing the seam's radiation.

"Oxygen and carbon dioxide are the only things we're gonna inject," he says. "Why would that be degrading their water quality?"

Trace toxic minerals would be disturbed along with the uranium, and their disposal would be via transportation to out-of-state toxic dumps.

"You cannot reclaim anything to its original condition. You can reclaim stuff to its original use and everyone has been reclaimed to its original use," Hollenbeck contends.

Oglala Lakota College Math, Science and Technology Department Chair Hannan LaGarry explains in testimony for the state Water Management Board hearing why rock strata fractures created by the ancient Black Hills geological upheaval create a risky scenario for in-situ leaching.

The aquifers that have no uranium in them could accidentally be polluted by transference of water from the Inyan Kara.

"I am not against uranium mining in fact or principle," LaGarry states." This issue isn't about uranium. It's about protecting the region's water supply, and the future inhabitability of southwestern South Dakota and adjacent Nebraska.

"In order for ISL mining to be considered safe, the uranium-bearing, mined strata must be isolated from rocks above and below by confining layers. There are three principal pathways through which contaminated water could migrate away from the uranium-bearing strata through adjacent confining layers.

"The first, and most common, are along joints and faults. Powertech concedes that there are breaches in the upper confining layers. The third pathway for mine fluids to breach containment is through perforations made by wells. In Powertech's application, they repeatedly mention 'thousands of exploratory wells,' along with wells that supply drinking water and water for livestock.

"Once mining begins, and minerals are being extracted, flow pathways within the uranium-bearing rocks will change. Once into adjacent water-bearing strata or the land surface, contaminants can enter rivers and flow downstream with each successive rain event, or flow down gradient into other water supplies."

Early-on in the application process, Powertech pledged in writing to provide Madison water to any local rancher who experiences detrimental effects from the aquifer mining.

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Still, the Hot Springs City Council in Fall River's county seat and the Rapid City Council in the Black Hills' largest population center voted overwhelmingly to oppose the project. Rapid City's Aug. 19 resolution states, "Due to the potential risk to the Madison Aquifer, the city opposes the proposed in-situ mining of uranium in the Black Hills by Powertech Uranium Corp."

In November 2012, Fall River County Commissioners voted to intervene in the state hearings, but in 2013 reversed the decision, arguing the issue was too complex for them.

(Contact Talli Nauman is the Health and Environment Editor for Native Sun News and she can be contacted at talli.nauman@gmail.com)

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Native Sun News: Tribal members rally against uranium mine
Thursday, September 26, 2013
Filed Under: Environment | National
More on: black hills, native sun news, oglala sioux, south dakota, uranium

The following story was written and reported by Talli Nauman, Native Sun News Health & Environment Editor. All content © Native Sun News.

Kyle native Sara Jumping Eagle and her daughter Tokata Iron Eyes demonstrated against proposed aquifer mining for uranium at permit hearings in Rapid City on Sept. 23. Photo by/Talli Nauman

Mesteth challenges uranium proposal

By Talli Nauman
Native Sun News
Health & Environment Editor

PART I | PART II

Rapid City — Tribal members joined other Black Hills area residents who rallied and testified in a week of state hearings ending Sept. 27 about a permit request for South Dakota's first in-situ uranium mining and yellow-cake processing plant.

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Oglala Sioux Tribe Historic Preservation Officer Wilmer Mesteth's testimony challenged the project on the basis of ancestral claims and legal issues. "The numbers and density of cultural resources at the site proposed for mining demonstrate that the mining activity is likely to adversely impact the cultural resources of the Oglala Sioux Tribe," said Mesteth in testimony submitted regarding the application for a large-scale mining permit.

The local Clean Water Alliance, representing some of the dozens of interveners in the contested case hearings, submitted Mesteth's written statement to the Board of Mining and Environment for the state Department of Environment and Natural Resources hearings.

Native American musicians, including award-winning flautist Cody Blackbird and the Pine Ridge drum group Oyuh'pe, led a "Keep Our Water Clean and Our Hills Green" pep rally concerning the project at the Dahl Arts Center on Sept. 22, the eve of the hearings' first day.

"It's pretty sad when we have to fight for a basic human right like clean water," Blackbird said, launching into the "Uranium Blues" with lyrics by accompanying local bassist Mike Reardon.

The permit promoter Powertech (USA) Inc. seeks rights to 551 gallons per minute of Madison Aquifer water and 8,500 gallons per minute of Inyan Kara Aquifer water.

"This is ludicrous," remarked Native American archeologist Ben Rhodd, during the musical event sponsored by the Dakota Rural Action Black Hills Chapter at the Dahl Arts Center. "We don't have that much water. What are our children and grandchildren going to do?" he asked.

The Rapid City Council failed in a request to be admitted as an intervener in the case, then appealed the decision on the basis of environmental concerns over the Rapid City municipal water supply. The council has passed a resolution against Powertech's proposal because the city's water comes from the Madison Aquifer.

The Mining and Environment Board decision to limit public comment to two hours during the scheduled full week of hearings sparked a protest demonstration in the hours leading up to the proceedings that opened on Sept. 23.

Powertech, (USA) Inc., a wholly-owned subsidiary of the Canadian penny-stock holding company Powertech Uranium Corp., has offered 99 construction jobs for the project's first year, with employment tapering off afterward in the 20-year aquifer-mining endeavor. The proposed location is the 10,000-acre Dewey-Burdock tract near Edgemont, in Custer and Fall River counties, adjacent to the Pine Ridge Reservation and upstream from both the Pine Ridge and the Cheyenne River Indian Reservation.

"The lands encompassed by the Powertech proposal are within the territory of the Great Sioux Nation, which includes the band of the Oglala Lakota (Oglala Sioux Tribe) aboriginal lands," Mesteth noted. "As a result, the cultural resources, artifacts, sites, etc. belong to the tribe," his written statement said.

Powertech, in its initial Environmental Report to the federal government, stated that impacts to cultural resources would be "none." The federal Draft Supplemental Environmental Impact Statement (DSEIS) released in 2013 described the project's largest effect as that involving the cultural resources.

Eighteen sites in the project area are eligible or potentially eligible for the National Register of Historic Places, according to Powertech's state large-scale mining application. Innumerable others remain to be cataloged.

"Avoidance of 12 of these sites is possible during the construction phase and, therefore, no impacts are anticipated," the DSEIS noted. "Avoidance and mitigation, such as fencing and data recovery excavations, are recommended for the remaining six.

"In addition, avoidance is recommended for two unevaluated historic burial sites located in proximity to proposed construction activities" pending further studies. "Avoidance and mitigation is also recommended for four unevaluated sites" located within 250 feet of proposed well fields or mine waste water discharge areas," federal records indicate.

Mesteth objected to the exclusion of the Oglala Sioux Tribe from the study. "The failure to involve the tribe in the analysis of these sites, or to conduct any ethnographic studies in concert with a field study further exacerbate the impacts on the tribe's interests as a procedural matter in negatively affecting the tribe's ability to protect its cultural resources," he contended.

Clean Water Alliance failed in a motion to delay the proceedings until after pending federal permit rulings by the EPA and Nuclear Regulatory Commission (NRC).

Those agencies must afford government-to-government consultation between U.S. and tribal officials for this project, under the Native American Graves Protection and Repatriation Act, National Historic Preservation Act, National Environmental Protection Act, and others laws.

Powertech failed in a motion to exclude interveners' documents from consideration by the Mining and Environment Board. The board determined that eligibility of documents would be decided on a case-by-case basis.

The company and the South Dakota State Archeologist signed a Memorandum of Agreement (MOA) in September 2008, establishing "procedures to avoid or mitigate potential effects on archaeological and historic sites" in accordance with state law.

Assistant State Archaeologist Michael Fosha contracted Augustana College in Sioux Falls to conduct studies in 2007 and 2008, which identified 217 sites, 81 of which were yet to be evaluated, according to state records.

Powertech mentioned only 190 in the Environmental Report, Mesteth complained. "This discrepancy and the failure of a full evaluation of some 81 sites within the proposed mining area evidence a potentially serious failure to conduct a proper cultural resources study," he said.

The company has promised the federal government that it "will administer a historic and cultural resources inventory before engaging in any development activity not previously assessed by NRC or any cooperating agency."

It "will immediately cease any work resulting in the discovery of previously unknown cultural artifacts. Any such artifacts will be inventoried and evaluated, and no further disturbance will occur until authorization to proceed has been received.

"Any disturbances also will be addressed in compliance with Powertech (USA)'s MOA with the South Dakota State Archeologist and any future MOAs," the company has pledged. The "future" agreements include those contemplated with tribal governments.

Mesteth argued, "The United States government has assured that the cultural resources of a tribe will be protected, even when they are not within reservation boundaries. The discovery of an Indian camp and prehistoric artifacts in the tribe's treaty and aboriginal territory at issue in this application implicates important tribal interests such that the tribe's rights are threatened by the applicant's mining activity in its aboriginal territory."

For example, he said, Oglala Sioux Tribe member Garvard Good Plume, his great grandfather, his mother and his father used, dwelled upon, and camped on the lands subject to the Powertech mining proposal. His grandparents and their relatives were buried there.

"The tribe cannot verify that a comprehensive study identifying all such resources has been adequately conducted. No such study has been conducted by the tribe," Mesteth claimed.

Archeologist Rhodd identified "significant defects" in Augustana's cultural survey, including the failure to conduct an inquiry into or an evaluation of the ethnographic information available for the site. He noted that "this information includes consultation with members of the indigenous community, the elders who have been living in the area, medicine people, oral historians, and others who are familiar with the area.

The acreage within the proposed permit boundary is mostly private land. About 240 acres are administered by the federal Bureau of Land Management. In addition, the Burlington Northern Santa Fe and counties own railroad and county road lands in the project area.

(Contact Talli Nauman, Health and Environment Editor of Native Sun News at talli.nauman@gmail.com)

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Native Sun News: Tribes prepare for more uranium hearings
Friday, October 4, 2013
Filed Under: Environment | National
More on: cheyenne river sioux, native sun news, oglala sioux, rosebud sioux, south dakota, uranium

The following story was written and reported by Talli Nauman, Native Sun News Health & Environment Editor. All content © Native Sun News.

Chaz Jewitt (left), a native of Cheyenne River Indian Reservation, joined other Dakota Rural Action members on the picket line at the opening of hearings on uranium mining permits. PHOTO BY/Talli Nauman

Black Hills uranium mining 'not an Indian issue'

'We all drink the same water'
By Talli Nauman
Native Sun News
Health & Environment Editor

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RAPID CITY - After a week of grueling state hearings on a contested large-scale uranium mine permit in which all Native Americans opposed the project, parties prepared for another week of testimony – this time on water permits for the proposed in-situ recovery (ISR) operation upstream from the Cheyenne River and Oglala Sioux Indian reservations.

"Let's develop economic sources that will not ruin our water," Lakota-Dakota pediatrician Sara Jumping Eagle told the Department of Environment and Natural Resources (DENR) Board of Mining and Environment. "We have to keep it safe for our children and not ruin it with uranium mining," she said during a day of public comment Sept. 23.

DENR's Water Management Board will take registered interveners' testimony on two water rights applications and a water discharge permit at the Ramkota Conference Center in Rapid City, beginning at 8:30 a.m. on Oct. 7 and continuing through Oct. 11.

The Reason For Their Marriage Can Break Your Heart. Watch more.
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At press time, the Water Management Board had disallowed public comment for the upcoming contested hearing, but the local ad-hoc Clean Water Alliance called for pressure to change that situation.

"Please call Gov. [Dennis] Daugaard this week and ask for time for public input at the Water Management Board hearings," Clean Water Alliance Executive Director Lilias Jarding pleaded in a Sept. 29 letter. "The public has a right to give its input on these huge water uses and on the plan to spray waste water on over 1,000 acres of land," she argued.

A protest rally was also planned for the first day of the Water Management Board hearings.

Powertech, (USA) Inc., a wholly-owned subsidiary of the Canadian penny-stock holding company Powertech Uranium Corp., has been seeking state and federal permits since 2009 for what could become South Dakota's first-ever ISR, or in-situ leach (ISL), uranium mining and yellow-cake processing plants.

The mining would take place on 10,000 acres in the Dewey-Burdock Project area of Custer and Fall River counties in southwestern South Dakota. The ISL process would entail building 40,000 wells to inject solutions, dissolve uranium in the Inyan Kara Aquifer, pump them to the surface, process them into yellow cake for storage and shipment, purify the water, spread most of it on the surface or return it underground, and dispose of toxic wastes off-site.

Powertech has offered from 84 to 99 construction jobs for the project's first year, with employment tapering off afterward in the 20-year aquifer-mining endeavor.

The company is asking the state for a permit for the rights to 8,500 gallons per minute of the Inyan Kara Aquifer, where the uranium ore is located, and another permit for 551 gallons per minute from the Madison Aquifer. It is also asking for an underground water discharge permit.

During the first round of state hearings, Mining and Environment Board Chair Rex Hagg acted on a Rapid City government appeal and agreed to admit the city council's resolution opposing the mining. The council resolution claims the project threatens the municipal water supply, which mainly comes from the Madison Aquifer.

Hagg, in admitting the resolution, also stipulated that any related resolutions from other governmental bodies would be accepted for consideration. That included one presented during the hearings by Argentine Township Chair John Putnam, a fourth-generation Dewey-Burdock rancher whose home is the only one occupied within the project boundary.

"I support the mining project wholeheartedly," Putnam stated, adding, "Our opinion counts because we are living in the area and drinking the water." All the other residents in the immediate area of the mining who commented were in favor of the project. Among supporters sporting green t-shirts bearing the slogan "I love U3O8" and "We Are Here For U3O8" was former Edgemont Mayor Carl Shaw.

Prospects for the community "will be significantly enhanced," he said, citing expectations for more than 80 jobs and $5 million in revenues for each of Custer and Fall River counties.

Intervener Cheryl Rowe, a Rapid City resident, retorted, "If they choose to live in a Superfund site, that's their choice." Referring to the unreclaimed sites left in the Dewey-Burdock area from past open-pit and underground uranium mining, she added, "Smart people want to live where there is no uranium mining. Black Hills economic development depends on denial of this permit."

Tom Cook, who lives between the proposed Powertech operation and the nearby Crow Butte ISL uranium mine and processing plants in Nebraska, used the public comment period to speak out against the project.

Citing spills at the Crow Butte site and contamination of his water well, he said, "A failure in one pipe coupling can add up to catastrophe for many people for many generations. Instead of participating in a war against the future, I urge you to vote this project down," he admonished board members. "I wish you and your grandchildren a cancer-free environment at this place, South Dakota," he concluded.

Three Rosebud Sioux Tribal Land Office administrators attended the public comment period to object to the permit.

"I had an elder and he said, 'this is not an Indian issue: We all drink the same water. We all share the same land.' We're all concerned about the impacts this is going to have," commented Paula Antoine, coordinator of the Sicangu Oyate Land Office. "We implore you and ask you deny this permit on behalf of the children of South Dakota."

Don Cuny from Manderson on the Pine Ridge Reservation also commented on the water issue, noting that the Black Hills remains federally adjudicated to the Seven Council Fires of the Great Sioux Nation under the 1868 Treaty of Ft. Laramie.

"When the water is gone, that is the end of the world," he said. "The Black Hills are not for sale. If you do approve this, we'll be there to stop it."

Marvin High Hawk, also from Pine Ridge Reservation, scolded the participants in the proceedings: "I know you people want to get things going jobwise. Those that are for it want the money; they don't care because they can move. Those that don't have the money can't move and don't want this.

"Uranium is dangerous to society and to people," he continued. "I myself don't like to drink water from the store. I want to drink water from Grandmother Earth," he said. "I hope you all make the right decision to stop this uranium so a lot of people will have a happy, enjoyable life instead of worrying about what's going to happen to them if this continues on."

Cheyenne River Indian Reservation native Chazz Jewitt commented on the state restrictions for eating fish from the Moreau River that flows through the reservation from the North Cave Hills uranium mining reclamation site in Harding County.

"DENR recommended years ago that pregnant women and children can't eat the fish: It's your responsibility to make sure we can eat the fish," she told the board. "We have a lot of Superfund sites. It seems like you guys never denied a permit, but it's a new century. We can't continue to do things this way."

The U.S. Forest Service released a bulletin Sept. 24 stating that the Custer National Forest had closed a portion of because of excessive rainfall that occurred two weeks earlier in the reclamation area.

"The public safety closure begins at the junction of Riley Pass Road and Sediment Pond 4," the bulletin said. "In addition to the road slump, the hillside below the road is saturated and unstable creating additional concerns for public safety."

Mary Goulet noted that Hot Springs area concerned citizens, herself included, collected about 1,000 petition signatures opposing the mining. Two other opposition petitions have circulated, one from health care providers and another asking the state Tourism Department to object to the project. Meanwhile, teachers in Fall River have signed a petition in favor, which was cited by one hearing goer.

Rapid City physician Steve Massopust commented on the "irrefutable evidence that uranium exposure increases the risk of cancer. He noted that a Colorado medical society passed a resolution against Powertech's previous ISL project, which "led to stiffer regulation that thwarted Powertech's proposal there."

The company is now selling its properties in Colorado to help finance its South Dakota permit applications, according to company documents.

The Powertech proposal prompted the South Dakota State Medical Association to announce opposition to all uranium mining in the Black Hills.

Rapid City physician Ken Vogele braved wind and rain to join protesters rallying at Sept. 23 hearings, holding a chocolate cake he had made as an gimmick to suggest alternatives to yellow-cake processing.

"The forces of the earth are here to remind us that we can have wind power and not uranium power," hearing-goer Grete Bodogaard of Volin told the Native Sun News.

Dewey-Burdock Project Manager Mark Hollenbeck and other company representatives took the stand to defend the application.

A former state lawmaker and then Powertech legislative liaison, Hollenbeck testified under oath that he divested of company stock "three or four years ago", did not encourage South Dakotans to purchase shares, and only knows of one person in South Dakota with shares. He said that investor is not a government representative.

Lessors of mineral rights for the project will receive 5-percent royalties and thereby have a "financial" interest in seeing the project go forward, he noted.

However, the company has no contracts to sell uranium, and potential applications for recovery of vanadium for steel alloy would proceed "as we get into the operation," he said.

Attorneys for the Clean Water Alliance and the Wild Horse Sanctuary, located near the proposed mine and milling site, said they considered the application incomplete, given vagueness of vanadium proposals, indecision over wastewater disposal methods, and other details.

The attorneys, Bruce Ellison and Mike Hickey, were set to offer additional arguments when the Mining and Environment Board reconvenes hearings at the Ramkota and Hilton Garden Inn during the week of Nov. 11-15.

Hollenbeck testified that his certified organic livestock operation Sunrise Ranch Meats is located adjacent to the project area -- at the confluence of Beaver Creek, Pass Creek and the Cheyenne River.

He told the Native Sun News that he believes the operation is compatible with uranium mining and that it is incumbent upon local people to take on the burden of uranium mining for the good of society.

Outlets for his products include Main Street Market and Wild Strawberry in Rapid City, as well as a store in Newcastle, Wyoming.

"You know, I can define my environment as this ranch and be extremely myopic in my views and protect my ranch. But as you start moving out and you decide the environment is the earth then when we need energy, what's the most responsible method of getting the energy?" he challenged.

"Now it's real convenient for Americans to allow Third World countries to do all of their mining for us. Then it's outta mind. We don't have to look at it. We don't have to be concerned that they're using slave labor, they're killing people, they're doing anything in their mines, because we don't have to see it and it's not bothering our environment," he said.

What's more, Hollenbeck argued, "I don't care if you want windmills or solar panels or what you want, there has to be mining to get those supplies, and nuclear power is the largest non-carbon

source of electricity in the world, and nothing is even remotely close to catching it."

He says he walks the talk in upholding the project. "I want you to find a person who has more to lose than I do," he told the Native Sun News.

Lifelong Edgemont rancher Susan Henderson thinks she might be the one. She intervened in both the state mining permit and the water permit hearings.

At the first set of hearings, she described the 60 stock dams and dugouts on the ranch that has been in her family for 111 years, saying all of them are dry due to drought conditions, forcing her to depend on well water from the Inyan Kara.

"A great many other cattle ranchers are also using underground water, some from the Madison; others buy from Hot Springs. I'm also buying Provo township water," she told the mining board.

"These cattle ranches are part of the two businesses that run South Dakota," she noted. "If you take out rail and power utilities, ranching accounts for over 50 percent of the tax revenues of these counties.

"A great deal of surface water provided by Cheyenne River goes through Dewey-Burdock via Beaver Creek and on to Angostura Reservoir, [providing] huge amounts of irrigation for the farmers of corn, alfalfa, and hay in this part of our county," she added.

Then she turned the discussion to Powertech's financial position. "They don't have the money to do this project, so they're going to sell, and the question is: To whom? This company has said what it's going to do; and when it is sold, its statements are moot," she said.

In that regard, Hollenbeck told the Native Sun News, "I have no idea whether Powertech will be the whole owner, part owner, or how it will come out." The arguments remained to be explored in the upcoming state and federal permit hearings.

One thing that adversary neighbors Henderson and Hollenbeck could agree on is that economics would determine the outcome of the effort, even if all permits are granted.

Considering the market turndown in the wake of the Fukushima tsunami and nuclear plant meltdowns, Hollenbeck conjectured: "I think the economics are still there but they certainly aren't what they were two or three years ago.

"If the economics are there, the project's not going anyway," he said. On the other hand, "investors just don't line up to intentionally lose money," he noted.

(Contact Talli Nauman, Health and Environment Editor for Native Sun News at talli.nauman@gmail.com)

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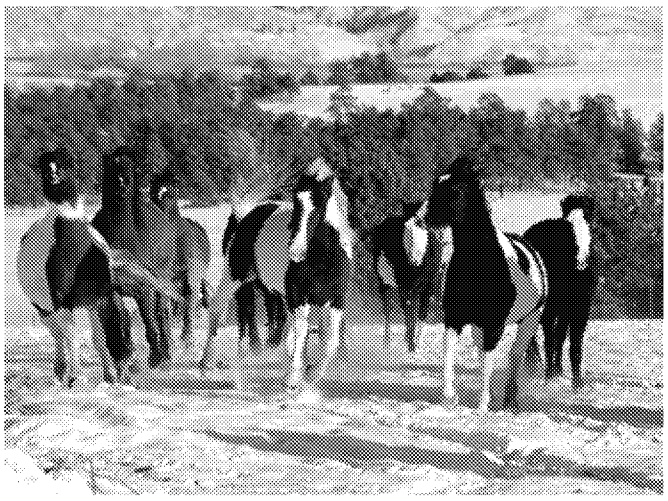
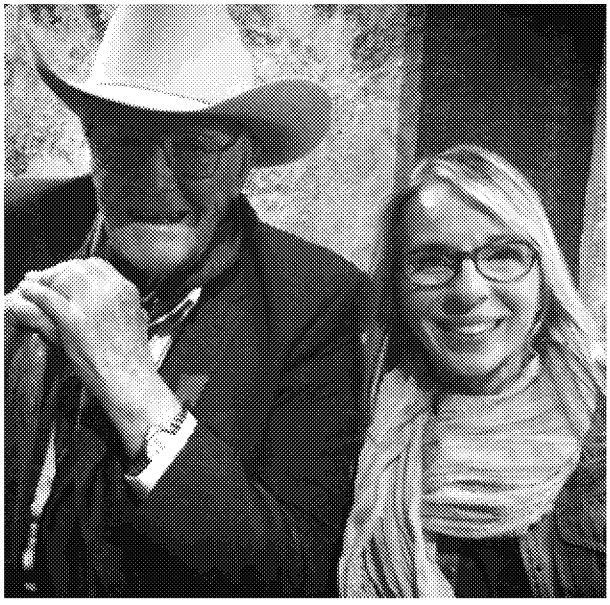
Native Sun News: Uranium mine threatens wild horse sanctuary
Tuesday, October 15, 2013
Filed Under: Arts & Entertainment | Environment | National
More on: cheyenne river sioux, film, native sun news, oglala sioux, south dakota, uranium

The following story was written and reported by Talli Nauman, Native Sun News Health & Environment Editor. All content © Native Sun News.



Uranium mining adversary Dayton O. Hyde harbors mustangs at The Black Hills Wild Horse Sanctuary, located on the Cheyenne River between the proposed Dewey-Burdock ISL site and the Pine Ridge Indian Reservation. Courtesy/Karla LaRive



The Black Hills Wild Horse Sanctuary founder Dayton O. Hyde joins film director Suzanne Mitchell in celebrating the October public release of her documentary feature "Running Wild." Courtesy/"Running Wild"

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Indie flicks highlight Black Hills Wild Horse Sanctuary

By Talli Nauman
Native Sun News
Health & Environment Editor

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"Often I see Champagne Lady running wild and free across the prairie, able to leave her friends in the dust. In those moments it seems inconceivable that she would let me stroke her glistening neck and even scratch her ears. But when I come bumping and rattling across the prairie in my old pick-up truck and call her name, she leaves the rest of the herd behind to gallop to me. Putting her head though the open window of the truck she searches my jacket pocket for shards of grain..." – The Black Hills Wild Horse Sanctuary Founder, Dayton O. Hyde – "Free to Run"

RAPID CITY – Champagne Lady is a mustang whose octogenarian caretaker Dayton O. Hyde rescued at his 11,000-acre Black Hills Wild Horse Sanctuary on the Cheyenne River in South Dakota. He submitted her visage as part of testimony against proposed nearby uranium mining during water permit hearings scheduled Oct. 7-11.

She is one of hundreds of equine movie stars in the videos "Free to Run" and "Imagine a Place", sent to the South Dakota Department of Natural Resources (DENR) Water Management Board for the hearings in Rapid City.

"The horses are my pardners in helping support this place," Hyde says in one of the numerous videos recorded at the sanctuary. "As long as the tourists keep coming, we can keep running this place."

However, environmental lawyer Tom Balanco notes in the video "We Are The Land": "What threatens the wild horse sanctuary most right now is the increased threat of uranium mining."

Powertech, (USA) Inc., a wholly-owned subsidiary of the Canadian penny-stock holding company Powertech Uranium Corp., has been seeking state and federal permits since 2009 for what could become South Dakota's first-ever ISR, or in-situ leach (ISL), uranium mining and yellow-cake processing plants. The Black Hills Horse Sanctuary, now with its name in the marquee lights, may well be its most famous adversary.

Although the water permit hearings board postponed proceedings until the week of Oct. 28 when snowbound interveners could not attend Oct. 7, the sanctuary's arguments against uranium aired in the award-winning, new documentary feature "Running Wild: The Life of Dayton O. Hyde", publically released Oct. 4 in theaters across the United States and via Video On Demand.

The proposed mining and milling would take place on 10,000 acres north of Edgemont in the Dewey-Burdock Project area of Custer and Fall River counties in southwestern South Dakota, located just minutes from the sanctuary.

The ISL process would entail building wells to inject solutions, dissolve uranium in the Inyan Kara Aquifer, pump them to the surface, process them into yellow cake for storage and shipment, purify the water, spread most of it on the surface or return it underground, and dispose of toxic wastes off-site.

Powertech has offered from 84 to 99 construction jobs for the project's first year, with employment tapering off afterward in the 20-year aquifer-mining endeavor.

The company is asking the state for a permit for the rights to 8,500 gallons per minute of the Inyan Kara Aquifer, where the uranium ore is located, and another permit for 551 gallons per minute from the Madison Aquifer. It also is asking for a permit to discharge underground water on the surface.

After the DENR twice rejected Powertech's application for underground injection wells, the company lobbied successfully to remove state oversight. Federal EPA and Nuclear Regulatory Permits for that and other aspects of the project are pending.

Petitions and interveners in recent contested permit hearings before the DENR Mining and Environment Board have claimed that the proposed uranium mining in South Dakota runs counter to everything from economic goals, Indian treaty rights, and cultural resource protection to medical knowledge, tourism interests, and water conservation.

Among the most captivating arguments is for the preservation of The Black Hills Wild Horse Sanctuary, located not far from the proposed mine and mill.

Powertech's Dewey-Burdock Project Manager Mark Hollenbeck testified that he did not visit Hyde or the horse sanctuary in the process of developing the project proposal. He said they talked at an informational hearing the company held in Custer.

Hyde, congratulated by Lakota elders due to his reverence for the land, is credited not only with saving wild horses but also with keeping the Sandhills crane from extinction, according to a recent article at Aarp.org

He has written several books about his efforts to protect the environment.

Director Suzanne Mitchell's independent film "Running Wild" explains why Hyde has chosen to make a stand to contest mining and water permits for the impending project at the headwaters of the Cheyenne River, which runs through the wild horse sanctuary.

Hyde founded the sanctuary in 1988 to rescue wild horses otherwise destined for slaughter. He established the non-profit Institute of Range and American Mustang IRAM, providing private land dedicated to a balanced ecosystem, hosting his friends' annual Sundance, healing with equine therapy, and promoting research on wild-horse herd-management.

The business provides him no salary and no vacations – just the satisfaction of saving horses. It attracts tourist dollars year-round to Fall River County in southwestern South Dakota, preserves ancient rock art, and has served as a movie set for numerous productions – among them "Crazy Horse" and "Hidalgo".

IRAM Program Manager Susan Watt, an intervener in the permit hearings, points out in video recordings that mineral rights don't necessarily belong to land owners, as is the case on the wild horse ranch, where they are in the hands of the Bureau of Land Management.

"We learned that when the Black Hills was taken from the Native Americans, the federal government retained the mineral rights, and we as private landowners have no right to say yes or no," she said. The drilling would be near a water well on the sanctuary land, she complains.

"You cannot inject water down through the aquifer and pump it out again and pump it back with residues into the uranium deposits and not pollute everybody's water," Hyde argues.

Powertech President Richard F. Clement Jr. sustains in written testimony to the Water Management Board that "impacts associated with alterations of ore-body aquifer chemistry would be small", because federal rules require restoration.

Yet surface water concerns also goad Hyde. "A lot of us live along the Cheyenne and we better be worried about what' s going to happen to our cattle and where our kids are going to go skinny dipping," Hyde adds. "It's going to affect an awful lot of people in the Black Hills and on the prairie," he says.

Hollenbeck told Native Sun News he has no qualms about his children's exposure to radiation when they swim in the Cheyenne River. He operates a certified organic livestock operation at its

headwaters.

"Running Wild" opening night drew national attention to the local struggle over natural resource usage as the movie played on the big screen in New York, Los Angeles, Denver, Dallas and points in between.

Reviewer Anita Gates of the New York Times called it "quietly grand" and lauded cinematographer Mauro Brattoli's "exquisite shots of the horses running free."

The production has earned its way into film festivals across the land, winning Best Documentary Feature at the Black Hills Film Festival and Best Feature Film at the Prescott Film Festival.

To date, it has been admitted as an official selection at the 2013 Slam Dance, Cinequest, Palm Beach, Sedona, and Cinema Falls indie fests.

Barbara Kopple, Robert Johnson, and Alejandro Perez are the executive producers.

(Contact Talli Nauman NSN Health and Environment editor at talli.nauman@gmail.com)

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Native Sun News: Oglala Sioux Tribe intervenes in water dispute
Tuesday, November 5, 2013
Filed Under: Environment | National
More on: black hills, native sun news, oglala sioux, south dakota, uranium, water

The following story was written and reported by Talli Nauman, Native Sun News Health & Environment Editor. All content © Native Sun News.

A rally of uranium mining protestors and water rights defenders marked the opening of historic hearings on Powertech's first water permit applications in South Dakota for in-situ leach mining. Photo by/Dahl McLean

Oglala Sioux Tribe intervenes in water dispute

By Talli Nauman
Native Sun News
Health & Environment Editor

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RAPID CITY – Vancouver, Canada-based Powertech Uranium Corp. accepted a $400,000 cash injection from its investment partner Azarga Resources Ltd. to shore up its finances in the week prior to Oct. 28 hearings on its three contested bids for South Dakota water rights permits to facilitate proposed in-situ mining.

The Oglala Sioux Tribe is intervening in the hearings to oppose the uranium project slated for the southern Black Hills. Permits could result in the first in-situ leach (ISL) uranium mining and yellow-cake milling for both Powertech and South Dakota.

The state Department of Natural Resources (DENR) Water Management Board convoked the hearings Oct. 28-Nov. 1 to decide whether to grant the company's wholly-owned subsidiary

Powertech (USA) Inc. rights to 8,500 gallons per minute of the Inyan Kara Aquifer and 551 gallons per minute of the Madison Aquifer.

During the five days of open hearings, the board also had to weigh arguments regarding the company's application to discharge the mine wastewater on the ground in the proposed Dewey-Burdock Project in Custer and Fall River counties, adjacent to the Pine Ridge Indian Reservation.

Azarga's spending helped enable Powertech to proceed with the permitting process by providing $400,000 of loan money, in a deal closed Oct. 22.

Powertech has been running through about $350,000 a month as it undergoes the permit processes on both the state level and the federal track, where two Lakota non-profit groups are among parties intervening alongside the Oglala Sioux Tribe before the Nuclear Regulatory Commission (NRC).

The corporate transaction gives the Hong Kong-headquartered Azarga some 22 percent of all Powertech's shares, a move that traders anticipated when Azarga acquired its first 17 percent of Powertech in July with an injection of $500,000.

The latest exchange also lays the groundwork for Azarga to assume some 40 percent of all Powertech shares within a period of two or three months, pursuant to providing loan money for a total of $3.6 million, including the Oct. 22 payment.

Powertech has been seeking ISL permits for Dewey-Burdock since 2006, and repeatedly delaying its planned start dates. After the DENR twice rejected Powertech's underground wastewater injection permit, the company's lobbyists convinced state legislators to repeal South Dakota oversight on that, leaving it in the hands of the EPA.

The federal environmental impact statement process in the EPA jurisdiction is stalled over government-to-government consultations between Washington and tribes, at least seven of which claim with an interest in cultural and historic preservation in the treaty territory that underlies the proposed project area.

In preparation for state hearings, Oglala Sioux Tribe attorneys from the Gonzalez Law Firm shared with the Water Management Board a letter from former Tribal President John Yellow Bird Steele expressing to EPA the tribe's "deep dismay with, and strong objection to" the NRC's handling of the cultural resources survey necessary to approve Powertech's environmental impact statement. The survey remains to be carried out to tribal satisfaction.

The state Water Management Board admitted the tribe's list of official witnesses: Tribal President Bryan Brewer, Vice President Tom Poor Bear, Secretary Rhonda Two Eagle, Land Office Director Denise Mesteth, Tribal Historic Preservation Officer Wilmer Mesteth, and Oglala Lakota College Science Department Director Hannan LaGarry, as well as Natural & Cultural Resources Department representatives Roberta Joyce Whiting, Dennis Yellow Thunder and Richard Iron Cloud.

The ISL process would entail building numerous wells to inject solutions to dissolve uranium in the Inyan Kara Aquifer, pumping them to the surface, processing them into yellow cake for storage and shipment, purifying the water, and spreading most of it on the surface or returning it underground, then disposing of remaining hazardous waste off-site.

Powertech's staff would prefer to dispose of mine wastewater via deep well injection, now under EPA jurisdiction, but seeks state acquiescence to land disposal, in case the aquifer injection scheme doesn't pan out, the company states in its groundwater discharge permit application to DENR.

The Dewey Burdock Project is envisioned to last 20 years at a location 13 miles northwest of the town of Edgemont, in an area of about 10,580 acres owned largely by private parties and partly

by the public through the U.S. Bureau of Land Management (BLM). The area was first mined for uranium in the 1950s and has been explored further since then, leaving hundreds of well-heads and unreclaimed mining sites.

"The proposed mining activity may adversely impact the valuable land and water resources of the Oglala Sioux Tribe," Land Officer Mesteth said in a sworn affidavit submitted to the Water Management Board. "If the project were to be halted, or the project be made subject to the strictest environmental controls, the interests of the Oglala Sioux Tribe would be protected," she said.

Powertech, in its state applications for water rights and discharge permits, affirms that state and federal concessions yet to be granted to the company will assure it upholds its responsibilities for water protection.

"As required by the NRC license, various DENR permits and EPA Class III and V Underground Injection Control permits, Powertech (USA) will be required to post financial assurance for all aspects of the Dewey-Burdock Project," it states.

"This will ensure that resources will be available for decommissioning and reclamation such that the site will be released for unrestricted use," it adds. "The amount of the financial assurance will include an amount sufficient to plug and abandon all wells constructed under this appropriation when these wells are no longer needed for the intended beneficial use."

In answer to non-profit Dakota Rural Action Staff Organizer Sabrina King's pre-hearing deposition request for Powertech's estimated total cost of reclamation, the company submitted a preliminary estimate of $27.1 million.

Lack of confidence in the corporation's ability to raise the money prompted a hearing interrogatory by Clean Water Alliance founder Lilias Jarding, requesting Powertech to identify "expected sources of investment into the costs of financing proposed Dewey-Burdock mining, milling, and reclamation operation."

Also on behalf of the Rapid City-based grassroots organization, Jarding required the Canadian corporation to define its relationships with the Russian government's nuclear power company and with its European investors from Synatom, a wholly owned subsidiary of the French GDF Suez, which is the second largest private water services provider in the world.

The Water Management Board's seven members have to consider Powertech's statement to them that: "The financial assurance will include an amount sufficient to plug and abandon all wells constructed under this [water permit] appropriation when these wells are no longer needed for the intended beneficial use."

In the application process, Powertech argued: "South Dakota Codified Law 46-1-6(3) defines beneficial use as "any use of water within or outside the state, that is reasonable and useful and beneficial to the appropriator, and at the same time is consistent with the interests of the public of this state in the best utilization of water supplies."

The DENR staff review of the applications resulted in a comment to the state's chief engineer to the effect that: "The Water Management Board has not yet considered if in-situ recovery is a beneficial use of water."

The former chief engineer, Garland Erbele, deemed the proposed water use beneficial in recommending approval of the Inyan Kara water rights application.

In addition, the NRC staff recommendation to approve the Draft Supplemental Environmental Impact Statement for Dewey-Burdock is based on the conclusion "that the overall benefits of the proposed action outweigh the environmental disadvantages and costs."

The Powertech NRC license application, made in 2009, describes the project benefits as including the potential to create approximately 250 new jobs during construction and some 150 new jobs during operation.

While, the company's employment estimates have varied over time, it calculates that the project would generate some $35 million in state and local tax revenue and approximately $187 million in value-added benefits over the life of the project.

Nonetheless, its economic impact is deemed "small" in the Draft Supplemental Environmental Impact Statement and Custer resident Penny Knuckles provided DENR Minerals and Environment Board members -- in large-scale mine permit hearings for the same project -- with a comparison to the value of industries she considered would suffer if uranium mining proceeds: "Tourism and agriculture have been sustainable, long-term economic drivers for the Black Hills long after mining ventures pull out," she said. "South Dakota boasts the second-lowest unemployment rate, 3.8 percent, in the nation. The number of jobs added by the mine, about 86, would be negligible compared to the 27,000 jobs brought by tourism," she said.

"The mine would generate less than $900,000 in tax revenues annually with profits going to shareholders: Compare this to $299 million in annual sales and use taxes in Custer and Fall River counties, $131 million in the market value of agricultural products in the affected counties, and $1.4 billion in annual tourism sales in the Black Hills," she said.

Wild Horse Sanctuary Attorney Mike Hickey argued to the Water Management Board: "One of the overriding issues in this matter is whether granting Powertech's applications is in the public interest.

"It seems fair to say Powertech wants to exploit significant amounts of water and minerals that belong to the citizens of South Dakota," he continued on behalf of the intervening owners of the private wildlife preserve located just downstream from the proposed mining. "Not only does Powertech want to exploit those public assets, but Powertech wants to do so for nothing more than the cost of extraction," he said. "South Dakota and its citizens will not be the beneficiaries of this project if it comes to fruition. The beneficiaries of this project will be the shareholders of Powertech Uranium Corp."

The DENR guidelines state that "In South Dakota, all water (surface and ground water) is the property of the people of the state."

Powertech's applications show it is seeking a permit for industrial use in order to mine. State law considers the permit lasts for an indefinite time, but the concept of beneficial use is crucial: "After obtaining a water right, the water right remains in effect as long as water continues to be placed to beneficial use," the law says.

South Dakota Assistant Attorney General Diane West told the Native Sun News that the DENR would have to rule on any change-of-use application if investors in a mining project propose to use the water for a purpose other than mining, according to rules developed by the Water Management Board, other states' case law precedents and South Dakota statute.

The Water Management Board has set Dec. 9 at 8:30 a.m. as the date and time to reconvene the hearing for another week of testimony at the Ramkota Convention Center in Rapid City.

In the meantime, the Board of Minerals and Environment will hold is second week of hearings on Powertech's large-scale mining permit application, beginning Nov. 11 at 10 a.m. and continuing through Nov. 14 at the Ramkota, then moving to the Hilton Garden Inn on the Nov. 15.

Administrative case law history is in the making with the upcoming board decisions, which will impact on other in-situ leach mining uranium ventures that Powertech has on the back burner.

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Native Sun News: Tribal opposition puts hold on uranium mine
Tuesday, December 10, 2013
Filed Under: Environment | National
More on: native sun news, oglala sioux, south dakota, uranium

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The following story was written and reported by Talli Nauman, Native Sun News Health & Environment Editor. All content © Native Sun News.

Lawyers for plaintiffs in proceedings on Dewey-Burdock uranium mining proposal address NRC board in the Black Hills at initial federal hearing in 2009. PHOTO BY/Talli Nauman

Native American arguments put uranium mining on hold

By Talli Nauman
Native Sun News
Health & Environment Editor

PART I | PART II | PART III | PART IV | PART V | PART VI

RAPID CITY — South Dakota's Nov. 25 official choice to refrain from ruling on permit applications for the proposed Dewey-Burdock in-situ leach (ISL) mining project upstream from South Dakota's largest Indian reservations was a bell ringer.

It means that Powertech Uranium Corp., which has been embroiled in public contested case hearings since September, now has to wait to again seek state permission -- until after federal officials address Native American concerns about protections for land, water, air and cultural resources.

"The administrative hearing on Powertech's applications pending before the board is continued until resolution by the federal agencies," South Dakota Water Management Board Hearing Chair Rodney Freeman determined in a written order ending the proceedings for three permits.

Powertech has told investors it would start work in 2014. However the continuation could be delayed for a longer while, because no change is on the horizon in a stalemate between the feds

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and the tribes in negotiating terms of a 10,000-acre Dewey-Burdock cultural resource survey to the satisfaction of 23 Sioux tribal governments.

The recent decision cancelled a hearing scheduled in Rapid City for Dec. 9, as a requisite for a state ruling on whether to grant the corporation's wholly-owned subsidiary Powertech (USA) Inc. rights to 8,500 gallons of water per minute from the Inyan Kara Aquifer and 551 gallons per minute from the Madison Aquifer.

The hearing was also to take testimony on the issue of authorization to dump the mine waste water out on the ground.

The water would be used in a 20-year operation near Edgemont in extreme southwestern Dakota that would dissolve uranium in the aquifer and bring it to the surface for on-site conversion into concentrated radioactive yellow cake destined to facilities that process fuel for nuclear power plants. Freeman said the board's resolution responded to requests from both the company and interveners – among them, the Oglala Sioux Tribe -- who want to block the permits.

It followed on a similar action by the Board of Minerals and Environment, which stayed proceedings on Powertech's large-scale mining permit application on Nov. 11, pending consent to various corporate requests under consideration at the Nuclear Regulatory Commission, EPA and other federal agencies.

"Failure of any of those other agencies or boards to grant their licenses, permits, or other approvals may render a predetermination of the BME on the permit moot or potentially in conflict," the Board of Minerals and Environment dictated.

The day after the mineral board verdict, one of Powertech's largest shareholders dumped all its stock – 16 percent of the holdings.

The shareholder, a Belgian nuclear power provider named Synatom, is a wholly-owned subsidiary of the world's largest utility company and second-largest water service purveyor, the French corporation GDF Suez.

Azarga Resources Ltd., headquartered in Chinese business hub of Hong Kong, immediately snatched up the stock, it announced that same Nov. 12. The purchase made it the proud majority owner of Powertech with 45 percent of all shares.

Azarga already had become Powertech's largest single shareholder on Nov. 7 when it upped its stocks from about 17 to 29 percent of the total.

In its cozy relationship with the new investor that came on board in July, Powertech has been operating on monthly advances of $300,000 and $400,000 from a loan agreement signed with Azarga Oct. 18.

The agreement included the resignations of former Powertech officers Thomas Doyle and Greg Burnett, and the closure of their Vancouver, Canada office, as well as the closure of Powertech's office in Albuquerque, New Mexico, where the only remaining original officer, Richard Clement, resides.

Clement was moved from the position of president and CEO to that of corporate secretary.

At the time, he said in a company news release: "We are very happy to strengthen even further our strategic alliance with Azarga. The provision of this financing facility provides the company with the financial resources it requires to progress through the completion of the permitting process with confidence and clarity.

"In addition, the closure of the Vancouver office will reduce the operating costs of the company and will assist us in achieving our goal of receiving the required operating permits at a lowest

cost."

Azarga has agreed to independently finance the corporate functions performed by the Vancouver office with no diminishment of relations with the Toronto Stock Exchange ("TSX") and shareholders, he said.

The new management has called shareholders to vote Dec. 18 on its recommendation to approve monthly disbursements of the entire $3.6-million loan from the investment partner registered in the British Virgin Islands.

The financial credits would allow the company, now directed by Azarga nominees Apolonius (Paul) Struijk and Australian accountant Matthew O'Kane, to continue pursuing the myriad permits it has been seeking since 2009.

Like Powertech, Azarga has no record of mining uranium, but some of the business associates boast experience and they sure would like to get more in South Dakota.

For that to happen, Powertech needs a uranium recovery license from the Nuclear Regulatory Commission, and the NRC's requisite draft supplemental environmental impact statement for the operation remains to be finalized.

The drafters on the NRC staff state that the project will have little economic effect, "small to moderate" impacts on water and other conditions, and a "large" impact only on cultural resources, mainly Native American artifacts.

Section 106 of the National Historic Preservation Act, requiring consultation between the federal government and tribes on these resources, means the impact statement cannot be concluded until formal negotiations between the federal and tribal governments is achieved.

Almost two dozen tribes insist they be allowed to take part in a survey of the entire property, but the company has only provided resources for non-Indian surveys of a much more limited scope.

Together with the Oglala Sioux Tribe and several individuals, the Native American non-profits Owe Aku (Take Back the Way) and Defenders of the Black Hills, all have standing to argue in NRC hearings over the project's uranium recovery license.

In addition to cultural resource clearance, among other things, the company also needs Class III or Class V Underground Injection Control permits from EPA for mine waste water disposal and a certificate of federal exemption from the Clean Water Act, since it cannot return mine water to baseline conditions.

Lawyers for the interveners in the recent state hearings, including the Oglala Sioux Tribe, the Wild Horse Sanctuary, Dakota Rural Action, and the Clean Water Alliance, Susan Henderson and other individuals had filed for postponement of state hearings before they began. However both the Water Management Board and the Minerals and Environment Board denied the requests, accepting Powertech's urging to proceed apace.

Each board scheduled two weeks of hearings for itself but decided to refrain from further discussion after the first week's arguments convinced board members they had the proverbial cart before the horse.

(Contact Talli Nauman is the Health and Environment Editor for Native Sun News and can be reached at talli.nauman@gmail.com)

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Shea, Valois

From:	Talli Nauman [redacted]
Sent:	Wednesday, May 17, 2017 7:54 PM
To:	Shea, Valois
Subject:	Comments on Dew[redacted]ey-Burdock permit applications
Attachments:	Part-1.pdf; Part-2.pdf; Part-3.pdf; Part-4.pdf; Part-5.pdf; Part-6.pdf

Dear Valois,
I think you will enjoy reading my investigative news feature series about the proposed uranium mining at Dewey Burdock. It was first published in the Native Sun News, South Dakota's largest circulation weekly. It won the first place award for its genre in the South Dakota Newspaper Association annual contest in 2013-2014. I am submitting it for your consideration during the EPA public comment period on the Safe Drinking Water Act exemption requested and the two injection permits, as well as the environmental justice analysis considerations. You will notice there are two inaccuracies in Part I in the third to the last paragraph, where I used the word "or" when it should have been "and" connecting Class 3 and Class 5 UIC applications. I also erroneously said Clean Water Act, when it should have been Safe Drinking Water Act. See attached.
thanks,
talli

Talli Nauman
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www.meloncoyote.org
[redacted]

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Shea, Valois

From: Tamra Brennan [redacted]
Sent: Wednesday, May 17, 2017 5:55 PM
To: Shea, Valois
Cc: Rick Bell
Subject: Comment Period Extended for Dewey-Burdock?

Ms. Shea,
Has the public comment period been extended for the Dewey-Burdock uranium mining? This page has been brought to our attention, so wanted to verify. Thanks.
Public Notice: Extension of Public Comment Period for the Dewey-Burdock Class III and Class V Injection Well Draft Area Permits
https://www.epa.gov/uic/extension-public-comment-period-dewey-burdock-class-iii-and-class-v-injection-well-draft-area-0

Tamra Brennan
Organizer, Black Hills
Dakota Rural Action
[redacted]
www.dakotarural.org
www.dakotaruralblackhills.org

"To keep an organization alive you've got to
find that person who has to do something about it."

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People. Planet. Prosperity

THUNDER VALLEY
NATIVE YOUTH ON THE MOVE

RECEIVED JUN 21 2017

June 16, 2017

Valois Shea
Environmental Protection Agency, Region 8
Mail Code: 8WP-SUI
1595 Wynkoop Street
Denver, Colorado 80202-1129
Shea.valois@epa.gov

RE: Dewey-Burdock Project Draft Permits Comments

Dear Ms. Shea –

Thunder Valley Community Development Corporation is a non-profit organization based on the Pine Ridge Reservation. Our mission is to empower Lakota youth and families to improve the health, culture, and environment of our communities through the healing and strengthening of cultural identity. To accomplish this mission, we are challenging the status quo to develop new approaches to food, housing, youth, social enterprise, Lakota language, and workforce development. This includes building a sustainable community around the principles of People, Planet, and Prosperity.

We are concerned about the proposal to permit the construction of an in situ leach (ISL) uranium mine and deep waste disposal wells in Lakota territory, because water is central to our culture, to community development, and to Lakota existence. Without a consistent supply of healthy water, our community and our people cannot continue to develop spiritually, economically, or socially.

Our concerns include both surface and ground water. The Pine Ridge Reservation has a history of both ground water contamination and river contamination. We are currently threatened by an existing uranium mine to the south and by historical uranium mining and the Dewey-Burdock project to the north. The mine to the south, the Crow Butte ISL mine, has had 85 license violations and reportable incidents, including a leak that was not reported or stopped for over two years.

The old uranium mines to the northwest – in the immediate area where Powertech wants to re-start mining – leach contaminants into the Cheyenne River, which crosses the corner of our reservation. The Cheyenne River was the scene of a 1962 accident. One hundred square meters of uranium mill tailings ended up in the River at that time, and the old mines steadily leach into the River. Recent studies by a South Dakota School of Mines professor

Thunder Valley Community Development Corporation
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and others found that uranium levels are elevated at the mouth of Angostura Reservoir (between the old mines and the reservation). So we have reasons not to trust uranium companies when they say that modern technology and corporate responsibility will protect us.

All old uranium mines in the Cheyenne River watershed should be reclaimed before any new mine is permitted. There are 169 old uranium mines and prospects in the southern Black Hills. All but a handful of these old mines sit unreclaimed, leaching contamination into the Cheyenne River. While the research that has been done on the impacts are not encouraging, research overall has been spotty. There is no big picture of the impacts that already exist. Until this is done and the old mines are reclaimed, there should be no new activities that would bring water contamination to our area.

Besides these general concerns, I would like to discuss several issues with the draft permits. The first is that the Environmental Justice (EJ) section does not adequately consider the impacts of the proposed mine and deep disposal wells on Lakota people. The area covered in considering EJ issues is inadequate, as they include no reservation lands. Environmental Justice concerns should clearly include the Pine Ridge and Cheyenne River Reservations, which will be directly impacted if this project is permitted, as they are downstream.

There are other omissions. The first is consideration of the Fort Laramie Treaties of 1851 and 1868, which reserve the Black Hills to the Lakota. The U.S. Supreme Court recognized this in a 1980 decision, and the U.S. constitution recognizes treaties as "the supreme law of the land."

Along the same line, the importance of the Black Hills to Lakota people is mentioned, but not analyzed. Instead, it is mentioned and then ignored. Also, the Black Hills are considered in a historic context, rather than in a modern context that recognizes their continuing importance to the Lakota people. Cultural resources are mentioned, but no analysis is done. A thorough cultural analysis should be part of any consideration of an area that is of critical spiritual significance to the Lakota. These omissions are glaring and thoroughly undermine the Environmental Justice section.

Unfortunately, the National Historic Preservation Act (NHPA) Review is not much better. In its current form, it is little more than an outline of a few of the relevant issues. As mentioned above, the analysis of cultural and historical resources must not ignore the current cultural importance of those resources and their modern uses. The Black Hills are sacred to the Lakota, much like Jerusalem is to the Jews or the Vatican is to Catholics. Sacred cultural and historical resources must be fully protected, and doing this relies on the

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involvement of knowledgeable Lakota people, plenty of time, adequate finances, and the willingness to put the sacred above the dollar. Some places should not be subjected to uranium mining. Lakota people who are sharing their ancient knowledge, which they have spent a lifetime learning, should be offered compensation for their efforts and given credit for resulting information.

The EPA suggests the possibility of relying on the Nuclear Regulatory Commission's NHPA analysis. This would be disastrous. The NRC has floundered for years in its feeble attempt to do a NHPA analysis. It began the analysis without taking the need for full tribal consultation seriously, and it has dragged its feet through a piecemeal and incomplete process since then, despite legal direction to do a proper analysis. The EPA can – and should – do better.

It also appears that tribal consultation has barely begun, yet the EPA has issued draft permits. This is putting the cart before the horse. Tribal consultation must be thorough and done on a government-to-government basis, including the inclusion of representatives of the United States and representatives of native nations that are of the same status. In other words, if the EPA wants someone at a consultation with the status of a Cabinet member from a tribal government, it should also expect to have someone of Cabinet status present from the United States government. Tribal officials should not be expected to interact with underlings from the U.S. government. This is part of the government-to-government negotiations between equals that consultation policy envisions.

Full tribal consultation should be completed before a draft permit is issued. As that did not happen, it should very clearly be completed before the EPA takes further action.

The EPA proposes to issue permits to pollute two of the three major aquifers in the Black Hills region. This would completely prevent any further economic development in the southwestern Black Hills and downstream, due to the lack of safe drinking water. Radiation is forever. Our water will never be the same, and this is the point of the company seeking an aquifer exemption. It is also critical for the EPA and the company to prove that the Minnelusa Aquifer could not be used for drinking water under any likely scenario – not just under current conditions. The Aquifer should have been tested to determine its drinking water status before a draft permit was issued. It is imperative that the company's actions be directly monitored (on-the-ground) if testing is being done to determine water quality in the Minnelusa Aquifer.

We understand that other comments will talk more about some of the problems associated with modern in situ leach uranium mining and with deep disposal wells. We support

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comments that illustrate how this type of mining has caused problems for both surface and ground water.

Lakota people say "Mni Wiconi" which roughly translates to "Water is Life." Anything that threatens our water in any form in this semi-arid region is of immediate concern due to the need for water, our spiritual connection to water, and the status of the area's water under treaty law. Lakota people and their allies have a history of protecting water resources from uranium mining, and we will continue to do so.

If you have any questions, please feel free to contact me at the address or phone number shown, or by e-mail at ntilsen@thundervalley.org

Sincerely,

Nick Tilsen
Executive Director

Thunder Valley Community Development Corporation
290 Empowerment Drive • Porcupine, SD 57772 • Office (605) 455-2700 • Fax (605) 455-2970

Edgemont Area Chamber of Commerce

RESOLUTION

Supporting Responsible Uranium Recovery in Fall River and Custer Counties, South Dakota

WHEREAS Powertech (USA) Inc. desires to extract uranium on the Dewey-Burdock Project site in Fall River and Custer Counties utilizing the *in situ recovery* method; and

WHEREAS the Dewey-Burdock Project has been analyzed by knowledgeable independent parties and demonstrates excellent economic characteristics as well as safe and environmentally sound capacity to be mined such that it meets the requirements of South Dakota and Federal oversight agencies; and

WHERERAS the economic base of the State of South Dakota and Fall River and Custer Counties will be significantly enhanced as Powertech (USA) Inc. directly or indirectly employs over 80 workers, provides an influx of more than $50 million in non-payroll capital expenditures, and pays mineral severance taxes estimated to be more than $10 million to the State of South Dakota and more than $5 million each to Fall River County and Custer County; and

WHEREAS uranium mining in Fall River and Custer Counties will be strictly regulated and overseen by the State of South Dakota, the U.S. Nuclear Regulatory Commission and the U.S. Environmental Protection Agency so as to protect the public health, worker health and the surrounding environment; and

WHEREAS it is the belief of this entity that energy production and economic development will be balanced with environmental stewardship in Fall River and Custer Counties.

NOW THEREFORE BE IT RESOLVED that upon demonstrating to state and federal regulators that operations at the Dewey-Burdock Project can be done in a manner that is protective of the public health and the environment, the Edgemont Area Chamber of Commerce supports and encourages the granting of state and federal licenses and permits to Powertech (USA) Inc. to commence in situ uranium recovery activities at the Dewey-Burdock Project site in Fall River and Custer Counties, South Dakota.

Edgemont AreaChamber of Commerce

By: _____ By: _____

Date: 2/27/13 Date: 2/27/13

Shea, Valois

From: John Mays [redacted]
Sent: Monday, June 19, 2017 10:39 AM
To: Minter, Douglas; Shea, Valois
Subject: Receipt of Powertech response on Draft UIC Class III/V draft permits for Dewey-Burdock.

Valois and Doug,

You should have received today a package from us with our entire response. (UPS shows it was delivered at 9:44). I was hoping you confirm you received everything today. I would be glad to bring down a flash stick today otherwise. Please let me know and would glad to hand deliver this if needed.

Also,

Just one note. In a few places, there are a few typos on Table 5 labeling this for cumulative effects, which it is not for. Table 5 represents our specific comments on the draft environmental justice document.

Sincerely,

John

Azarga URANIUM

John M. Mays
Chief Operating Officer
Azarga Uranium Corporation
[redacted]
www.azargauranium.com

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Shea, Valois

From: John Taylor [redacted]
Sent: Tuesday, April 18, 2017 1:48 PM
To: Shea, Valois
Subject: Questions about what happens at Dewey Burdock/Azaraga hearings ... John D. Taylor, Editor, Hot Springs Star

Follow Up Flag: Follow up
Flag Status: Flagged

Valois:
I'm the editor of The Hot Springs Star, a weekly paper in the heart of the Dewey Burdock project – we are the paper of record for Fall River County—and I'd like to do a preview story for this coming week's edition about what people can expect to experience at the impending hearings on Azaraga/Powertech's plans for Dewey Burdock.

Could you please answer the questions below? My deadline for a response is Thursday, April 20, at midday. Email is probably best, since I'm a one-man show here and out of the office frequently. But that doesn't work for you, I'll do my best to accommodate your schedule.

1. Take a reader through the thumbnail sketch of what happens at these hearings – You go there, various sides present their information, then there's time for Q&A?
2. What will EPA do with the comments submitted by various people? How much does this enter into EPA's decision to grant Powertech/Azarga final permits.
3. How will EPA review the comments... transcripts, video footage?
4. Anything else you want to add.... Tips for making sure comments get heard, in particular.

Sincerely yours,
John D. Taylor, Editor
The Hot Springs Star
[redacted]

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Shea, Valois

From: Julia Sage [redacted]
Sent: Thursday, May 18, 2017 10:21 AM
To: Rogers, Patrick; Shea, Valois
Subject: Dewey-Burdock site

Patrick and Valois,
I contacted my Tribal Chairman and he would like to engage in Tribal Consultation. We are working on the date for a Tribal Council meeting that would work best for us.
Thank you,
Julia

Julia I. Sage
Environmental Manager
Ponca Tribe of Nebraska
[redacted]

EARTH.....The Ultimate Mother.....Respect and Protect

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