U.S. Environmental Protection Agency
Region 8 Office, Denver, CO
Underground Injection Control Program

Information on the Dewey-Burdock Uranium Site near Edgemont, South Dakota

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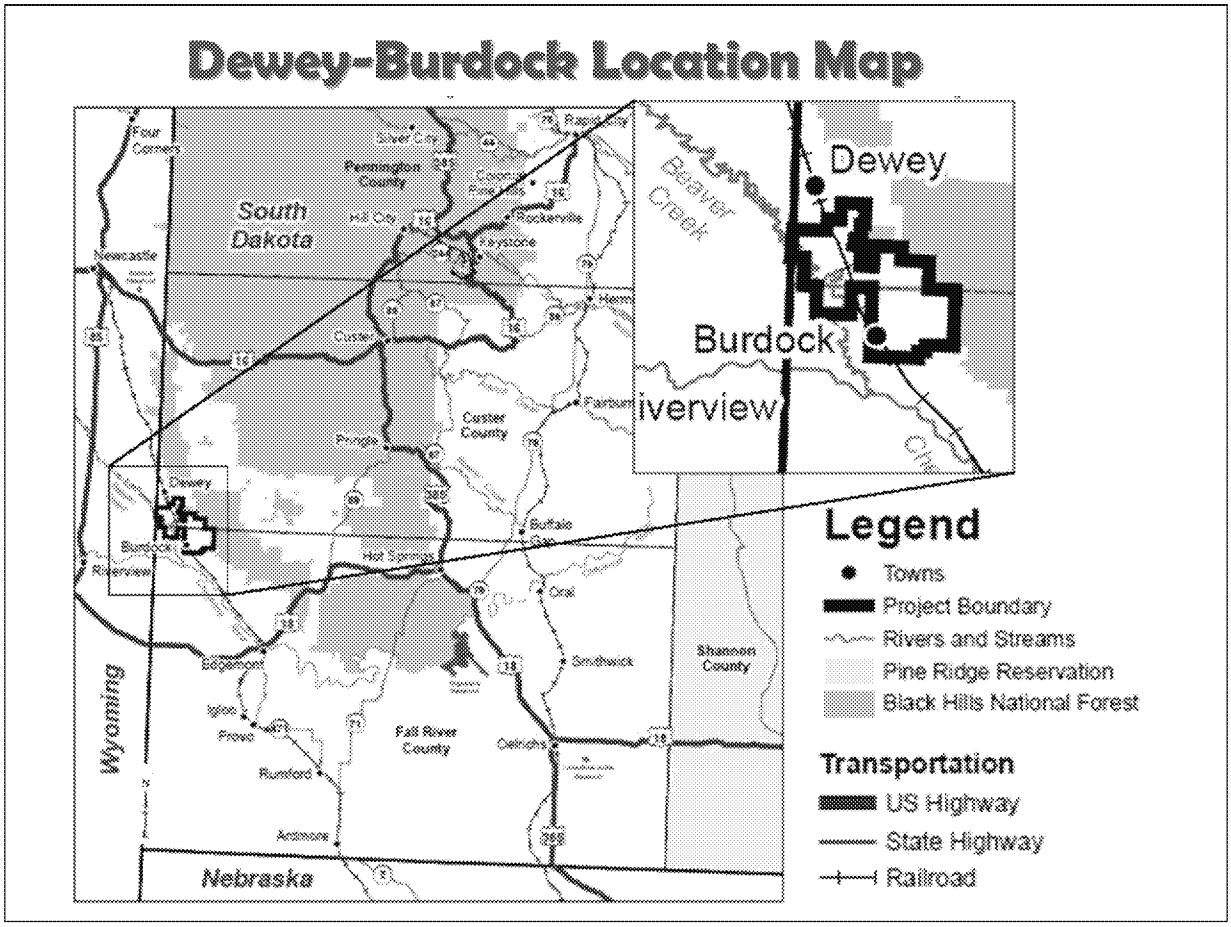
Dewey-Burdock Project Lead



The Dewey Burdock site is located in the SW corner of Custer County and the NW corner of Fall River County on the Wyoming/South Dakota border. In the southern Black Hills. About 45 miles west of the Pine Ridge Reservation. Very close to Cheyenne River which is a concern for Oglala Sioux and Cheyenne River Sioux Tribes since the Cheyenne River borders their reservations.

EPA Dewey-Burdock Permit Process

- EPA's Role
  - Underground Injection Control (UIC) Program & Regulatory Mission
  - UIC Permits
- UIC Permitting Process
  - Technical Analysis
  - Tribal Consultation
  - Draft Permits
  - Public Participation Process
- EPA Outreach
  - Public Hearings in SD
  - Additional Tribal Community Outreach
  - Continuing Tribal Consultation

EPA Dewey-Burdock Permit Process: Tribal Consultation

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.

The EPA views Consultation as a process of meaningful communication and coordination between EPA and tribal officials prior to EPA taking actions or implementing decisions that may affect tribes.

Current EPA Tribal Consultation Schedule 8/10/15-12/15/15

Goal: Informational meetings with all Tribes with possible interest in the Black Hills

- Rocky Mountain Tribal Leaders Council, Aug 13, 2015, Billings, MT
- Tribal Historic Preservation Officers, Sept 10, 2015, Bismarck, ND
- Nebraska Tribes (Santee Sioux and Ponca), Oct 28, 2015 in Kansas City
- GPTCA, Oct 30, 2015 in Rapid City
- Letters to Oklahoma Tribes offering informal consultation meetings.
- 11/1/15- TBD: Formal Consultation with Tribes upon request.

September 10, 2015, Bismarck meeting included THPOs from SD, ND and MT
Oklahoma Tribes include 1) Ponca, 2) Kiowa, 3) Apache, 4) Cheyenne & Arapaho.

Opportunities for Tribal Participation

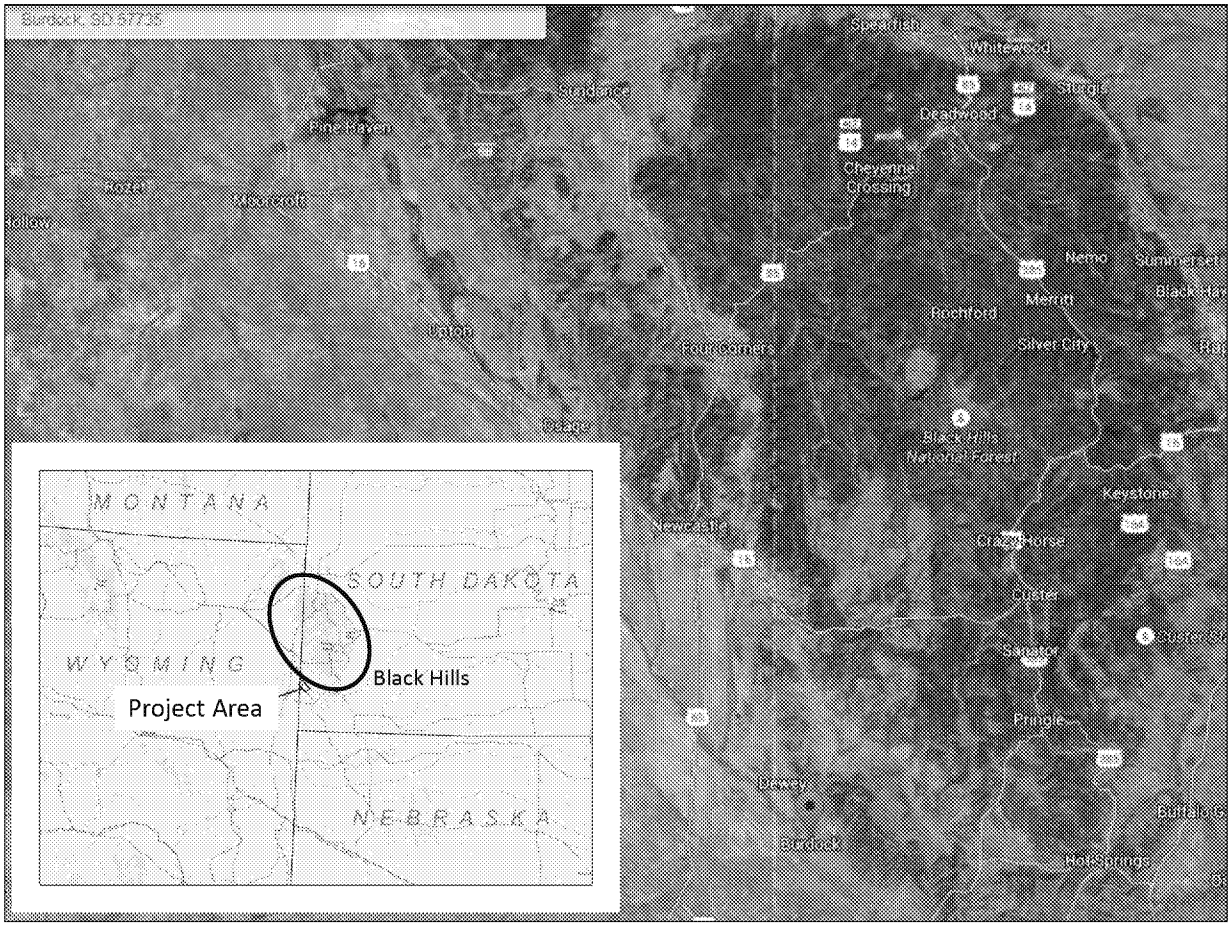
Informal and Formal Government-to-Government Consultation

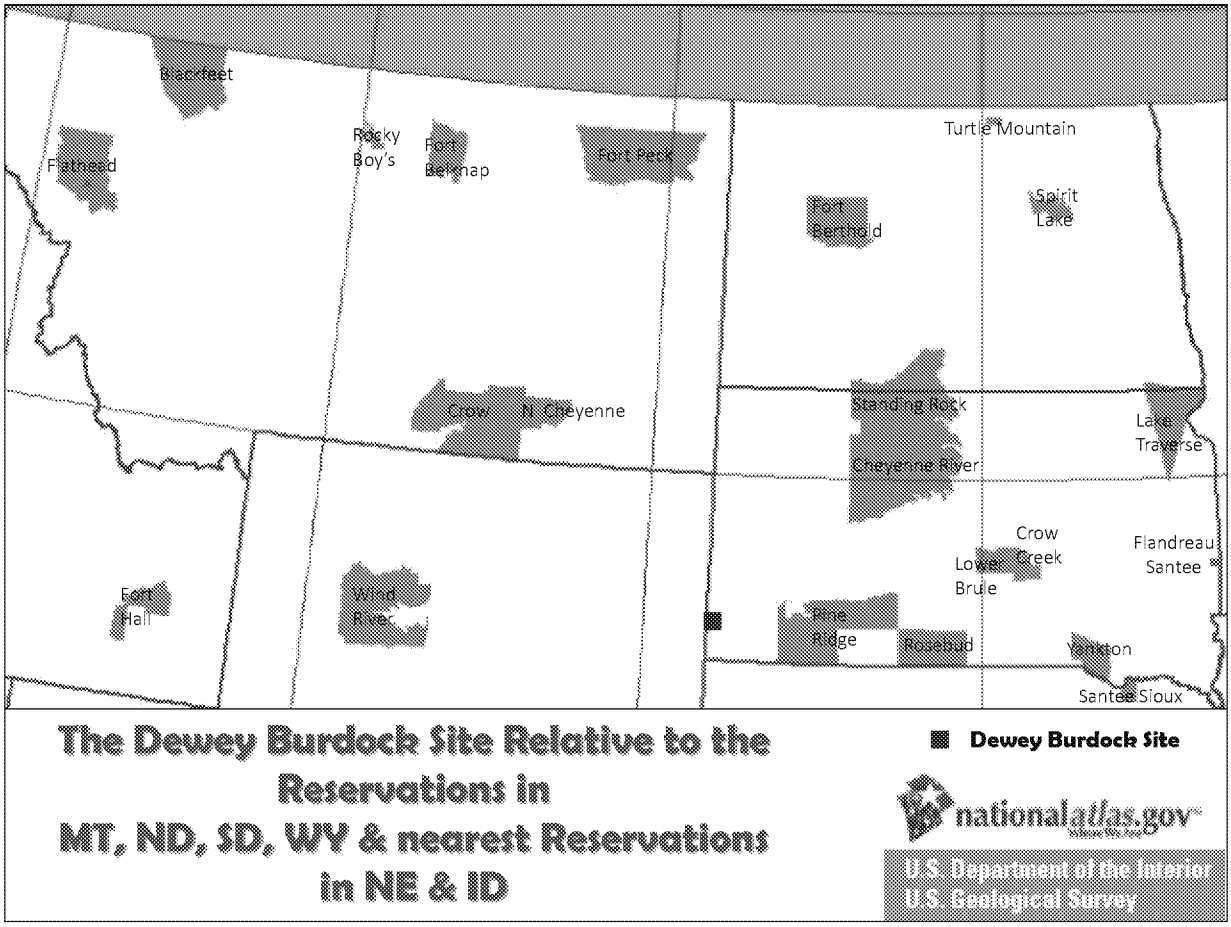
- Informal Opportunities:
  - Conference Calls or Web Conferences upon request
- Formal Opportunities:
  - Tribes will receive a formal consultation invitation in November 2015;
  - Tribe may respond and request formal consultation.
- Participate in reviewing proposed permit and aquifer exemption decisions.
- Attend Public Hearings.
- Request additional informational web conferences.
- Request additional informal and formal consultation.

EPA Region 8
Underground Injection Control Program
Permits

Applications for the Proposed
Dewey Burdock Uranium
In-Situ Recovery Site
near Edgemont, South Dakota

Valois Shea, MS, PG
EPA Region 8
Underground Injection Control Program

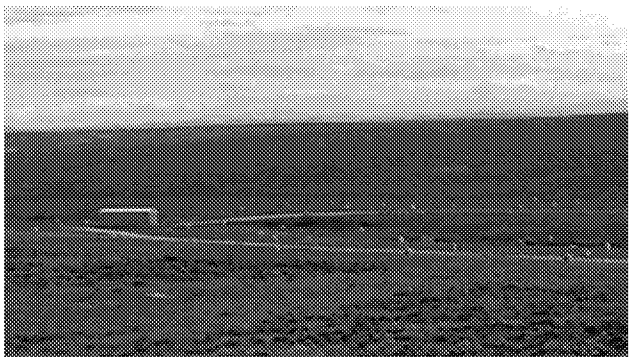

Burdock, SD 57735
Spearfish
Whitewood
Sturgis
Sundance
Deadwood
Pine Haven
Cheyenne Crossing
Rozet
Moorcroft
Nemo
Summerset
Merritt
Rochford
Union
Four Corners
Silver City
Osage
Black Hills National Forest
Keystone
Newcastle
Crazy Horse
Custer
Sanator
Pringle
Dewey
Burdock
Hot Springs
MONTANA
SOUTH DAKOTA
WYOMING
NEBRASKA
Black Hills
Project Area



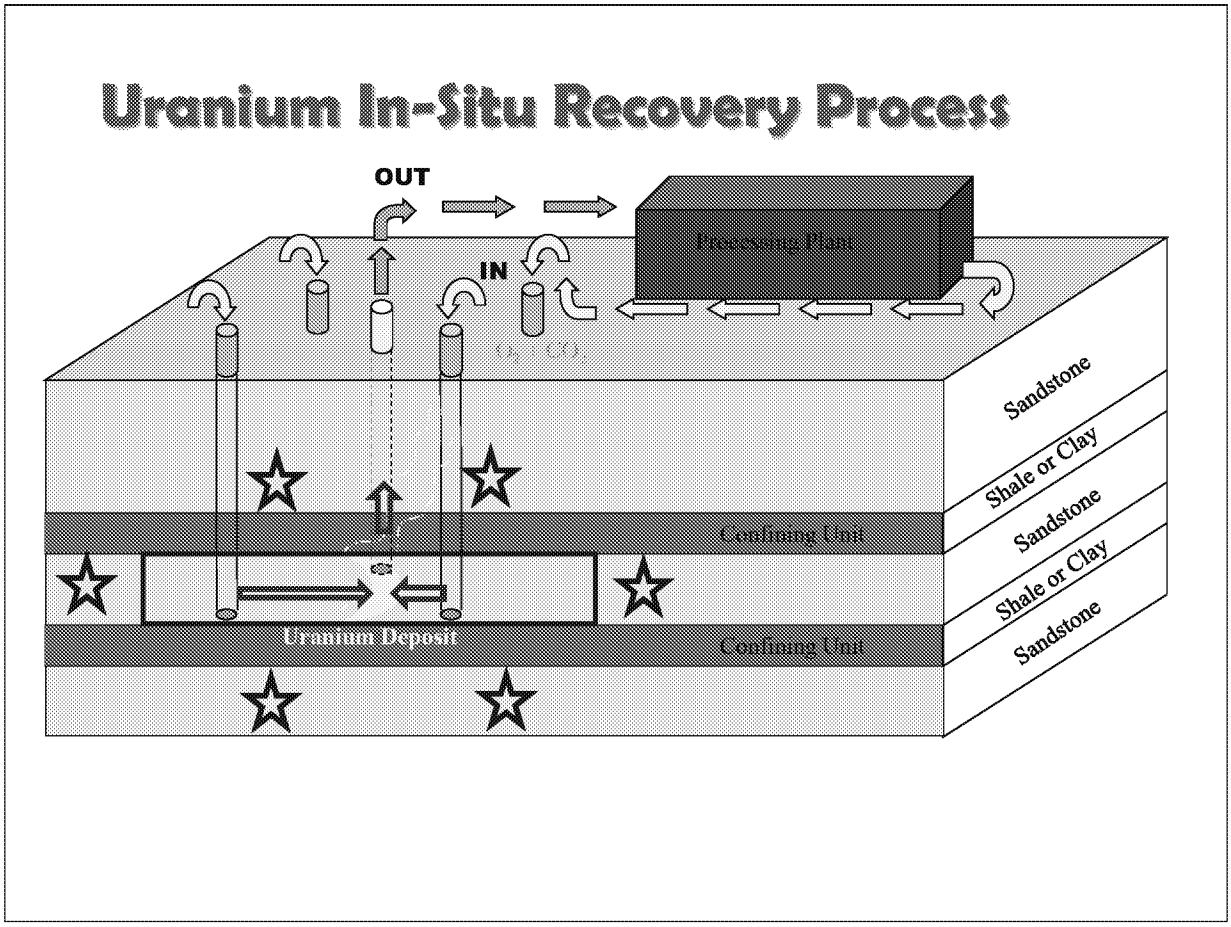
The Dewey Burdock site relative to the Reservations in MT, ND, SD, WY & nearest reservations in NE & ID

Dewey-Burdock Uranium In-Situ Recovery Site

- The Dewey-Burdock site will recover uranium using injection wells.
- There will be no open pits, underground mine workings or tailings piles.
- The uranium will be extracted from the ore deposit using injection wells.
- The uranium-bearing solution will be pumped to the surface using extraction wells.



Example of an In-Situ Uranium Recovery Site in WY



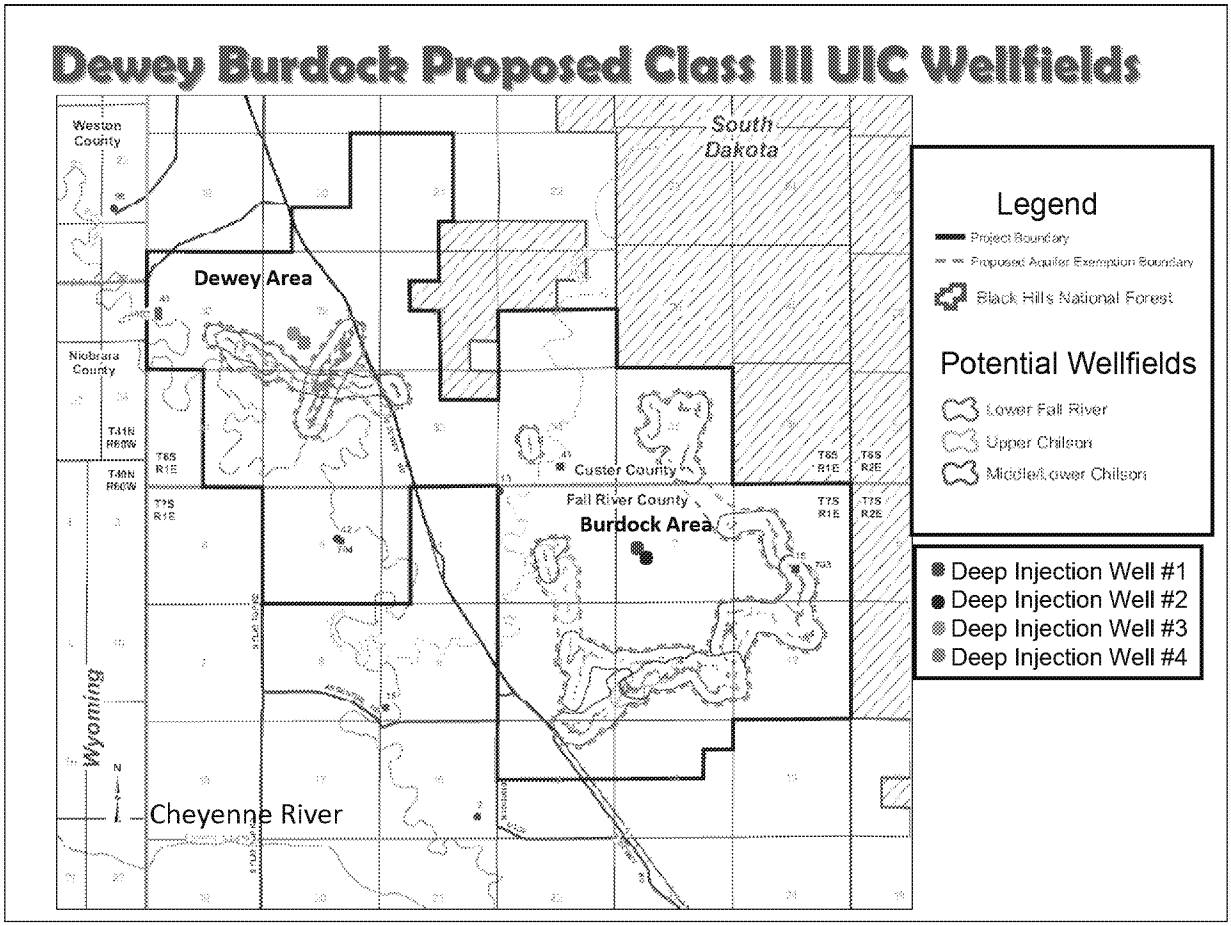
Typical five-spot pattern. In three dimensions, the wells follow the uranium deposit. Could be at different depths.
Blue box represents aquifer exemption boundary – this boundary outlines an aquifer that currently does not meet U.S. drinking water standards.
Goal with restoration process after mining is to get this zone back to baseline water quality.
Stars represent monitoring wells where we do not want to see any change in water quality.

Other Regulatory Agencies at the Dewey-Burdock Site

- The Nuclear Regulatory Commission issued a License for the entire site.
- The South Dakota Department of Environment and Natural Resources has proposed issuance of a Large Mine Permit for the entire site.
- The BLM approved a Plan of Operations for portions of the site on BLM land.
- The South Dakota Department of Environment and Natural Resources has proposed issuance of a groundwater discharge permit for the land application of treated ISR waste fluids.

The EPA Region 8 UIC Program Has Received Permit Applications for Two Types of Injection Wells

1. A Class III Permit Application for the injection of lixiviant to mobilize uranium in the ore bodies.
2. A Class V Permit Application for the disposal of treated ISR waste fluids into deep wells.



Point out
SD WY Border
Custer and Fall River Counties
Dewey Area & Burdock Area
4 proposed wellfields in Dewey Area & 10 proposed wellfields in the Burdock Area.

Regulatory Authority of the Underground Injection Control Program at the Dewey Burdock Site

The UIC Program is authorized under the Safe Drinking Water Act to protect *Underground Sources of Drinking Water* from contamination resulting from injection activities.

Underground source of drinking water (USDW) means an aquifer or part of an aquifer which supplies drinking water or contains fewer than 10,000 mg/l total dissolved solids.

Regulatory Authority of the Underground Injection Control Program at the Dewey Burdock Site

UIC Program regulations specify the following requirements for injection wells:

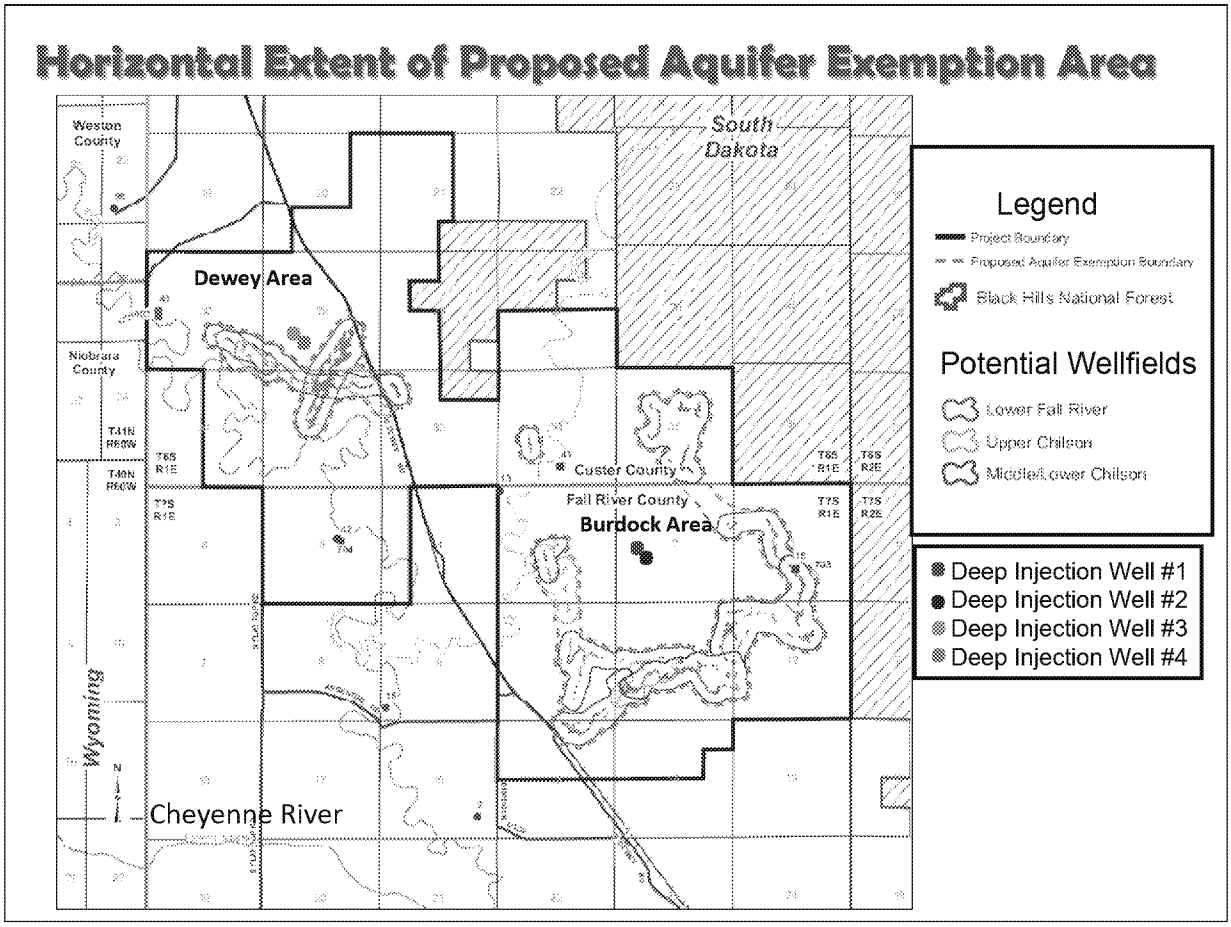
- construction,
- operation,
- monitoring,
- closure,
- financial assurance.

The EPA has been requested to Review an Aquifer Exemption

An Aquifer Exemption is required to inject into the Class III wells for uranium recovery.

An Aquifer Exemption is allowed under UIC regulations IF the USDW

1. Does not currently serve as a source of drinking water and
2. Is mineral producing or can be demonstrated to contain commercially producible minerals.



AE Boundary 120 feet outside of wellfield monitoring ring.
Point out:
SD WY Border
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4 proposed wellfields in Dewey Area & 10 proposed wellfields in the Burdock Area.

UIC Regulations

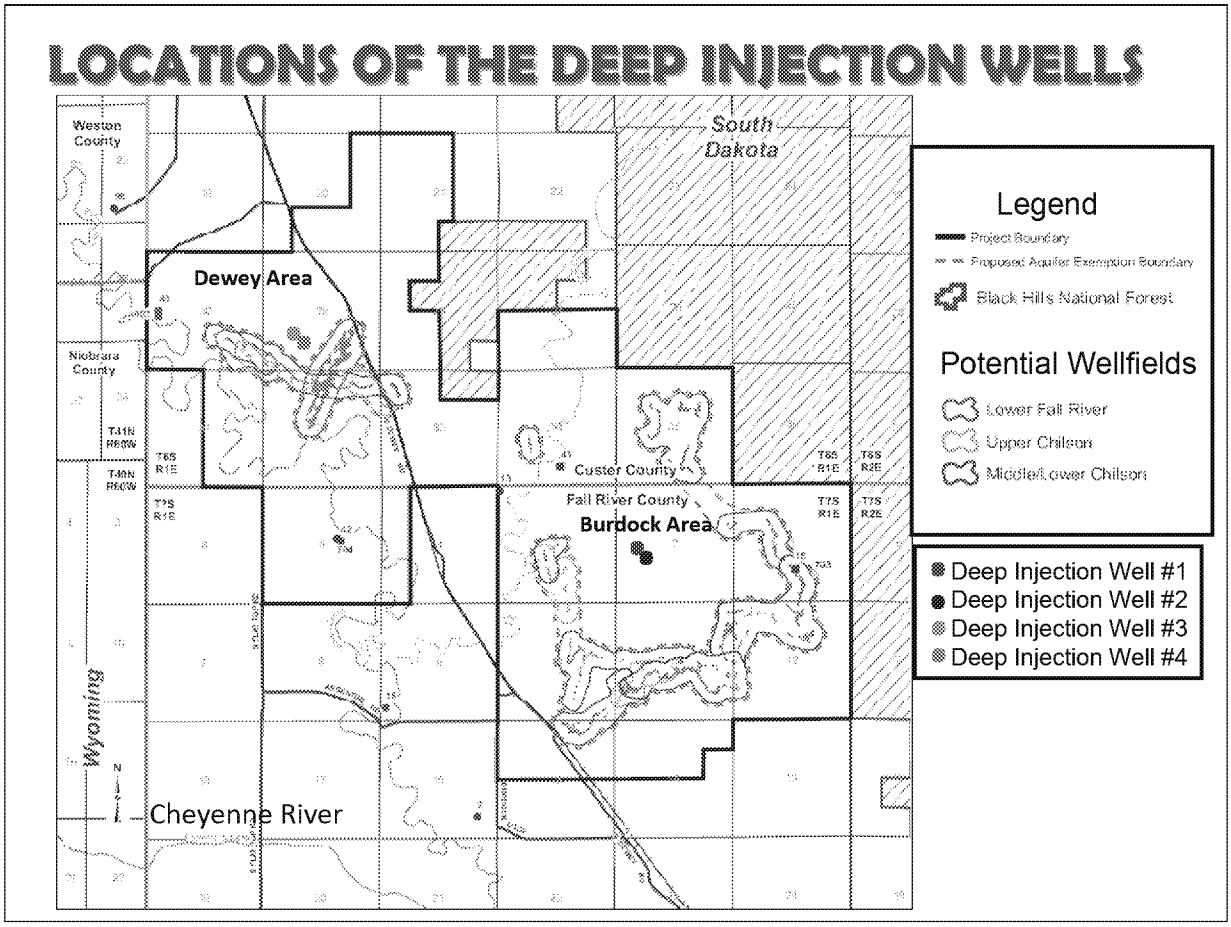
- UIC regulations require the permittee to conduct considerable testing to provide EPA hydrogeological and other data before any injection wells are authorized to operate.
- The data must demonstrate vertical confinement to prevent movement of fluids out of the injection zone so that no USDWs are contaminated.
- The data must also demonstrate that it is possible to contain injection zone fluids horizontally to prevent contaminant migration into USDWs.

UIC Regulations

- UIC regulations require protection of USDWs around the AE area through extensive monitoring.
- UIC regulations require that no ISR process contaminants cross the aquifer exemption boundary during or after ISR operations.

UIC Regulations

- UIC regulations authorize enforcement action when UIC regulations and/or permit conditions are violated.
- Enforcement actions can include requirements for groundwater remediation activities if appropriate.



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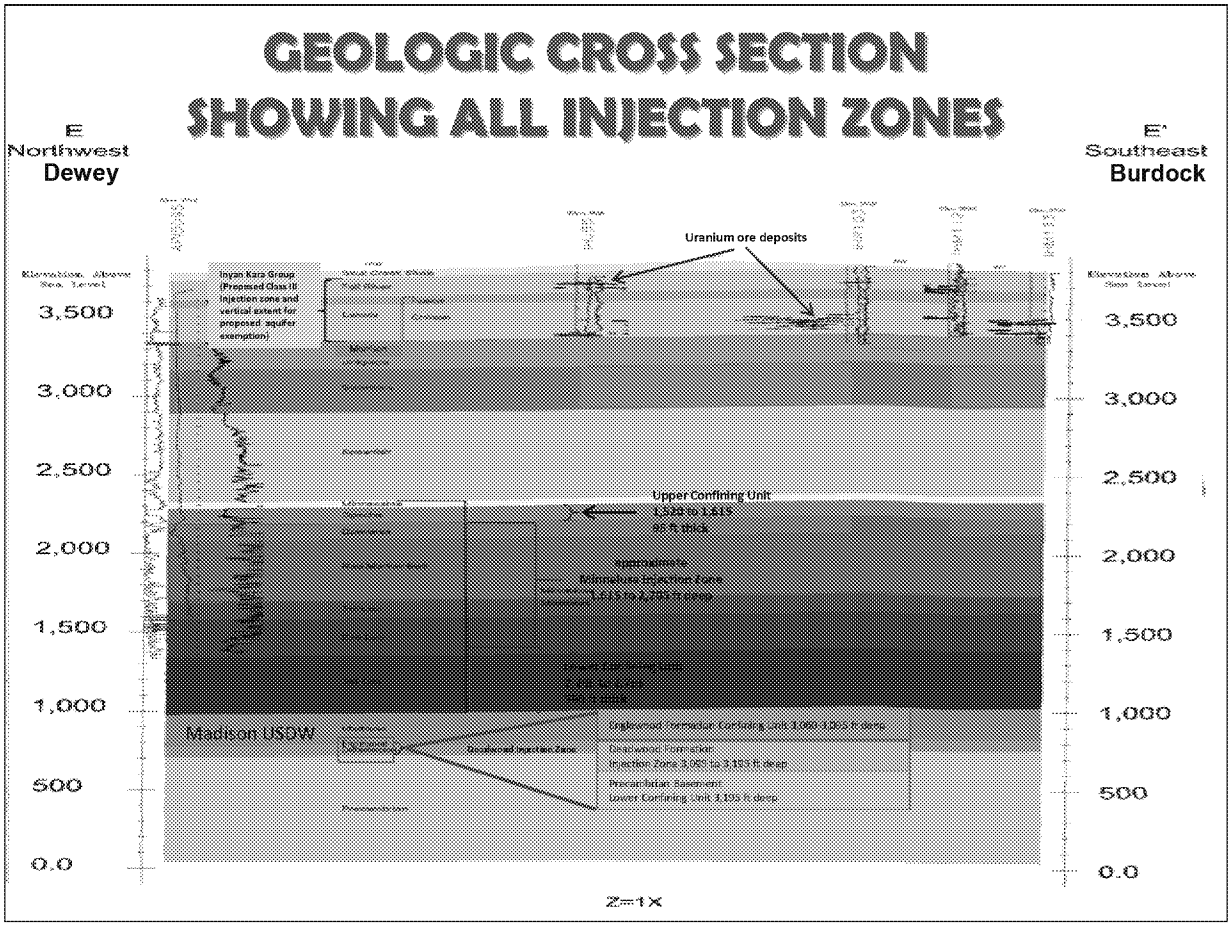

Figure 4. Stratigraphic Column at the Dewey Burdock Site Showing Proposed Injection Zones.
Enclosure to invitation letter

UIC Permitting Process

- After issuance of any draft permit and aquifer exemption decisions, there will be a 60 day public review and comment period.
- Other reviews required in UIC permitting process:
  - *Endangered Species Act,*
  - *National Historic Preservation Act 106 consultation,*
  - *Environmental Justice Analysis,*
  - *Cumulative effects of construction and operation of injection wells.*
- The EPA will hold at least two public hearings in South Dakota.
- The EPA will conduct additional outreach in Tribal communities upon request.

National Historic Preservation Act

- EPA's NHPA obligations:
  - Consider the effects of the undertaking on historic properties
  - Consult with tribes (and others) during our review
  - EPA has the option of designating NRC as the lead for this process, or of conducting the review ourselves.
- We are reviewing the historic properties information developed in the NRC process.
- Information is available to the public at http://adams.nrc.gov/ehd.
- We welcome input from tribes on historic properties in the project area.

Ways in which Tribal Officials Can Be Involved in the UIC Permitting Process

- Participate in informal and formal government to government consultation.
- Request informational web conferences on topics of concern.
- Participate in the review of the proposed permit and aquifer exemption decisions.
- Attend public hearings.

Provide info about requested web conferences to date, those conducted & those planned.

Questions & Discussion

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