

December 9, 2010

MEMORANDUM TO: Kevin Hsueh, Chief
Environmental Review Branch-B
Environmental Protection
and Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

FROM: Haimanot Yilma, Project Manager **./RA/**
Environmental Review Branch-B
Environmental Protection
and Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Federal and State Materials
and Environmental Management Programs

SUBJECT: INFORMAL INFORMATION GATHERING MEETINGS TRIP -
SUMMARY REPORT FOR THE PROPOSED DEWEY-BURDOCK
IN-SITU RECOVERY FACILITY (DOCKET NO. 040-09075)

During the week of November 30, 2009, the U.S. Nuclear Regulatory Commission (NRC) staff and its contractors met with various local, State, Federal agencies as well as other interested stakeholders in South Dakota. The purpose of the meeting was twofold: 1) to gather information to be considered in NRC's ongoing Supplemental Environmental Impact Statement (SEIS) for the proposed Powertech Inc. Dewey Burdock In-Situ Recover (ISR) facility and, 2) to communicate NRC's environmental review process, including how and when the public can to participate in the process. Enclosed are a summary of each meeting and a list of participants.

Enclosure: Meeting Summary

CONTACT: Haimanot Yilma, DWMEP/FSME
(301) 415-8029

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During the week of November 30, 2009, the U.S. Nuclear Regulatory Commission (NRC) staff and their contractor staff met with various local, State, Federal agencies as well as other interested stakeholders in South Dakota to obtain input on information that should be considered in NRC's ongoing environmental review being conducted as part of NRC's licensing reviews for In-Situ Leach application for Source Material License filed on August 10, 2009, by Powertech Inc. for Dewey Burdock Site. The purpose of these meetings was to gather information to assist NRC and its contractor in developing its environmental reviews and to provide information to these agencies and organizations the NRC's procedures and regulations to comply with the National Environmental Policy Act. Enclosed are a summary of each meeting and a list of participants.

Enclosure: Meeting Summary

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(301) 415-8029

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OFC	DWMEP	DWMEP	DWMEP	OGC	DWMEP
NAME	HYilma	AWalker-Smith	AWalker-Smith	PJehle	HYilma
DATE	12/30/09	02/05/10	10/27/10	12/09/10	12/09/10

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**Site Visit to the Proposed Dewey-Burdock In-Situ Recovery (ISR) Facility,
Fall River and Custer Counties, South Dakota, and Meetings with Federal, State, County
Agencies, and Local Organizations
November 30 - December 4, 2009**

Introduction:

Powertech (USA), Inc. (Powertech) submitted a source material license application on February 26, 2009, to the U.S. Nuclear Regulatory Commission (NRC) for the proposed Dewey-Burdock ISR facility in Fall River and Custer Counties, South Dakota. The license application included environmental and technical reports. If approved by NRC, Powertech would conduct *in-situ* recovery (ISR) operations for uranium extraction at the proposed Dewey-Burdock project site. Powertech withdrew the February 26, 2009 application, in response to NRC's request for additional information needed to complete its application. On August 10, 2009, Powertech resubmitted the Dewey-Burdock application, which included the original environmental and technical reports and a supplement, to address NRC's additional data requests. By Task Order 1 of Contract No. NRC-41-09-011, the Center for Nuclear Waste Regulatory Analyses (CNWRA[®]) is assisting NRC staff in reviewing Powertech's license application documents, evaluating potential environmental impacts of the proposed action and alternatives, and developing a draft supplemental environmental impact statement (SEIS) in accordance with NRC environmental protection regulations at 10 CFR Part 51.

From November 30, 2009 through December 4, 2009, NRC and CNWRA staff conducted an information gathering trip that included a site visit to the proposed Dewey Burdock ISR facility on December 3, 2009. The purpose of the site visit was for the NRC and CNWRA staff to see firsthand proposed facility site to learn more about the contents of the environmental report, technical report, and supplement to the license application with Powertech staff. During the week of November 30, 2009 to December 4, 2009, meetings were also held to gather information for consideration in NRC's environmental review. NRC and CNWRA staff met with the following Federal and State of South Dakota agencies: U.S. Bureau of Land Management (BLM); U.S. Geological Survey (USGS); U.S. Army Corps of Engineers (USACE); U.S. Forest Service (USFS); South Dakota State Historical Society (SDSHS); South Dakota Department of Environment and Natural Resources (DENR); South Dakota Game Fish and Parks (SDGFP); and the South Dakota Office of Tribal Government Relations (OTGR). In addition, meetings were held with the following county agencies and local organizations: Defenders of the Black Hills, Edgemont Area Chamber of Commerce, and Custer County Planning and Economic Development. At these meetings, NRC and CNWRA staff elicited information pertaining to the proposed Dewey Burdock ISR facility from the members of these agencies and organizations that should be considered in NRC's environmental review.. This report summarizes information gathered during the trip.

The following NRC and CNWRA staff members participated in the site visit and meetings:

Haimanot Yilma, Project Manager, NRC
Behram Shroff, Project Manager, NRC
William Ford, Team Lead, NRC
James Prikryl, Principal Investigator, Senior Research Scientist, CNWRA
Patrick LaPlante, Staff Scientist, CNWRA
Hakan Basagaoglu, Senior Research Scientist, CNWRA

Enclosure

**Meeting With South Dakota State Historical Society Archaeological Research Center,
Rapid City, South Dakota**

Participant included:

Michael Fosha, Assistant State Archaeologist, SDSHS

On November 30, 2009, NRC and CNWRA staff met with the Assistant State Archaeologist at the SDSHS Archaeological Research Center (ARC) to hear his perspective on the potential impacts of the proposed Dewey-Burdock ISR facility on cultural and historical resources within and adjacent to the site. ARC is the lead review agency for archaeological investigations pertaining to mineral exploration and mining in South Dakota. The Assistant State Archaeologist described the results of the Level III Cultural Resources Evaluation conducted within the proposed project area by personnel from the Archaeology Laboratory, Augustana College, Sioux Falls, South Dakota. At the proposed area, most cultural and historic sites that might qualify for listing in the National Register of Historic Places were found on hill slopes outside the area of proposed mining operations. The Assistant State Archaeologist also described the stipulations of the Memorandum of Understanding (MOU) between Powertech and ARC concerning historical and cultural sites within the project area. If historic or archaeological sites are discovered during any phase of the proposed ISR project, the MOU requires Powertech to halt surface-disturbing activities in the immediate vicinity and contact ARC. The MOU stipulates that Powertech will not resume activities in the area until ARC grants a clearance to proceed.

The Assistant State Archaeologist noted that the State Historical Preservation Office (SHPO) would consult with the state archaeologist on historic/cultural issues at the proposed project site. The Assistant State Archaeologist also described ARC's review of Powertech's request for determination of the proposed project area to determine whether lands constitute special, exceptional, critical, or unique status. The Assistant State Archaeologist also noted that documentation and information on Powertech's request for determination could be found on DENR's website (<http://denr.sd.gov/des/mm/powertechsupage.aspx>). Based in part on ARC's recommendation, DENR determined that the lands described in Powertech's request for determination do not constitute special, exceptional, critical, or unique lands. Subsequent hearings on nominating petitions conducted by the South Dakota Board of Minerals and Environment found that the lands within the proposed Dewey-Burdock ISR Project area do not constitute special, exceptional, critical, or unique lands.

Follow-up actions: None.

Meeting With South Dakota Game Fish and Parks, Rapid City, South Dakota

Participant included:

Stan Michals, Energy and Minerals Coordinator, Wildlife Division, SDGFP on November 30, 2009, NRC and CNWRA staff met with SDGFP staff to learn his perspective on the potential impacts on ecological resources associated with the proposed Dewey-Burdock ISR facility. SDGFP manages South Dakota's wildlife resources, parks, and outdoor recreational areas.

Although SDGFP would not issue any permits related to the proposed project, it has authority over state-listed threatened species and species of local concern and consults closely with DENR on activities that may affect ecological resources within the proposed project area. Discussions with the SDGFP focused mainly on state-listed threatened and endangered species (e.g., the plains top minnow) and species of local concern (e.g., raptors). Specifically, SDGFP described mitigation measures for nesting raptors including nest relocation and avoidance during nesting months. Although SDGFP indicated that wetlands are not a concern for vegetation and wildlife at the proposed area, SDGFP described aquatic monitoring as a permit condition for perennial streams to ensure protection of threatened aquatic species. SDGFP indicated that the sage-grouse and the black-footed ferret are not of concern at the proposed area. SDGFP indicated that potential effects on birds flying through the area and drinking at exposed evaporation ponds. SDGFP indicated the need for biological tests to determine the toxicity of constituents in evaporation ponds and mitigation measures, such as netting and fencing, to restrict wildlife access to exposed ponds. SDGFP indicated that reseeded of disturbed land and irrigation of land application areas, could potentially create increased forage and, therefore, attract deer and elk onto the proposed project area. SDGFP indicated the need for testing and monitoring to determine the buildup of salts and metals in soils affected by potential land application of treated wastewater generated by proposed project activities. Restricting walk-in hunting within the proposed project area was not a concern for SDGFP.

Follow-up actions: NRC and CNWRA staff will contact SDGFP for independent confirmation of threatened and endangered species analysis within and in the vicinity of the project area.

Meeting With U.S. Bureau of Land Management, Rapid City, South Dakota

Participants included:

Marian M. Atkins, South Dakota Field Manager, BLM
Russ Pigors, Physical Scientist, BLM

On December 1, 2009, NRC and CNWRA staff met with BLM staff. BLM manages public lands for the Federal government. NRC and BLM have signed a MOU to cooperate in the development and preparation of environmental documents associated with uranium recovery projects on BLM-managed land. The proposed Dewey-Burdock project facility contains approximately 240 acres of BLM-managed land; portions of these BLM lands will be impacted or disturbed by proposed ISR activities. NRC has provided BLM with an outline of the SEIS being developed for the proposed Dewey-Burdock ISR project.

BLM staff indicated that they had received a plan of development from Powertech for the proposed Dewey-Burdock ISR facility. The plan of development focuses on mining operations and must be reviewed and approved by BLM before any construction activities can be conducted on the proposed project area. BLM staff indicated that the review of Powertech's plan of development had not yet been initiated. The current BLM Resource Management Plan for South Dakota does not specify a Visual Resource Management (VRM) classification for lands within the proposed project area. BLM staff noted that nothing but Class IV VRM designations exist in the area of the proposed project. BLM is preparing a new Resource Management Plan for South Dakota, and this new Resource Management Plan will specify visual resource management classes for land within the project area.

BLM staff described GCC Dacotah Inc.'s proposed Dewey Conveyor Project, which would be located north of the proposed Dewey Burdock project area. The Dewey Conveyor Project would transport limestone from a future quarry location in Custer County to a rail load-out facility near Dewey, South Dakota. BLM has prepared a draft EIS for the project in which a trucking alternative was developed and analyzed. BLM staff provided a copy of the Dewey Conveyor Project draft EIS to NRC staff.

With respect to land use on BLM-managed land within the proposed project area, issues such as grazing restrictions, legal access, and construction of access roads were described. BLM staff noted that BLM-managed land within the project area currently has no public access. BLM indicated that the type and extent of project fencing needs to be clarified to evaluate impacts on livestock grazing. BLM's main focus with respect to resource management at the proposed project area is water quality and quantity. Specifically, BLM mentioned the potential for contaminated surface water runoff and contaminated groundwater to impact the water quality of Beaver Creek and the Cheyenne River. Geology, soils, and seismic activity on the proposed project area are not a major focus for the BLM.

BLM staff noted that they have had discussions with the South Dakota SHPO with respect to Section 106 of the National Historic Preservation Act for the GCC Dacotah Inc.'s proposed Dewey Conveyor Project. As a result, an ethnographic study was conducted near the proposed Dewey-Burdock project area to identify sites of cultural and religious significance to Native Americans. This study did not report regular ceremonial, cultural, and religious activity by the consulted tribal members inside the Dacotah project area.

BLM provided NRC staff with a plat map of oil and gas leases within and adjacent to the project area. Some oil and gas leases exist in the proposed project area, but there is currently low demand for oil and gas leasing on available land within the proposed project area. Past resource development in the proposed project area included small bituminous coal deposits east and south of the proposed project area and a small gas field (Barker Dome Field) east of the proposed project area.

Follow-up actions: NRC staff will keep in close contact with BLM staff to discuss and determine potential BLM involvement in reviewing, developing, and preparing sections of the SEIS for the proposed Dewey-Burdock ISR facility per the NRC/BLM MOU

Meeting With Defenders of the Black Hills, Rapid City, South Dakota

Participant included:

Charmaine White Face, Coordinator

On December 1, 2009, NRC and CNWRA staff met with Charmaine White Face, coordinator of the Defenders of the Black Hills, to learn their perspectives on potential environmental impacts of the proposed Dewey-Burdock ISR facility. The Defenders of the Black Hills is a volunteer public interest group that focuses on Native American issues. Ms. White Face discussed several concerns with the proposed project. The first concern dealt with cumulative effects of past and future mining activities and the potential for large-scale contamination of surface and

groundwater. Ms. White Face described concerns about the 142 open pit mines in the Black Hills area and their impact on the Cheyenne River. Ms. White Face noted that the ore-bearing formations for the proposed project, the Lakota and Fall River Formations, have artesian characteristics and connect to the Cheyenne River. Ms. White Face commented on the potential for cross-contamination of the aquifer at the proposed site resulting from the 4,000 existing on-site exploratory boreholes. Concerns about potential contamination of the Dakota Sandstone (a regional aquifer) via the Madison Limestone were expressed.

Ms. White Face described the potential effects of contaminated groundwater from uranium mining on health and safety. Ms. White Face suggested that high cancer rates among Native Americans in South Dakota are linked to contamination from past mining activities. Ms. White Face noted how these health and safety concerns could affect the tourism industry in the Black Hills area. A second concern dealt with the disturbance of cultural and historic sites within the proposed project area. Specifically, Ms. White Face stated that the Defenders of the Black Hills is concerned about the disturbance of burial grounds on private land within the project area, as burial grounds on private land have no state or federal protection. Ms. White Face stated that according to the Fort Laramie Treaty of 1868, indigenous people of the Black Hills should be protected. Ms. White Face encouraged NRC to communicate with Tribal Governments and the Great Plains Tribal Chairman's Association and to have public meetings with Lakota language translators. Ms. White Face also provided the names and telephone numbers of groups, individuals, and tribal governments that should be contacted regarding the proposed ISR facility.

Follow-up actions: NRC staff will attempt to contact the individuals, groups, and tribal governments for whom the Defenders of the Black Hills provided contact information to gather information on issues that should be considered in NRC's environmental reviews.

Meeting With U.S. Geological Survey, Rapid City, South Dakota

Participant included:

Daniel G. Driscoll, USGS

On December 1, 2009, NRC and CNWRA staff met with Daniel G. Driscoll from USGS to learn his perspective on the geological and hydrological aspects of the proposed Dewey-Burdock ISR facility. He described the regional hydrology of the Black Hills area and the five major aquifers below the proposed project area. These aquifers include the Inyan Kara Group, Minnekahta Limestone, Minnelusa Formation, Madison Formation, and Deadwood Formation. When describing the hydrology of the Black Hills area, USGS treats the Inyan Kara Group as one unit. The Inyan Kara Group hosts uranium mineralization at the proposed Dewey-Burdock project area. USGS staff indicated that typically the regional hydrological gradient is upward from the Madison Formation to the Inyan Kara Group and that it would be difficult for contamination resulting from mining operations at the proposed project to move downward from the Inyan Kara Group to the Madison Formation. The Madison Formation is a major source of drinking water for communities, such as Edgemont, in the vicinity of the project. USGS staff indicated that precipitation is the primary recharge mechanism for the Inyan Kara Group. With regard to surface water, within the project area it is uncommon for streams to flow except for Beaver Creek, which has artesian springs up-gradient from the project area. USGS was most focused

on the potential for contaminated groundwater to travel from the project area and discharge to stream channels (e.g., Beaver Creek and the Cheyenne River). USGS staff indicated that the land application of treated wastewater and the potential for this water to infiltrate into underlying aquifers is not a significant issue.

USGS staff described faulting in the proposed project area and indicated that all units (both aquifers and aquitards) have secondary porosity due to fracturing. Although some minor tremors have been recorded, USGS staff indicated that seismic activity is not common and is not a concern in the vicinity of the proposed project area.

USGS provided NRC and CNWRA staff with USGS publications containing hydrologic information on the Black Hills area. In addition, USGS provided NRC and CNWRA staff with publicly available documents containing hydrogeologic data, structure contour maps, and potentiometric surface contours maps of the Inyan Kara Group, Minnekahta Limestone, Minnelusa Formation, Madison Formation, and Deadwood Formation in the Black Hills area. Documents obtained from the USGS are listed in Appendix A.

Follow-up actions: None.

Meeting With South Dakota Department of Environment and Natural Resources, Pierre, South Dakota

Participants included:

Matt Hicks, Hydrologist, Ground Water Quality Program, DENR
Patrick Snyder, Environmental Senior Scientist, DENR
William Markley, Administrator, Ground Water Quality Program, DENR
Bob Townsend, Administrator, Minerals and Mining Program, DENR
Garland Erbek, DENR
Mark Mayer, DENR
Mike Lees, Minerals and Mining Program, DENR
Jim Wendte, Waste Management Program, DENR
Brian Gustafson, Air Quality Program, DENR
Mike Cepak, Minerals and Mining Program, DENR
Roberta Hudson, Minerals and Mining Program, DENR
Derric Iles, Geological Survey, DENR
Dragan Filipovic, Geological Survey, DENR
Eric Holm, Minerals and Mining Program, DENR
Tom Brandner, Ground Water Quality Program, DENR
Gary Haag, Ground Water Quality Program, DENR
Kelli Buscher, Surface Water Quality Program, DENR

On December 2, 2009, NRC and CNWRA staff met with staff of the South Dakota DENR to learn their perspective on various aspects of Powertech's license application and proposed project area. DENR is the primary state permitting agency for Powertech's proposed Dewey-Burdock ISR facility. DENR has responsibility for determining whether to issue the following state permits for the proposed project: mining permit, National Pollutant Discharge Elimination System (NPDES) surface water discharge permit, air quality permit, water rights

permit, groundwater discharge permit (for land application of waste water), and a Class III Underground Injection Control (UIC) permit for mining operations within the Inyan Kara Group. Because South Dakota is not a primacy state, DENR consults and works with U.S. Environmental Protection Agency (EPA) on applications for UIC permits (e.g., Class III for lixiviant injection associated with ISR of uranium; Class V for deep well waste water disposal). South Dakota has state laws that address both Class III and Class V wells.

With regard to permitting at the proposed project area, DENR noted that Powertech submitted an application for a Class III UIC permit on April 22, 2009. DENR's application completeness review determined that the application was incomplete for detailed technical review. On August 6, 2009, DENR sent comments regarding issues of concern they had with the application along with requests for additional information to Powertech. These comments can be viewed and downloaded from DENR's website

http://denr.sd.gov/powertech/GW/Powertech_Class_III_UIC_Permit_Application_Comments.pdf.

DENR's concerns with Powertech's Class III UIC permit application included: (i) a lack of subsurface characterization to understand the geology and hydrology of the site; (ii) differing opinions on groundwater flow rate within and in the vicinity of the project area; (iii) structure and isopach maps that appear to be incorrectly contoured; (iv) complications in hydrology (e.g., cross contamination) caused by past exploratory drill holes; (v) potential hydrologic connection of production zones to abandoned surface mines; and (vi) uncertainties in the effectiveness and continuity of confining layers to isolate the ore-bearing aquifers. Currently, DENR is waiting for additional information from Powertech to resolve DENR concerns with the Class III UIC permit application. South Dakota owns all groundwater in the State, and a State permit must be secured for beneficial use of water. At present, Powertech has not applied to the State for any water rights within the proposed project area.

In regard to waste management, permitting of Class V (nonhazardous) deep disposal wells must meet EPA drinking water standards defined by maximum contaminant levels (MCLs) at the point of injection. DENR has indicated that land application of treated waste water, in general, is feasible to permit, but surface runoff is not allowed and site soils must be suitable. In addition, waste water applied to the land must meet state groundwater discharge limits so that groundwater is not impacted and waste water must also meet state quality standards, which are based on EPA MCLs. DENR indicated that a potential risks to wildlife from surface impoundments is one of the issues that should be addressed. Plans and specifications for surface impoundments in South Dakota are submitted under DENR's mine permitting rules. DENR would work with SDGFP to mitigate the potential effects of surface impoundments on wildlife (e.g., netting and determination of the toxicity of waste water constituents to wildlife).

UIC and water rights permits are subject to hearings before boards, similar to the NRC process. DENR indicated that it prefers to wait for NRC licensing and EPA permitting before it begins State permitting for the proposed project. DENR summarized its four major areas of focus for

its review with the proposed project as follows: (i) can Powertech mine the uranium deposit economically; (ii) can Powertech effectively monitor groundwater excursions; (iii) can Powertech effectively control injected mining solutions; and (iv) can Powertech restore the aquifer after uranium recovery operations cease.

At the conclusion of the meeting, DENR provided NRC and CNWRA staff with a document that included a list of questions and concerns that DENR staff have raised with the exhibits submitted in Powertech's supplement to the NRC license application dated August 10, 2009. In addition, DENR provided the link to a website containing geological stratigraphic sections of the Black Hills area (http://www.sddenr.net/publist/search_results_publist.cfm?limit_to_download=Yes&sql_option=21) .

Follow-up actions: NRC staff will keep in contact with DENR staff to track the status of Powertech's Class III UIC permit application.

Meeting With Office of Tribal Government Relations, Pierre, South Dakota

Participants included:

Roger Campbell, Director, OTGR

On December 2, 2009, NRC staff met with Roger Campbell of the Office of Tribal Government Relations (OTGR) to learn OTGR's perspective on potential impact of the proposed Dewey-Burdock ISR facility. OTGR staff stated that potential harms to the environment will be of great interest to the tribal governments. OTGR staff suggested that NRC staff contact the following organizations if/when conducting outreach activities: United Sioux Tribes Development Corporation; Aberdeen Area Tribal Chairman's Health Board (AATCHB.com); and American Indian Higher Education Consortium.

Follow-up actions: None.

Meeting With the State Historical Preservation Office, South Dakota State Historical Society, Pierre, South Dakota

Participants included:

Paige Hoskinson Olson, Review and Compliance Coordinator, SHPO, SDSHS
Jason Hogan, Director, SDSHS
Amy Irving, SHPO, SDSHS

On December 2, 2009, NRC and CNWRA staff met with the staff of South Dakota SHPO to learn their perspective on potential impacts of the proposed Dewey-Burdock ISR facility on historical and cultural resources at the proposed site. In accordance with Section 106 of the National Historic Preservation Act, the SHPO provides oversight of all Federal and State historic preservation laws. SHPO staff showed NRC and CNWRA staff a map of the proposed project area with the locations of archaeological sites. SHPO staff provided a copy of this map to NRC

staff. During the meeting, NRC staff indicated that an official Section 106 Consultation Letter would be sent to the SHPO along with the Level III Cultural Resources Evaluation conducted within the proposed project area by personnel from the Archaeology Laboratory, Augustana College, Sioux Falls, South Dakota.

The SHPO ensures compliance with applicable Federal laws on tribal lands and consults with tribes and the Bureau of Indian Affairs concerning activities that occur on tribal reservation lands. NRC and SHPO staff discussed the possibility of entering into a “Programmatic Agreement” (under Section 106) with Powertech as a signatory that will set forth procedures and mitigation measures to preserve present cultural resources at the proposed site. SHPO staff indicated that most tribes in South Dakota have Tribal Historical Preservation Offices and that NRC should consult with these tribes concerning the proposed project. SHPO staff noted that most tribes are set up to consult under National Historic Preservation Act guidelines rather than NEPA. SHPO staff provided NRC staff with a list of tribes in South Dakota that may have interest in the proposed project.

Follow-up actions: NRC staff will contact SHPO regarding the use of license conditions and the programmatic agreement for mitigation to ensure preservation of cultural resources at the project site. NRC staff will also contact SHPO staff to describe consultations with tribes in South Dakota. NRC staff will consult with the tribes on the list provided, as appropriate.

Meeting With U.S. Army Corps of Engineers, Pierre, South Dakota

Participant included:

Steve Naylor, Manager, USACE

On December 2, 2009, NRC and CNWRA staff met with USACE staff to learn the USACE’s perspectives on potential environmental impacts of the proposed Dewey-Burdock ISR facility on wetlands and surface water bodies within and in the vicinity of the proposed project site. USACE identifies jurisdictional waters (i.e., waters of the United States) that are subject to the Clean Water Act. USACE would regulate any dredge or fill material placed in jurisdictionally determined waters on the project site via a 404 Permit. In August 2008, Powertech requested that USACE evaluate jurisdictional waters that exist on the proposed Dewey-Burdock project area. USACE conducted an evaluation and sent a letter (dated January 14, 2009) with evaluation results to Powertech. USACE evaluated 20 sites identified as wetlands within the project area and found that 4 were jurisdictional. The jurisdictional waters included Beaver Creek, an unnamed tributary to Beaver Creek, Pass Creek, and an unnamed tributary to Pass Creek.

Follow-up actions: None.

Meeting With U.S. Forest Service, Hot Springs, South Dakota

Participants included:

Lynn Kolund, District Ranger, Black Hills National Forest, USFS
Mike McNeill, Buffalo Gap National Forest, USFS

On December 3, 2009, NRC and CNWRA staff met with USFS staff to learn their perspective on potential environmental impacts of the proposed Dewey-Burdock ISR facility on USFS lands in the vicinity of the proposed project site. USFS manages the habitat and use of USFS lands. Although USFS has no permitting authority for the proposed action, it is interested in information on the project and its potential effects on the Black Hills National Forest and the Buffalo Gap National Grasslands, which are close to the proposed project area. USFS staff provided information on activities associated with the proposed project that would impact adjacent USFS land, habitat, and uses (e.g., road access, groundwater quantity and quality, habitat). For example, USFS manages down-gradient lands and is concerned about potential impacts of the proposed project on groundwater quality and quantity. USFS staff described possible mitigation measures for concerns related to access, wetlands, and habitat. USFS staff indicated that potential noise, land use, and scenic/visual impacts associated with the proposed project are of low concern. With respect to impacts on sage grouse, USFS staff indicated that they would provide NRC staff with a copy of a SDGFP study on regional sage grouse habitat. USFS staff indicated that they want to be actively involved in the review of the draft SEIS for the proposed Dewey-Burdock project. With respect to cumulative groundwater effects, USFS staff indicated that USFS-managed aquatic recreation areas, specifically Cascade Springs and Keith Park Springs, should be considered in the SEIS. In addition, USFS staff indicated that the SEIS should consider potential groundwater impacts of wells for a pipeline the Southern Black Hills Water Association proposed between Cascade and Hill City, South Dakota. The proposed wells and pipeline would support about 200 households. USFS staff thought the effects of groundwater pumping on Cascade Springs should be considered. USFS also indicated that there are potential cumulative effects of the project on Craven Canyon located northeast of the project area. Craven Canyon has cultural significance to Native Americans. Currently, there is an expansion of the withdrawal (i.e., exclusion) of mineral extraction activities in this area that includes uranium.

USFS indicated that they would send NRC staff a copy of its Black Hills Resource Management Plan. This document is an EIS that breaks down the Black Hills National Forest into geographic areas. USFS staff also provided NRC with a reference to its Land and Resource Management Plan for the Nebraska National Forests and Grasslands (USFS, 2009; see reference below). This document includes plans for resource management of the Buffalo Gap National Grasslands located in southwestern South Dakota. In addition, USFS staff provided NRC staff with information on oil and gas lease applications within and in the vicinity of the project area. USFS staff indicated that currently active oil and gas leases on USFS lands are limited and primarily located south of Edgemont, South Dakota.

Follow-up actions: NRC staff will contact USFS staff if further information is needed and will provide USFS staff with a copy of the draft SEIS for their review and comments.

Reference:

USFS (2009). Updated Land and Resource Management Plan for the Nebraska National Forests and Grasslands, Rocky Mountain Region. U.S. Department of Agriculture, U.S. Forest Service. http://fs.usda.gov/wps/portal/fsinternet!/ut/p/c4/04_SB8K8xLLM9MSSzPy8xBz9CP0os3qjAwhwtDDw9_Al8zPyhQoY6BdkOyoCAGixyPg!/?ss=110207&navtype=BROWSEBYSUBJECT&cid=FSM9_028050&navid=13000000000000&position=Feature*&ttype=detail&pname=Nebraska%20National%20Forests%20and%20Grasslands-%20Land%20&%20Resources%20Management>(09 December 2009).

Meeting With Powertech at the Proposed Dewey-Burdock ISR Facility Site

Participants included:

Mark Hollenbeck, Project Manager, Powertech
Frank Lichnovsky, Chief Geologist, Powertech
Len Eakin, Powertech
James Bashur, BLM, Newcastle Field Office

On December 3, 2009, NRC and CNWRA staff met with Powertech Inc. to learn more about Powertech's license application for the proposed Dewey-Burdock ISR facility. NRC and CNWRA staff sought clarification on many topics including waste management, water rights, land use, pump tests, Native American interactions, cultural resources, the integrity and continuity of subsurface confining layers, access restrictions, and the potential for contamination from old exploratory bore holes and open pit mines. Powertech indicated that it is focusing on NRC licensing before seeking state permits for the proposed project.

During the site visit, Powertech provided maps showing the proposed project area, well fields, and building site locations. Powertech noted that most of the land within the project boundaries is privately owned and that the project would not block any public land use access. Powertech noted that processing facilities, evaporation and holding ponds, well fields, and potential land application areas would be fenced to restrict access to livestock and wildlife. Powertech described the results of two aquifer pump tests conducted for site characterization. Powertech noted that the pump test conducted in the Burdock portion of the site (i.e., the eastern portion of the site) indicated that the Fusion Shale did not provide effective confinement of the ore-bearing aquifer at the location of the pump test. However, prior to ISR operations, Powertech has proposed to conduct detailed delineation drilling and additional pump tests as well fields are developed to better characterize the subsurface location of ore-bearing aquifers and ensure the integrity and continuity of confining units. Powertech staff noted that water rights have been negotiated with landowners within the project area. Powertech indicated that it has not yet applied for State permits for use of water from the Inyan Kara Group and the Madison Formation. Powertech staff described their proposed liquid waste management strategy, which may include a combination of evaporation ponds, radium settling, reverse osmosis, and then deep well injection and/or land application of treated waste water. With regard to potential groundwater contamination issues, Powertech indicated that prior onsite exploratory boreholes have been adequately plugged and that abandoned open pit mines in the eastern portion of the project area are hydrologically isolated from proposed production zone aquifers. Powertech

indicated that one or two cultural sites have been identified within the project area that may meet NHPA guidelines for preservation. These sites are not within areas where planned operational activities associated with the project will take place; they will be further evaluated. Powertech noted that in accordance with its MOU with the State archaeologist, avoidance will be the first line of defense to ensure the protection of cultural and historic resources encountered within the project area.

During a tour of the proposed site with Powertech staff, NRC and CNWRA staff noted that most of the operational area of the site is grassland that has a relatively flat topography. Two residences were noted to be located within the project area. NRC and CNWRA staff observed that dirt roads provided access to most areas within the site. Large overburden piles adjacent to abandoned open pit mines were observed in the eastern portion of the project site. The overburden piles showed extensive erosional features (i.e., channeling), and one of the pits, referred to as the Triangle Pit, was filled with a large volume of water.

Follow-up actions: NRC staff indicated that the topics described during the meeting will be reviewed in Powertech's license application documents and missing items will be included in requests for additional information (RAIs) to Powertech.

Meeting With Edgemont Area Chamber of Commerce, Edgemont, South Dakota

Participants included:

Bill Curran, President, Edgemont Area Chamber of Commerce, Edgemont, SD
Carole Boos, City Attorney and Economic Development Committee Member, Edgemont Area Chamber of Commerce, Dewey, SD
Heidi McBride, Economic Development Committee Member, Edgemont Area Chamber of Commerce, Edgemont, SD
Terri Hollenbeck, Economic Development Committee Member, Edgemont Area Chamber of Commerce, Edgemont, SD
Bev Gehman, President, Edgemont City Council, Edgemont, SD
Bill Hollenbeck, Resident, Edgemont, SD
Gloria Bennett, Senior Citizens Club, Edgemont, SD
Jim Turner, City of Edgemont, Edgemont, SD
Anne Cassens, Fall River County Commissioner, Edgemont, SD
Mike Ortner, Fall River County Commissioner, Hot Springs, SD
Curt Nettinga, Hot Springs Star, Hot Springs, SD

On December 3, 2009, NRC and CNWRA staff met with members of the Edgemont Area Chamber of Commerce and other interested parties from Edgemont and Fall River County to talk about Powertech's proposed Dewey-Burdock ISR facility and its effects on economic development, housing, and services in the Edgemont area. The town of Edgemont grew significantly during prior uranium mining in the 1960s and 1970s. During this time, the population of Edgemont was approximately 2,000. The population of Edgemont declined in the 1980s due to the loss of jobs associated with the decline of uranium mining in the area. The current population is approximately 900. Because Edgemont has had more residents in the past, land for development within Edgemont is available and the town can absorb the influx of new residents. However, investors are waiting for assurance that the project will go forward

before seeking financing for construction of local housing to support future housing demands. Members of the Edgemont Area Chamber of Commerce described current infrastructure projects that would support growth and economic development. These projects included the construction of a new firehouse (1 to 1.5 years to completion); an ongoing water meter project (75 percent complete), which will lead to funding for an upgrade of the town water system; and a recent expansion of the regional landfill, which serves Fall River and Custer Counties.

Discussions with town officials participating in the meeting indicated that the community is in favor of the project and that town and area services are adequate to absorb the influx of new workers and their families. Currently, the Edgemont school system has approximately 150 students (kindergarten through 12), but the school system is capable of accommodating twice this number without adding facilities. School funding in South Dakota is based on the number of students; therefore, any funding for more school staff would be offset by the increase in students. Currently, the Edgemont school system does not have a school bus system; however, the school district subsidizes (i.e., pays mileage) for the private/personal transportation of students to schools. Currently, Edgemont has a clinic which is open 2 or 3 days per week and has 24/7 ambulance service. Doctors practicing at the clinic come from Custer, South Dakota. Hot Springs, South Dakota, is building a new 25-bed hospital that is planned to open in March 2010.

Town officials noted that they are currently developing a new comprehensive city plan that will identify the needs of the community. Fall River and Custer Counties could receive significant severance tax revenues from the proposed project; property and sales tax have been estimated at \$1.5 million/year. Area organizations, such as the Landowners Association and Edgemont Area Community Foundation, have had discussions with Powertech about funding for civic and cultural improvements. Officials noted that Powertech currently helps with area road maintenance.

Follow-up actions: None.

Meeting With Custer County Planning and Economic Development, Custer, South Dakota

Participants included:

David Green, Planning Director, Custer County Planning and Economic Development (CCPED)

On December 3, 2009, NRC and CNWRA staff met with CCPED staff to learn about the county's perspectives on the proposed Dewey-Burdock ISR facility. CCPED staff noted that Custer County will be involved in permitting and land use planning for the proposed project because buildings will be constructed on the Dewey portion of the project area in Custer County. CCPED staff indicated that the main issue of focus for Custer County is potential socioeconomic impacts because the city of Custer is close to the site and a portion of the future project workforce is anticipated to come from Custer. The county planning and economic development indicated that Custer has available housing and available land to absorb the anticipated population increase from the proposed project. CCPED staff indicated that issues that should be evaluated are: 1) hospital capacity and emergency responder training in case of

a major accident at the proposed project site or, 2) a transportation accident involving yellowcake along roadways in Custer County. CCPED staff noted that only two doctors practice in the area and emergency responders are not trained for radiological and industrial incidents. CCPED staff noted that Pleasant Valley Road, which workers would use to commute to the proposed site, may need to be improved for safety. Washouts on this road are common. CCPED staff also indicated that water quantity and quality would be the most important local issues with respect to the proposed project; however, CCPED staff was not aware of any major developments near the site area other than the proposed Dewey Conveyor Project. CCPED provided NRC staff with a copy of the Custer County Comprehensive Plan and a website (www.headwaterseconomics.org) containing demographic data for Custer County.

Follow-up actions: None.

Summary:

The information gathering visit provided NRC and CNWRA staff with a better understanding of (i) proposed project area for the proposed ISR facility; (ii) issues to consider during the development of the SEIS; and (iii) State and county permitting processes and requirements.

APPENDIX A

List of documents provided to NRC and CNWRA staff during meeting with USGS staff in Rapid City, South Dakota on December 1, 2009.

Carter, J.M. (1999). Selected Data for Wells and Test Holes Used in Structure-Contour Maps of the Inyan Kara Group, Minnekahta Limestone, Minnelusa Formation, Madison Limestone, and Deadwood Formation in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS Open File Report 99-260.

Carter, J.M. and J.A. Redden. (1999). Altitude of the Top of the Inyan Kara Group in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigation Atlas HA-7444-A.

Carter, J.M. and J.A. Redden. (1999). Altitude of the Top of the Minnekahta Limestone in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigation Atlas HA-7444-B.

Carter, J.M. and J.A. Redden. (1999). Altitude of the Top of the Minnelusa Formation in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigation Atlas HA-7444-C.

Carter, J.M. and J.A. Redden. (1999). Altitude of the Top of the Madison Limestone in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigation Atlas HA-7444-D.

Carter, J.M. and J.A. Redden. (1999). Altitude of the Top of the Deadwood Formation in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigation Atlas HA-7444-E.

Driscoll, D.G., W.L. Bradford, and M.J. Moran. (1998). Selected Hydrologic Data, Through Water Year 1998. Black Hills Hydrology Study, South Dakota. U.S. Department of Interior, USGS Open File Report 00-70.

Driscoll, D.G., J.M. Carter, J.E. Williamson, and L.D. Putnam. (2002). Hydrology of the Black Hills Area, South Dakota. U.S. Department of Interior, USGS Water Resources Investigation Report 02-4094.

Galloway, J.M. (2000). Selected Hydrogeologic Data for the Inyan Kara, Minnekahta, Minnelusa, and Deadwood Aquifers in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS Open File Report 99-602.

Strobel, M.L., J.M. Galloway, G.R. Hamade, and G.J. Jarrell. (2000). Potentiometric Surface of the Inyan Kara Aquifer in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigations Atlas HA-745-A.

Strobel, M.L., J.M. Galloway, G.R. Hamade, and G.J. Jarrell. (2000). Potentiometric Surface of the Minnekahta Aquifer in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigations Atlas HA-745-B.

Strobel M.L., J.M. Galloway, G.R. Hamade, and G.J. Jarrell. (2000). Potentiometric Surface of the Minnelusa Aquifer in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigations Atlas HA-745-C.

Strobel M.L., J.M. Galloway, G.R. Hamade, and G.J. Jarrell. (2000). Potentiometric Surface of the Madison Aquifer in the Black Hills Area, South Dakota. U.S. Department of Interior, UAGA, Hydrologic Investigations Atlas HA-745-D.

Strobel, M.L., J.M. Galloway, G.R. Hamade, and G.J. Jarrell. (2000). Potentiometric Surface of the Deadwood Aquifer in the Black Hills Area, South Dakota. U.S. Department of Interior, USGS, Hydrologic Investigations Atlas HA-745-E.