POWERTECH (USA) INC.

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Vice President Environmental
Health and Safety Resources

April 20, 2010

Department of Environment and Natural Resources
PMB 2020
Joe Foss Building
523 East Capitol
Pierre, South Dakota 57501-3182

Attention: Brian Walsh, Hydrologist, Groundwater Quality Program

Re: 1) Class V Underground Injection Control (UIC) Permit Application to EPA; Dewey-Burdock Project; Fall River and Custer Counties, South Dakota
2) Land Application Monitoring Plan Summary for the Groundwater Discharge Plan Application

Dear Mr. Walsh:

This letter transmits, for your information and file, a digital copy of Powertech's Class V UIC application that was submitted to EPA on March 30, 2010. Also enclosed is a draft of the monitoring plan prepared for the Groundwater Discharge Plan, which will be submitted to your office soon for your review and approval.

Pursuant to your letter of February 23, 2010 regarding the South Dakota regulatory requirements for a Class V disposal well, the enclosed copy of Powertech's Class V UIC permit application is being provided as relevant information rather than an application for review and approval. The NRC's recent request for additional information (RAIs) includes questions that will be answered with information from the Class V UIC permit application, consequently a copy also will be provided soon to NRC and BLM as part of our response to the RAIs. Likewise, it will be provided to the DENR Minerals and Mining Program as a component of the large-scale ISL mine permit application that will be submitted in the near future.

Additionally, this letter transmits the enclosed draft Land Application Monitoring Plan Summary that will be incorporated into the Groundwater Discharge Plan (GWDP) application. We believe it is appropriate to provide this draft monitoring plan in advance of submitting the final application in order to give you and the DENR staff additional

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time to consider the details and to provide some meaningful feedback to Powertech in the event there are concerns that should be addressed in the final GWDP application.

We look forward to hearing from you at your earliest convenience, particularly if you have comments regarding the monitoring plan. Should there be any questions as you proceed with your review, please contact Mark Hollenbeck, Project Manager, or the undersigned at your convenience.

Respectfully yours,

Richard E. Blubaugh

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Dewey-Burdock Project
Land Application Monitoring Plan Summary
for the Groundwater Discharge Plan Application

Powertech has prepared a monitoring plan as part of the Groundwater Discharge Plan Application to the DENR under ARSD 74:54:02:06 and ARSD 74:29:05:14 through 74:29:05:20. Specifically, the monitoring plan has been prepared in accordance with ARSD 74:54:02:06 (9), ARSD 74:54:02:18 and ARSD 74:54:02:20, including operational, closure and post-closure monitoring programs and contingency planning.

To monitor potential impacts from land application operations at the Dewey and Burdock sites, Powertech (USA) will conduct sampling of (1) water flowing to the pivots for land application, (2) soils in the land application areas, (3) soil pore water in downgradient land application areas, (4) groundwater and surface water, and (5) observation of vegetative conditions. Table 1 summarizes the monitoring activities that will be conducted during land application operations including sample type, number of samples, location, sample method, frequency and type of analysis. Tables 1-1, 1-2, 1-3, and 1-4 provide the list of constituents for laboratory analysis. Figure 1 provides the proposed sample locations for soil pore water, groundwater, and surface water in relation to land application facilities.

According to ARSD 74:29:05:15, one grab sample should be collected for every 100,000 gallons of solution applied to the land. Powertech (USA) proposes to implement a combination of continuous monitoring and grab sampling of solution applied to the land at each site instead of grab sampling per every 100,000 gallons. Continuous monitoring will consist of the display of real-time data to operators monitoring changes in conductivity/salinity over time during active land application. If the conductivity or salinity increases more than approximately 30 percent during an 8-hour operational period, a grab sample will be taken from the center pivot pump station wet well for chemical analysis. During the time between detection and analysis, application will cease in those areas where salinity increases more than 30 percent until the cause of the increase is investigated and corrective action taken.

Powertech (USA) will conduct routine grab sampling consisting of one grab sample at each site during the 42-day period from March 29 through May 10, one sample at each site during the 36-day period from September 25 through October 31, and four samples at each site during the 136-day period from May 11 through September 24 during each irrigation season. This frequency equates to one sample for each 57,000 gallons per acre of applied water from March 29 to May 10, one sample for each 101,500 gallons per acre of applied water from May 11 to September 24, and one sample for each 48,900 gallons per acre of applied water from September 25 to October 31. In summary, six samples per irrigation season would be collected at each of the Dewey and Burdock sites for a total of 12 samples per year if land application were occurring at both sites.

Table 1: Land Application Monitoring Program Summary

	Sample Type	Number	Location	Sampling Method	Frequency	Type of Analysis
Operational Monitoring	Water to Pivots[1]	12[2]	Dewey and Burdock wet well pump stations	Grab sample at every 100,000 gallons/acre	6 per discharge site/irrigation season[3]	Constituents in Tables 1-1 and 1-2
	Conductivity/Salinity	N/A	Dewey and Burdock wet well pump stations	Field probe/data logger	Continuous	N/A – field probe
	Land Application Soil Sampling	up to 21[4]	One composite surface sample from each active irrigation pivot area	Grab – standard soil auger	Yearly	Constituents in Table 1-3
	Pore Water (lysimeter)	up to 24[4]	Lysimeters located downgradient at each of the 21 irrigation pivot areas	Suction lysimeter	Yearly	Constituents in Tables 1-1 and 1-2
	Conductivity/Salinity/ Temperature	up to 24[4]	Probes co-located with lysimeter locations downgradient at each of the 21 irrigation pivot areas	Field probe/data logger	Continuous	N/A – field probe
	Soil Moisture	up to 24[4]	Probes co-located with lysimeter locations downgradient at each of the 21 irrigation pivot areas	Time domain reflectometry instrumentation	Continuous	N/A – field probe
	Groundwater	31	Baseline groundwater monitoring locations	Grab	Monthly for Year 1, then quarterly	Constituents in Table 1-2
	Surface Water	19	Baseline surface water impoundment/stream sampling locations	Grab/passive	Quarterly	Constituents in Table 1-2
	Vegetation	N/A	Land application sites	Observation	Bi-weekly	Visual
Closure Monitoring	Soil	210	At each of the 21 irrigation pivot areas	10 random core samples at 0-15 cm; composited	Once	Constituents in Table 1-4
	Radiological – Gamma Surveys	21	Footprint of each of the 21 irrigation pivot areas	Survey	Once	Ludlum 2221 rate-meter/scaler and Model 44-10 detector
	Groundwater	31	Baseline groundwater monitoring locations	Grab	Quarterly	Constituents in Table 1-2
	Surface Water	19	Baseline surface water impoundment/stream sampling locations	Grab/passive	Quarterly	Constituents in Table 1-2
Post-Closure Monitoring	Groundwater	31	Baseline groundwater monitoring locations	Grab	Yearly	Constituents in Table 1-2
	Surface Water	19	Baseline surface water impoundment/stream sampling locations	Grab/passive	Yearly	Constituents in Table 1-2
	Revegetation	N/A	Land application sites	Observation	Once, following closure	Visual

[1] Operational Contingency: if >30% increase in conductivity observed per 8-hour period, cease operations, sample, and analyze for constituents in Table 1.
[2] Powertech (USA) proposes a combination of grab sampling at every 100,000 gallons applied per acre plus continuous conductivity/salinity monitoring in place of grab sampling at every 100,000 gallons of solution applied (ARSD 74:29:05:15).
[3] Irrigation season lasts from March 29 to October 31.
[4] Active pivots only.

Note: Sampling and analysis plan based on Handbook for Investigations and Corrective Action Requirements for Discharges from Storage Tanks, Piping Systems and other Releases: Appendix C, Standard Operating Procedures Nos. 4, 6, 7 and 8 in accordance with ARSD 74:54:02:06.

Table 1-1: USNRC Radiological Parameters for Land Applied Water

Analyte	Regulatory Limit[1]	Laboratory Reporting Limit	Units	Analytical Method	Method References	Holding Time, days
Radium 226	60	0.2	pCi/L	E903.0	PPMRDW[2]	180
Uranium (U-nat)	300	0.2	pCi/L	E908.0	PPMRDW[2]	180
Thorium 230	100	0.2	pCi/L	E907.0	PPMRDW[2]	180
Lead 210	10	1.0	pCi/L	E905.0	PPMRDW[2]	180

[1] From 10 CFR Part 20, Appendix B.
[2] "Prescribed Procedures for the Measurement of Radioactivity in Drinking Water", EPA 600/4–80–032, August 1980. National Technical Information Service, (800–553–6847).

Table 1-2: Operational Monitoring Parameters for Water

Analyte	Regulatory Limit[1]	Laboratory Reporting Limit	Units	Analytical Method	Method References	Holding Time, days
Chloride[2]	250	1	mg/L	300	MCAWW[3]	28
Fluoride	4	0.1	mg/L	300	MCAWW[3]	28
Nitrate as N	10	0.1	mg/L	300	MCAWW[3]	28
Nitrite as N	1	0.1	mg/L	300	MCAWW[3]	28
Sulfate	500	3	mg/L	300	MCAWW[3]	28
Arsenic	0.01	0.001	mg/L	200.8	MDMES[4]	180
Barium	2	0.1	mg/L	200.8	MDMES[4]	180
Cadmium	0.005	0.005	mg/L	200.8	MDMES[4]	180
Chromium	0.1	0.05	mg/L	200.8	MDMES[4]	180
Copper	1	0.01	mg/L	200.8	MDMES[4]	180
Lead	0.015	0.001	mg/L	200.8	MDMES[4]	180
Mercury	0.002	0.001	mg/L	245.1	MCAWW[3]	28
Silver	0.1	0.005	mg/L	200.8	MDMES[4]	180
Uranium	0.03	0.0003	mg/L	200.8	MDMES[4]	180
Selenium,	0.05	0.001	mg/L	3114 B	Standard Methods[5]	180
Conductivity @ 25 C[2]	N/A	5	µmhos/cm	2510 B	Standard Methods[5]	28
pH	N/A	0.1	s.u.	4500-H B	Standard Methods[5]	7
Solids, Total Dissolved (TDS) @ 180 C	N/A	5	mg/L	2540 C	Standard Methods[5]	7
Radium 226	5[7]	0.2	pCi/L	E903.0	PPMRDW[6]	180
Gross Alpha	15[7]	1	pCi/L	E900.0	PPMRDW[6]	180

[1] Groundwater quality standards from Tables 1 and 2 in ARSD 74:54:01:04.
[2] Monitored continuously and used as an indicator parameter.
[3] MCAWW – "Methods for Chemical Analysis of Water and Wastes," (EPA 600/4-79-020), 1979.
[4] MDMES – "Methods for the Determination of Metals in Environmental Samples, Supplement 1," (EPA/600/R-94/111) – Rev 5.4, 1994.
[5] Standard Methods for the Examination of Water and Wastewater (18th, 19th, 20th editions).
[6] "Prescribed Procedures for the Measurement of Radioactivity in Drinking Water," EPA 600/4–80–032, August 1980. National Technical Information Service, (800–553–6847).
[7] EPA MCL for Radionuclides in Drinking Water.

Table 1-3: Operational Monitoring Parameters for Soil

Analyte	Reporting Limit	Units	Analytical Method
Conductivity, paste extract	0.01	µmhos/cm	ASAM10-3
pH, sat. paste 6.9	0.1	s.u.	ASAM10-3.2
Chloride, soluble	1	mg/kg-dry	E300.0
Chloride	10	mg/kg-dry	E300.0
Sulfate	10	mg/kg-dry	E300.0
Arsenic	0.6	mg/kg-dry	SW6020
Barium	0.6	mg/kg-dry	SW6020
Cadmium	0.6	mg/kg-dry	SW6021
Chromium	0.6	mg/kg-dry	SW6022
Lead	0.6	mg/kg-dry	SW6023
Mercury	1	mg/kg-dry	SW7473
Selenium	0.6	mg/kg-dry	SW6025
Silver	0.6	mg/kg-dry	SW6026
Vanadium	0.6	mg/kg-dry	SW6027
Nitrate as N, KCl extract	1	mg/kg-dry	ASA33-8
Uranium	0.5	mg/kg-dry	SW6020
Radium 226	0.1	pCi/g-dry	E901.1

Table 1-4: EPA Region 9 Soil Screening Levels

Metal	Soil Screening Level (mg/kg)
Arsenic	0.39 ca[(1)]
Barium	15,000
Cadmium	70
Chromium	280
Lead	400
Selenium	390
Vanadium	390

[(1)] ca = cancer endpoint

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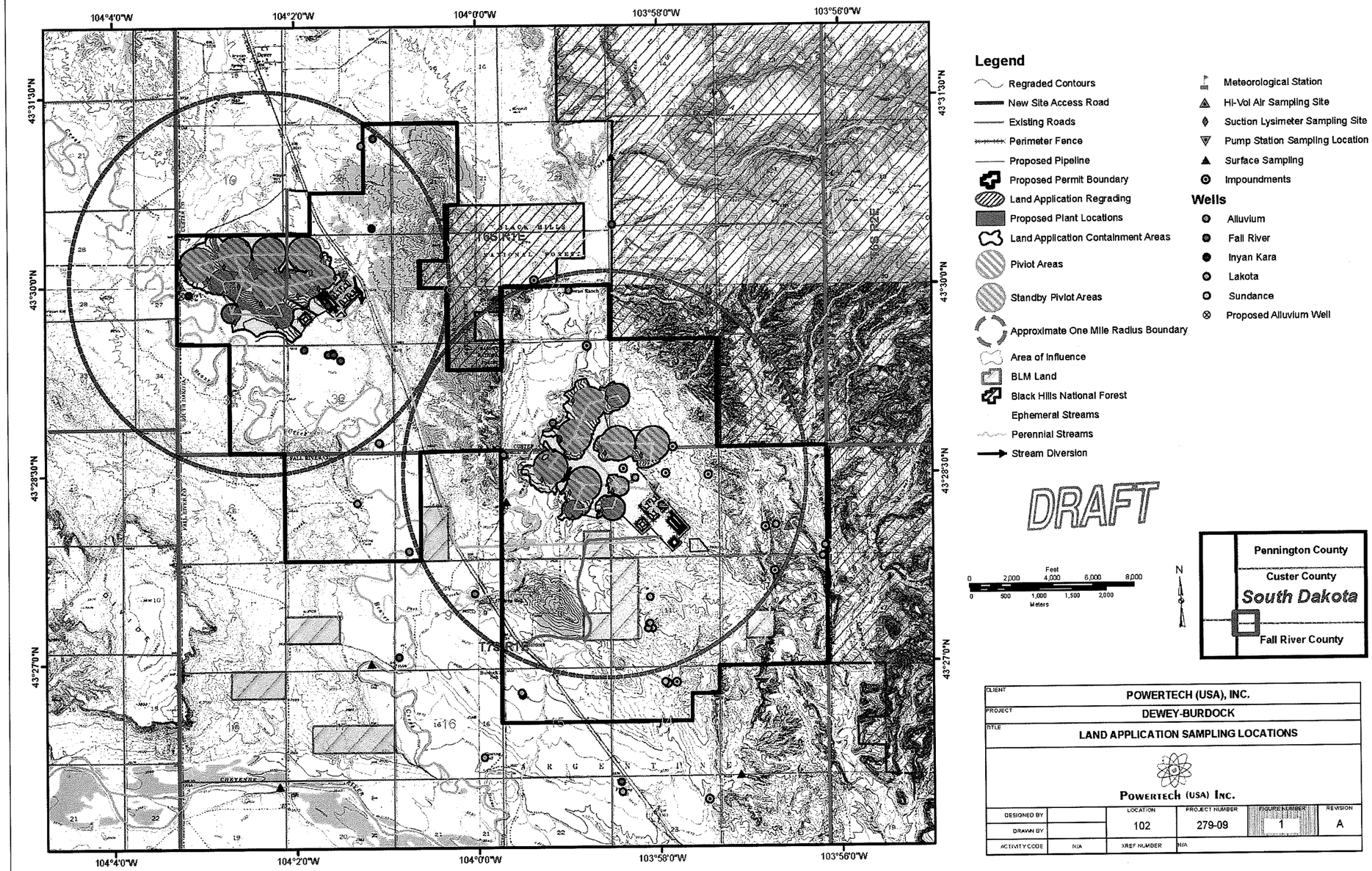

CLIENT	POWERTECH (USA), INC.
PROJECT	DEWEY-BURDOCK
TITLE	LAND APPLICATION SAMPLING LOCATIONS

POWERTECH (USA) INC.

DESIGNED BY		LOCATION	PROJECT NUMBER	FIGURE NUMBER	REVISION
DRAWN BY		102	279-09	1	A
ACTIVITY CODE	N/A	XREF NUMBER	N/A		

Figure 1: Land Application Sampling Locations