




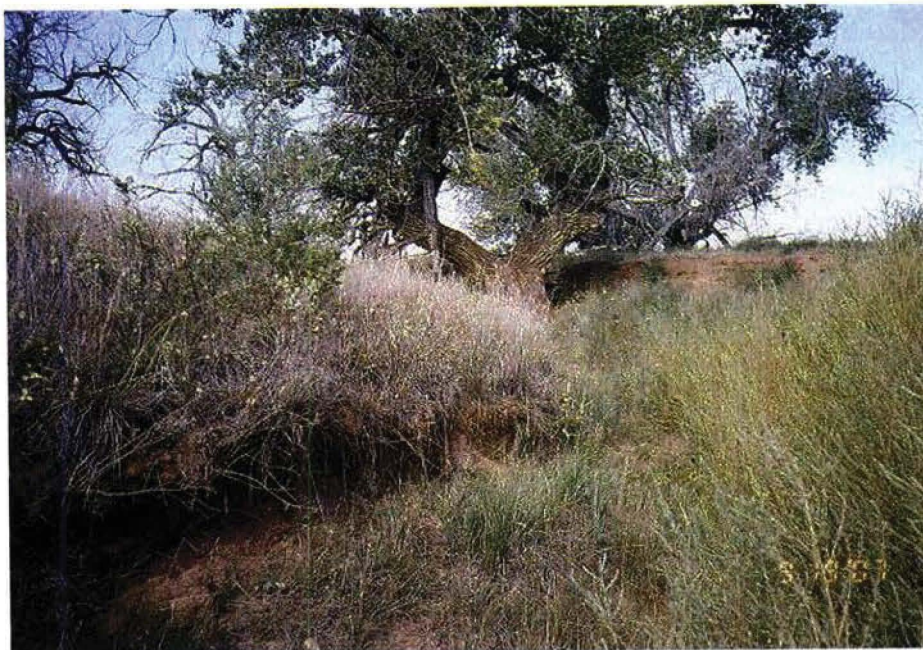
POWERTECH (USA) INC.

United States Nuclear Regulatory Commission Official Hearing Exhibit	
POWERTECH USA, INC.	
In the Matter of: (Dewey-Burdock In Situ Uranium Recovery Facility)	
	ASLBP #: 10-898-02-MLA-BD01
	Docket #: 04009075
	Exhibit #: APP-040-BB-00-BD01
	Admitted: 8/19/2014
	Rejected:
Other:	Identified: 8/19/2014
	Withdrawn:
	Stricken:

APP-040-BB



W28, R4 P13: Upstream, non-wetland



W28, R4 P14: Downstream, non-wetland



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W29, R4 P17: Upstream, non-wetland



W29, R4 P18: Downstream, non-wetland



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W30, R4 P19: East, non-wetland



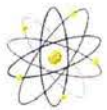
W30, R4 P20: West, non-wetland



W31, R4 P21: Northeast, wetland



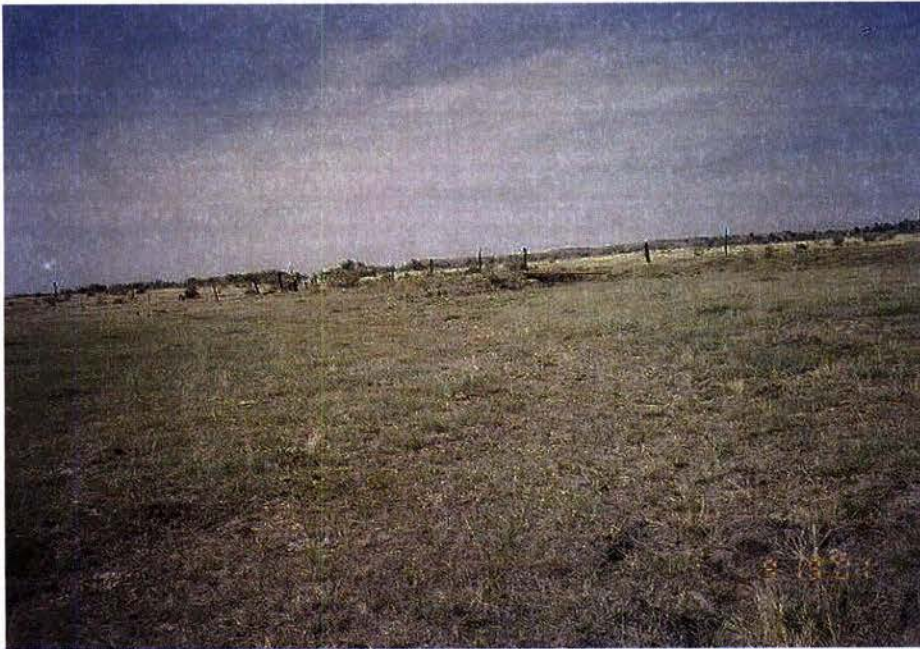
W31, R4 P22: East-southeast, wetland



W32, R4 P24: Previously mapped PEM wetland, wetland



W32, R4 P25: from the berm, wetland



W33, R5 P1: Upstream, wetland



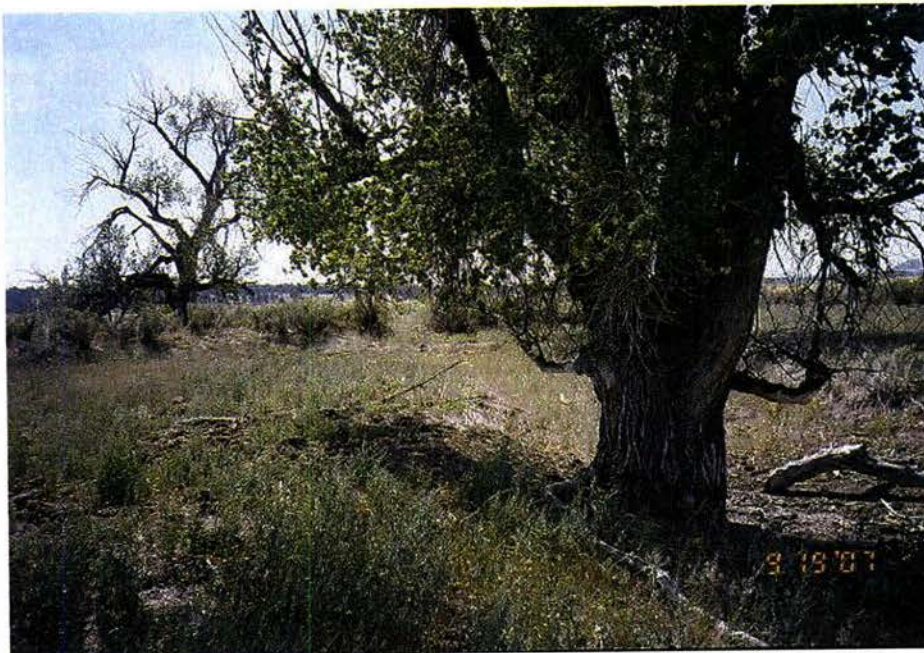
W33, R5 P2: Downstream, wetland



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Wpt. 56, R5 P3: Depression, non-wetland



Wpt. 56, R5 P4: Depression, non-wetland



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Wpt. 57, R5 P5: Depression, non-wetland



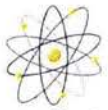
Wpt. 58, R5 P8: Surface water ends



W34, R5 P9: Upstream, non-wetland



W34, R5 P10: Downstream, non-wetland



W35, R5 P11: Facing East, wetland



W35, R5 P12: Facing south, wetland



Wpt. 60 and 61, R5 P13: Depression, non-wetland



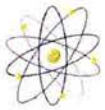
Wpt. 60 and 61, R5 P14: Depression, non-wetland



Wpt. 60 and 61, R5 P15: Depression w/ salt crusts, non-wetland



Wpt. 62, R5 P16: Depression, non-wetland



Wpt. 62, R5 P17: Depression, non-wetland



Wpt. 68, R5 P18: Upstream



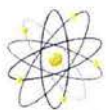
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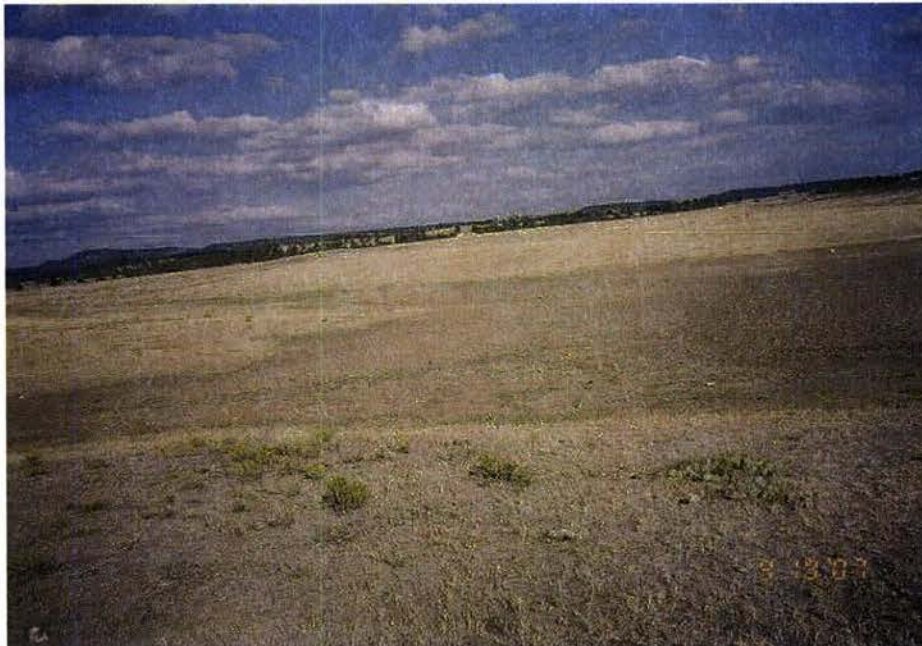
Wpt. 68, R5 P19: Downstream



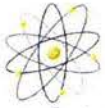
W36, R5 P20: Downstream, wetland



W36, R5 P21: Upstream to stock tank, wetland



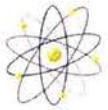
Wpt. 74, R6 P1: Depression, non-wetland



Wpt. 74, R6 P2: Depression, non-wetland



Wpt. 78, R6 P5: Depression, non-wetland



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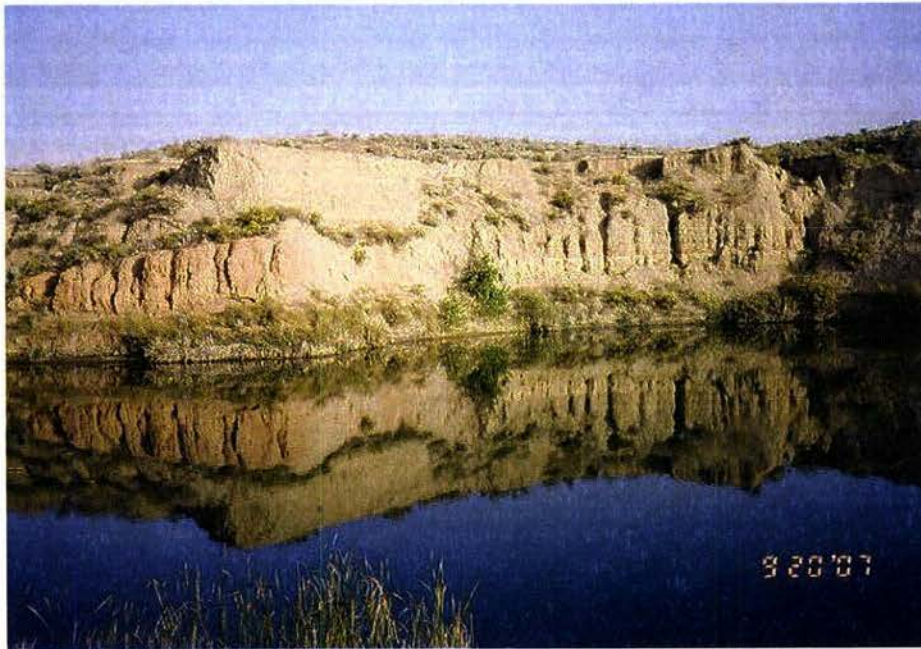
W37, R6 P6: Panoramic east to west of old mine pit, non-wetland



W37, R6 P7: Panoramic east to west of old mine pit, non-wetland



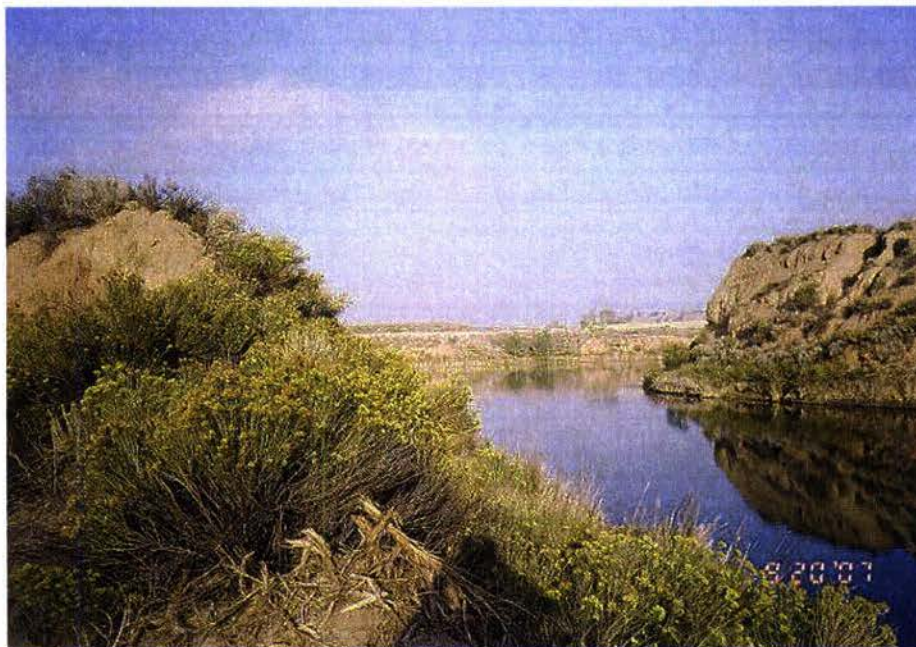
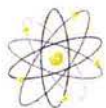
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W37, R6 P8: Panoramic east to west of old mine pit, non-wetland



W37, R6 P9: Panoramic east to west of old mine pit, non-wetland



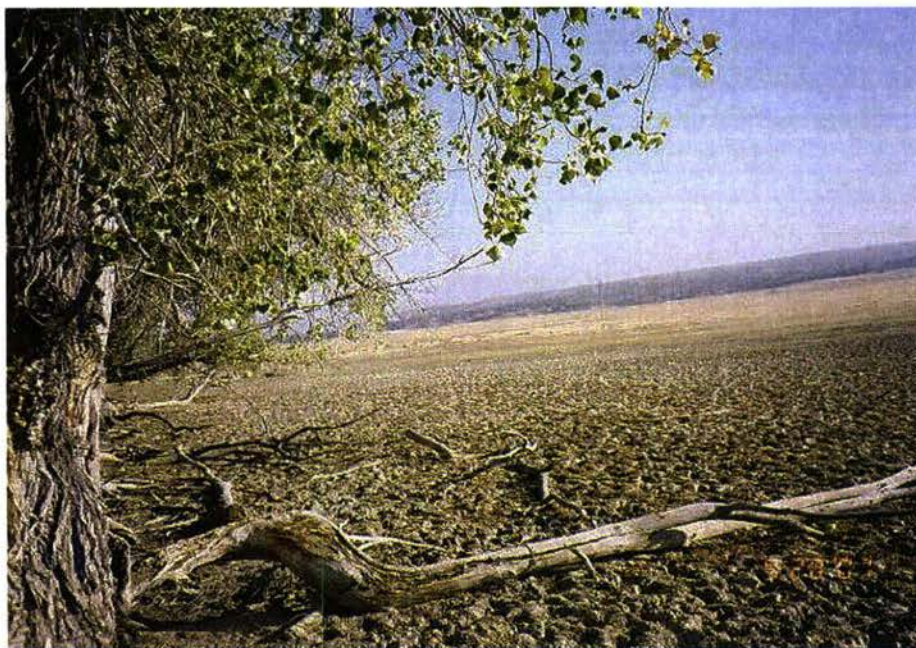
W37, R6 P10: Panoramic east to west of old mine pit, non-wetland



W38, R6 P13: East, wetland



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W38, R6 P14: West, wetland



Wpt. 83, R6 P15: *Hordeum jubatum* depression, wetland



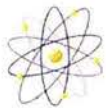
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W39, R6 P16: Depression, wetland



W39, R6 P17: Drainage to the East, wetland



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W40, R6 P18: Pond, wetland



W41, R6 P19: Wetland



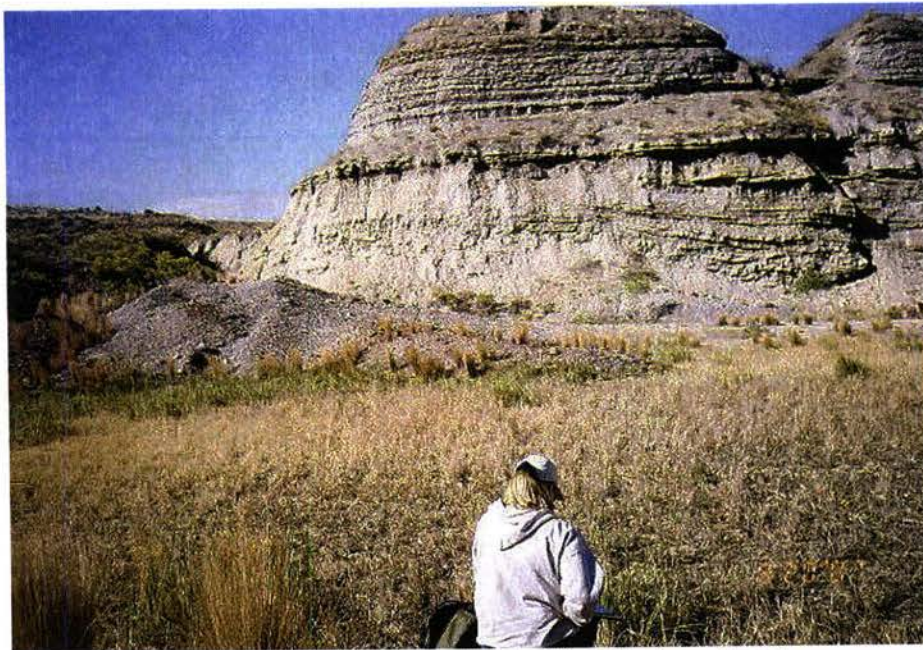
W41, R6 P20: General area, wetland



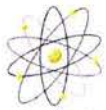
W42, R6 P22: Panoramic East to West, wetland



W42, R6 P23: Panoramic East to West, wetland



W42, R6 P24: Panoramic East to West, wetland



Wpt. 88 and 89, R7 P1: Mine Pit, non-wetland



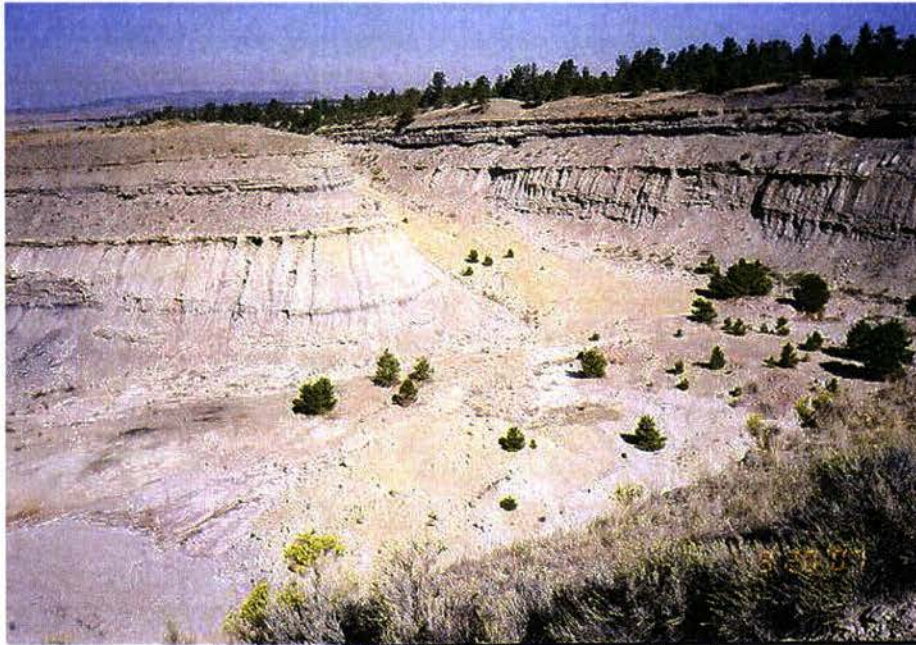
Wpt. 88 and 89, R7 P2: Mine Pit, non-wetland



Wpt. 92, R7 P5: Mine Pit, non-wetland



Wpt. 92, R7 P6: Mine Pit, non-wetland



Wpt. 92, R7 P7: Mine Pit, non-wetland



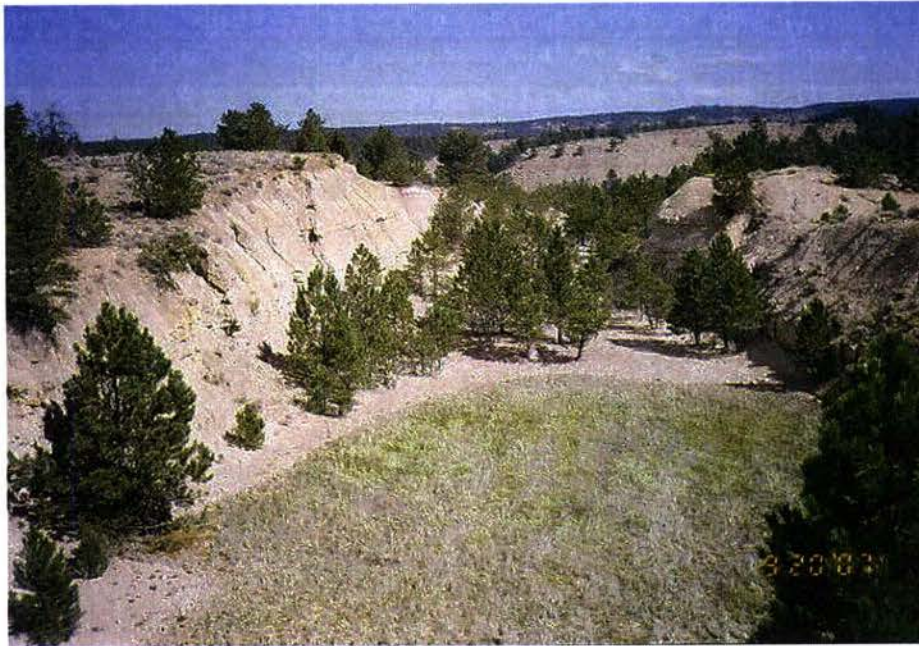
Wpt. 94, R7 P9: Mine Pit, non-wetland



Wpt. 97, R7 P14: Depression, non-wetland



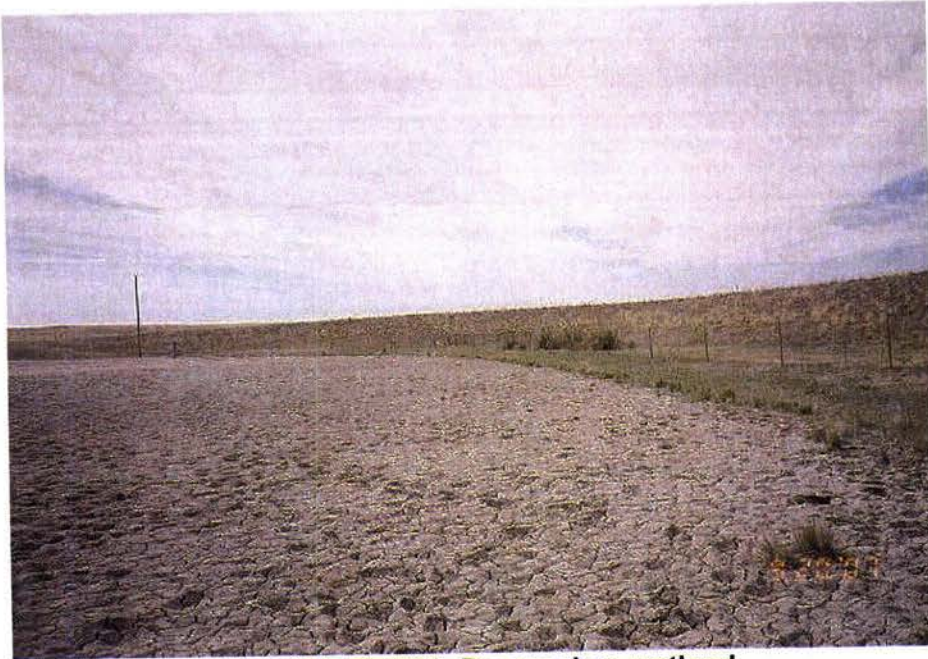
Wpt. 102, R7 P18: Depression, wetland



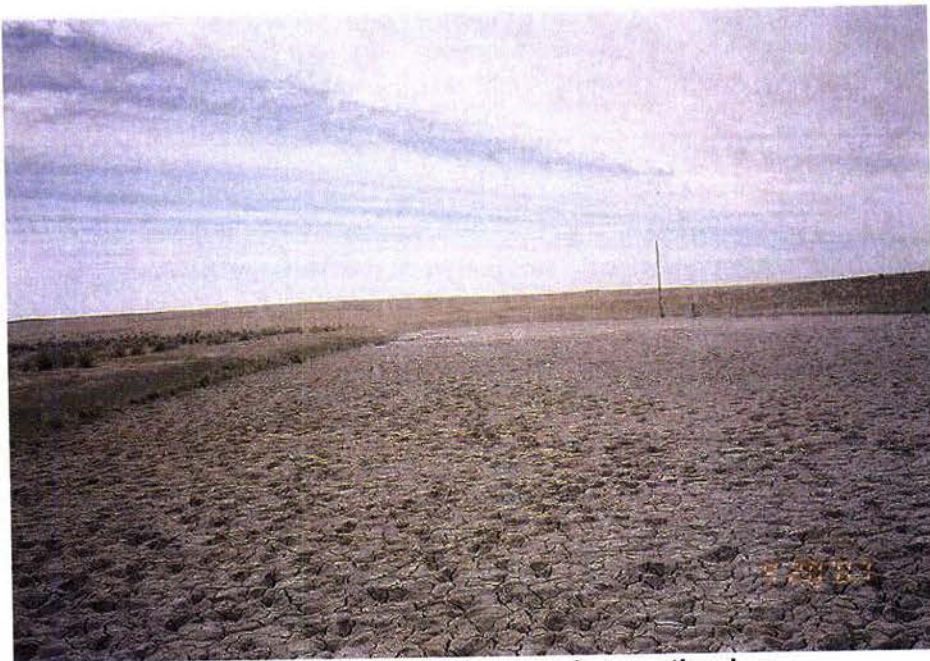
Wpt. 102, R7 P19: Depression, wetland



Wpt. 103, R7 P20: Mine Pit, wetland



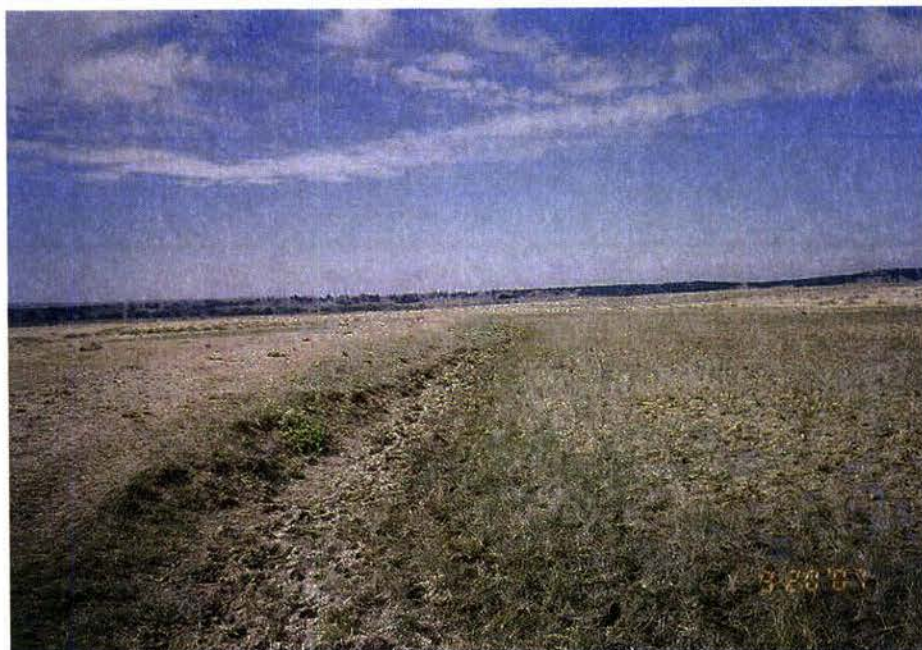
Wpt. 104, R7 P21: Depression, wetland



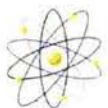
Wpt. 104, R7 P22: Depression, wetland



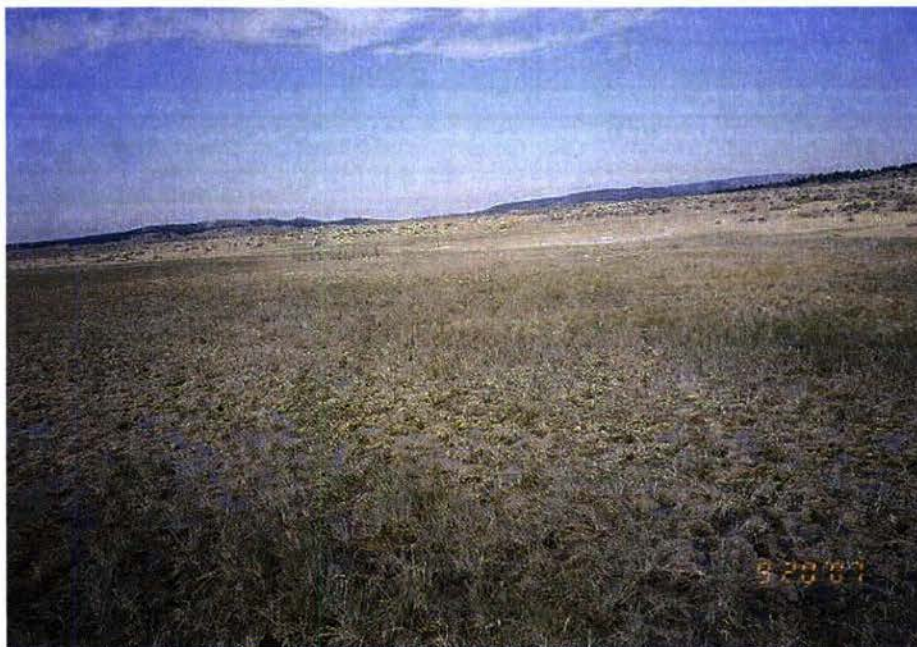
Wpt. 104, R7 P23: Depression, wetland



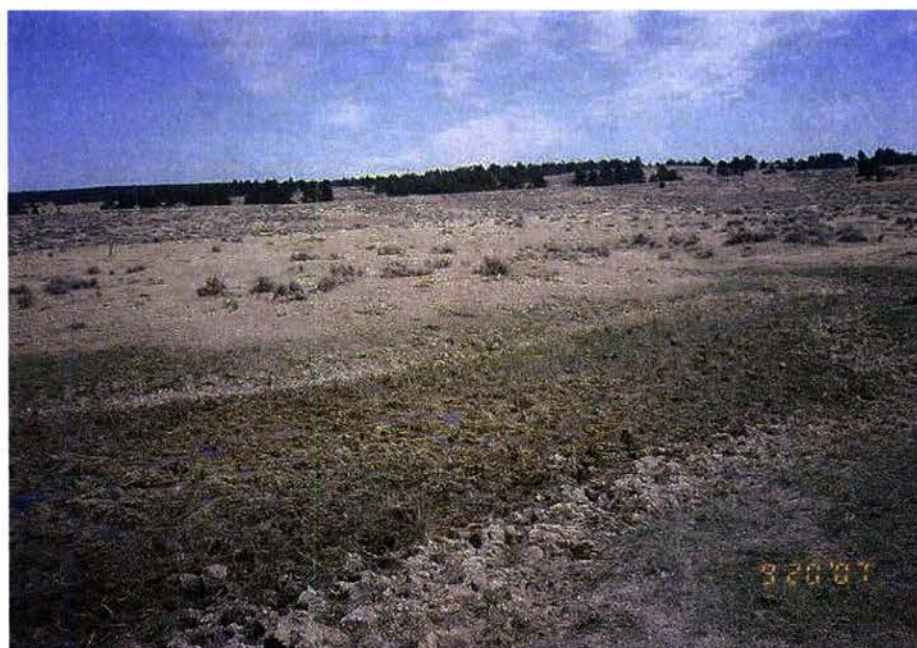
W44, R7 P24: Northwest, wetland



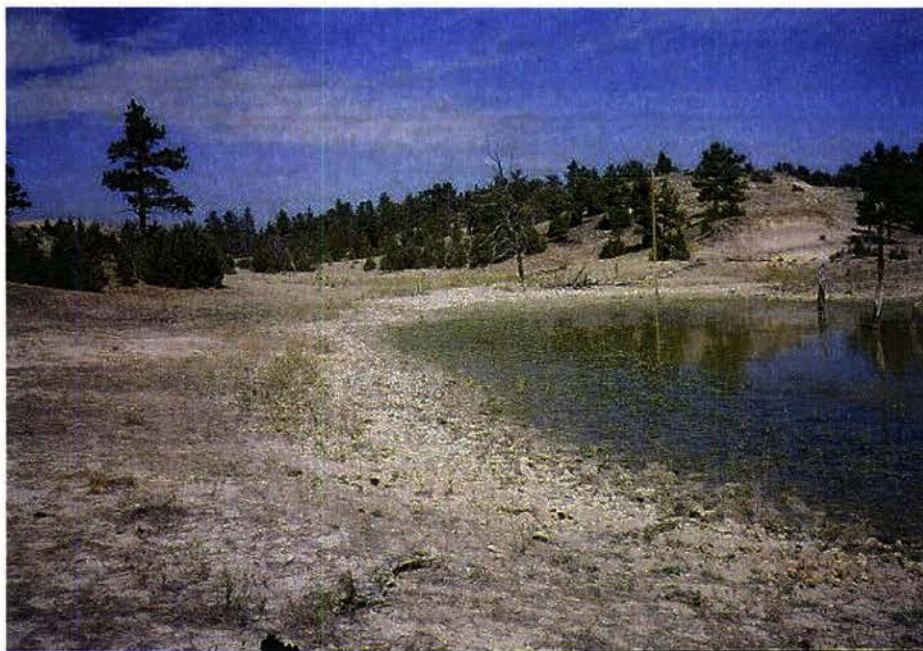
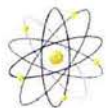
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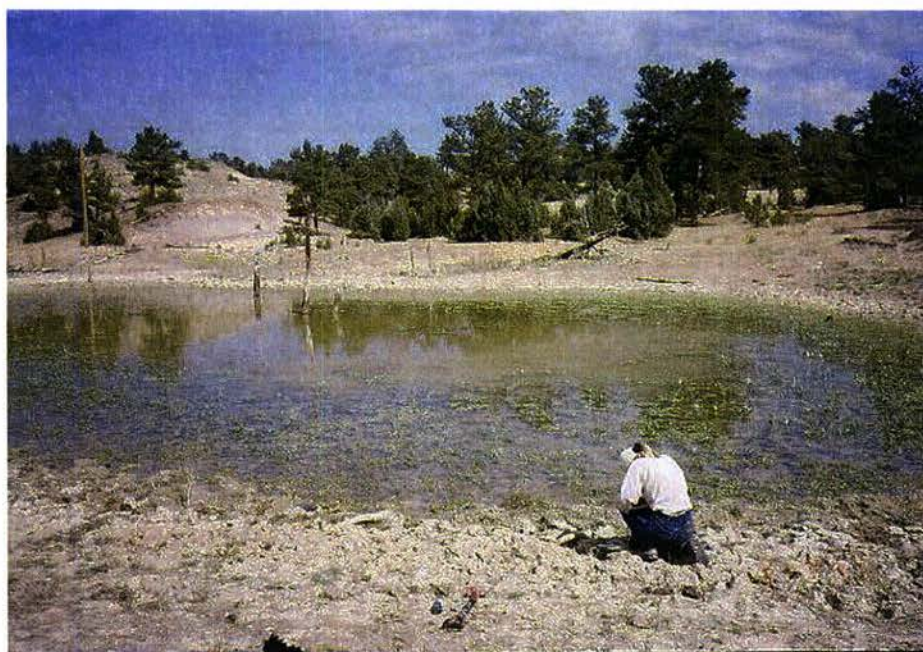
W44, R8 P1: North, wetland



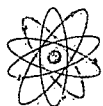
W44, R8 P2: East, wetland



W45, R8 P4: Upstream, wetland



W45, R8 P5: Downstream, wetland



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APPENDIX 3.5-G

WETLAND DETERMINATION DATA FORMS- GREAT PLAINS REGION (DRAFT)



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W1
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.) Depression into tributary Local relief (concave, convex, none): Convex Slope (%): 0%
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: PEMC
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____	Is the Sampled Area Within a Wetland	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____					
Wetland Hydrology Present	Yes		No	<u>X</u>					
Remarks: R1 P1 - Depression ~10' x 15'									

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____				Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____				Percent of Dominant Species That are OBL, FACW, or FAC: <u>50</u> (A/B)	
4. _____					
Total Cover: _____					
Sapling/Shrub Stratum				Prevalence Index Worksheet:	
1. <u>Rosa woodsii</u>	<u>100</u>	<u>X</u>	<u>FACU</u>	Total % Cover of: _____ Multiply by: _____	
2. _____				OBL species <u>75</u> x1= <u>75</u>	
3. _____				FACW species <u>15</u> x2= <u>30</u>	
4. _____				FAC species _____ x3= _____	
5. _____				FACU species <u>110</u> x4= <u>440</u>	
Total Cover: <u>100</u>				UPL species _____ x5= _____	
				Column Totals: <u>200</u> (A) <u>545</u> (B)	
				Prevalence Index = B/A = <u>2.75</u>	
Herb Stratum				Hydrophytic Vegetation Indicators	
1. <u>Hordeum jubatum</u>	<u>15</u>		<u>FACW</u>	Dominance Test is > 50%	
2. <u>Elymus smithii</u>	<u>5</u>		<u>FACU</u>	<u>X</u> Prevalence Index is ≤ 3.0 ¹	
3. <u>Polygonum aviculare</u>	<u>5</u>		<u>FACU</u>	Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet)	
4. <u>Eleocharis palustris</u>	<u>75</u>	<u>X</u>	<u>OBL</u>	Problematic Hydrophytic Vegetation (Explain)	
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
Total Cover: <u>100</u>					
Woody Vine Stratum				¹ Indicators of hydric soils and wetland hydrology must be present	
1. _____				Hydrophytic Vegetation Present?	
2. _____				Yes <u>X</u> No _____	
3. _____					
Total Cover: _____					
% Bare Ground in Herb Stratum		% Cover of Biotic Crust			
Remarks:					

**POWERTECH (USA) INC.**

SOIL

Sampling Point W1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-8	2.5Y 3/1	90	10YR 4/8	10	C	RC	SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)

☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☒ Redox Depressions (F8)
☐ High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16)
(LRR H outside MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water Stained Leaves (B9)

☐ Salt Crusts (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Oder (C1)
☐ Dry-Season Water Table (C2)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remark)

Secondary Indicators (2 or more required)

☐ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surfaces (B8)
☐ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Frost-Heave Hummocks (C11) (LRR F)
☐ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)
☐ Local Soil Survey Data (D8)

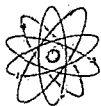
Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W2
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%): 3
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: R2EM
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: Isolated wetland		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																								
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____	Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ <table border="0"> <tr> <td>OBL species</td> <td><u>0</u></td> <td>x1=</td> <td><u>0</u></td> </tr> <tr> <td>FACW species</td> <td><u>70</u></td> <td>x2=</td> <td><u>140</u></td> </tr> <tr> <td>FAC species</td> <td><u>2</u></td> <td>x3=</td> <td><u>6</u></td> </tr> <tr> <td>FACU species</td> <td><u>28</u></td> <td>x4=</td> <td><u>112</u></td> </tr> <tr> <td>UPL species</td> <td><u>0</u></td> <td>x5=</td> <td><u>0</u></td> </tr> <tr> <td>Column Totals:</td> <td><u>100</u></td> <td>(A)</td> <td><u>258</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.58</u>	OBL species	<u>0</u>	x1=	<u>0</u>	FACW species	<u>70</u>	x2=	<u>140</u>	FAC species	<u>2</u>	x3=	<u>6</u>	FACU species	<u>28</u>	x4=	<u>112</u>	UPL species	<u>0</u>	x5=	<u>0</u>	Column Totals:	<u>100</u>	(A)	<u>258</u> (B)
OBL species	<u>0</u>	x1=	<u>0</u>																									
FACW species	<u>70</u>	x2=	<u>140</u>																									
FAC species	<u>2</u>	x3=	<u>6</u>																									
FACU species	<u>28</u>	x4=	<u>112</u>																									
UPL species	<u>0</u>	x5=	<u>0</u>																									
Column Totals:	<u>100</u>	(A)	<u>258</u> (B)																									
Total Cover: _____																												
Sapling/Shrub Stratum																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
Total Cover: _____																												
Herb Stratum																												
1. <u>Hordeum jubatum</u>	<u>10</u>	_____	<u>FACW</u>																									
2. <u>Elymus smithii</u>	<u>15</u>	_____	<u>FACU</u>																									
3. <u>Spartina pectinata</u>	<u>60</u>	<u>X</u>	<u>FACW</u>																									
4. <u>Bromus japonicus</u>	<u>5</u>	_____	<u>FACU</u>																									
5. <u>Xanthium strumarium</u>	<u>2</u>	_____	<u>FAC</u>																									
6. <u>Poa pratensis</u>	<u>3</u>	_____	<u>FACU</u>																									
7. <u>Melilotus officinalis</u>	<u>5</u>	_____	<u>FACU</u>																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
Total Cover: <u>100</u>																												
Woody Vine Stratum																												
1. _____	_____	_____	_____																									
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
Total Cover: _____																												
% Bare Ground in Herb Stratum	<u>10</u>	% Cover of Biotic Crust																										

Remarks: _____

**POWERTECH (USA) INC.****SOIL**

Sampling Point W2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/1	95	7.5YR 3/3	5	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes ☒ No ☐ Depth (inches): 5
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Soil is moist but not saturated. A definable channel is present.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W3
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%): 0
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R1 P 12: Upstream R1 P13: Downstream		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Total Cover: _____				
Sapling/Shrub Stratum 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____				
Herb Stratum 1. <u>Elymus smithii</u> 40 <u>X</u> <u>FACU</u> 2. <u>Xanthium strumarium</u> 1 _____ <u>FAC</u> 3. <u>Bromus japonicus</u> 20 <u>X</u> <u>FACU</u> 4. <u>Polygonum aviculare</u> 5 _____ <u>FACU</u> 5. <u>Lepidium densiflorum</u> 15 _____ <u>FACU</u> 6. <u>Poa pratensis</u> 6 _____ <u>FACU</u> 7. <u>Melilotus officinalis</u> 10 _____ <u>FACU</u> 8. <u>Symphoricarpos sp.</u> 3 _____ <u>NI</u> 9. _____ 10. _____ Total Cover: <u>100</u>				
Woody Vine Stratum 1. _____ 2. _____ 3. _____ Total Cover: _____				Hydrophytic Vegetation Indicators _____ Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
% Bare Ground in Herb Stratum <u>50</u> % Cover of Biotic Crust _____ Remarks: _____				
Hydrophytic Vegetation Present? Yes _____ No <u>X</u>				

**POWERTECH (USA) INC.****SOIL**

Sampling Point W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 3/1	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)

☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16)
☐ (LRR H outside MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes _____ No X**Remarks:****HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

☒ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water Stained Leaves (B9)

☐ Salt Crusts (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Oder (C1)
☐ Dry-Season Water Table (C2)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remark)

Secondary Indicators (2 or more required)

☒ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surfaces (B8)
☒ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Frost-Heave Hummocks (C11) (LRR F)
☒ Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)
☐ Local Soil Survey Data (D8)

Field Observations:

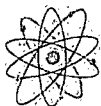
Surface Water Present? Yes X No _____ Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Definable channel is present.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W4
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%): 3
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: R2EM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R2 P2: Upstream R2 P3: Downstream R2 P4: Tributary Channel width is approximately 17 feet R2 P6: Upstream at waypoint 3 R2 P7: Downstream at waypoint 3 R2 P8 Upstream at waypoint 4 R2 P9: Downstream at waypoint 4				

VEGETATION

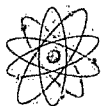
Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Herb Stratum			
1. <u>Spartina pectinata</u>	<u>35</u>	<u>X</u>	<u>FACW</u>
2. <u>Cirsium arvense</u>	<u>10</u>	_____	<u>FACU</u>
3. <u>Schoenoplectus pungens</u>	<u>20</u>	<u>X</u>	<u>OBL</u>
4. <u>Eleocharis palustris</u>	<u>35</u>	<u>X</u>	<u>OBL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>	_____	_____	_____
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
% Bare Ground in Herb Stratum		% Cover of Biotic Crust	
Remarks: _____			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain) _____
¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____

**POWERTECH (USA) INC.****SOIL**

Sampling Point W4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	Gley1 2.5/N	100					SCL	
2-10	Gley1 3/N	100					SCL	
10-14	Gley1 4/5GY	95	7.5YR 4/6	5			SC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input checked="" type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input checked="" type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input checked="" type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐**Remarks:**

Faint hydrogen sulfide odor was present.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input checked="" type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	2
Saturation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	2
(includes capillary fringe)			

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) Inc.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

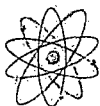
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W5
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.): Uplands Local relief (concave, convex, none): None Slope (%): 2
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R1 P5: Upland area near Beaver Creek		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species <u>25</u> x3= <u>75</u> FACU species <u>75</u> x4= <u>300</u> UPL species _____ x5= _____ Column Totals: <u>100</u> (A) <u>375</u> (B) Prevalence Index = B/A = <u>3.75</u>
Total Cover: _____	_____	_____	_____	
Sapling/Shrub Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators _____ Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Total Cover: _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Herb Stratum				
1. <u>Poa pratensis</u>	<u>45</u>	<u>X</u>	<u>FACU</u>	
2. <u>Cirsium arvense</u>	<u>15</u>		<u>FACU</u>	
3. <u>Chenopodium album</u>	<u>25</u>	<u>X</u>	<u>FAC</u>	
4. <u>Helianthus annuus</u>	<u>15</u>		<u>FACU</u>	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover: <u>100</u>	_____	_____	_____	
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
% Bare Ground in Herb Stratum <u>40</u>	% Cover of Biotic Crust _____			
Remarks:				



POWERTECH (USA) INC.

SOIL

Sampling Point W5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features			Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²	
0-6	10YR 3/2	100				SCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F, G, H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- ☐ (LRR H outside MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water Stained Leaves (B9)

- ☐ Salt Crusts (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Oder (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remark)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surfaces (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Frost-Heave Hummocks (C11) (LRR F)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Local Soil Survey Data (D8)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W6
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R1 P 17: Upstream R1 P18: Downstream		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____			
2. _____			
3. _____			
4. _____			
Total Cover:			
Sapling/Shrub Stratum			
1. <u>Rosa woodsii</u>	100	X	FACU
2. _____			
3. _____			
4. _____			
5. _____			
Total Cover:	100		
Herb Stratum			
1. <u>Elymus smithii</u>	85	X	FACU
2. <u>Astragalus sp.</u>	5		UPL
3. <u>Nassella viridula</u>	5		NI
4. <u>Ratibida columnifera</u>	5		NI
5. _____			
6. _____			
7. _____			
8. _____			
9. _____			
10. _____			
Total Cover:	100		
Woody Vine Stratum			
1. _____			
2. _____			
3. _____			
Total Cover:			
% Bare Ground in Herb Stratum	30	% Cover of Biotic Crust	
Remarks:			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species 85 x4= 340
UPL species 5 x5= 25
Column Totals: 90 (A) 365 (B)
Prevalence Index = B/A = 4.05

Hydrophytic Vegetation Indicators
_____ Dominance Test is > 50%
_____ Prevalence Index is ≤ 3.0¹
_____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation (Explain)

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes _____ No X

**POWERTech (USA) Inc.****SOIL**

Sampling Point W6

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/1	100					SiC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No X

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

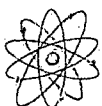
Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W7
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%): 2
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: R4SB7
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____	Is the Sampled Area Within a Wetland	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____		Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____					
Remarks: R1 P17 Upstream R1 P18 Downstream									

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That are OBL, FACW, or FAC:	<u>100</u> (A/B)
4. _____	_____	_____	_____		
Total Cover:	_____				
Sapling/Shrub Stratum					
1. _____	_____	_____	_____	Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
Total Cover:	_____				
Herb Stratum					
1. <u>Elymus smithii</u>	<u>5</u>		<u>FACU</u>	Hydrophytic Vegetation Indicators X Dominance Test is > 50% Prevalence Index is ≤ 3.0 ¹ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) _____ ¹ Indicators of hydric soils and wetland hydrology must be present Hydrophytic Vegetation Present? Yes _____ No _____	
2. <u>Cirsium arvense</u>	<u>5</u>		<u>FACU</u>		
3. <u>Spartina pectinata</u>	<u>75</u>	<u>X</u>	<u>FACW</u>		
4. <u>Helianthus annuus</u>	<u>10</u>		<u>FACU</u>		
5. <u>Cynoglossum officinale</u>	<u>5</u>		<u>NI</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
Total Cover:	<u>100</u>				
Woody Vine Stratum					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
Total Cover:	_____				
% Bare Ground in Herb Stratum	<u>5</u>	% Cover of Biotic Crust	_____		
Remarks: _____					

**POWERTech (USA) Inc.**SOIL Sampling Point W7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 3/1	70	7.5 YR 4/6	30	C	RC	SiC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks: _____

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks: _____



POWERTECH (USA) Inc.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W8
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 31, T6S, R1E
Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Convex Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: R2EM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R1 P19 Upstream R1 P20 Downstream Similar to W4 and all in between				

Is the Sampled Area Within a Wetland	Yes	<u>X</u>	No	_____
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VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		

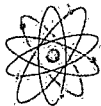
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Spartina pectinata</u>	<u>15</u>		<u>FACW</u>
2. <u>Eleocharis palustris</u>	<u>35</u>	<u>X</u>	<u>OBL</u>
3. <u>Schoenoplectus pungens</u>	<u>25</u>	<u>X</u>	<u>OBL</u>
4. <u>Eleocharis acicularis</u>	<u>25</u>	<u>X</u>	<u>OBL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		

Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		

% Bare Ground in Herb Stratum	<u>40</u>	% Cover of Biotic Crust	_____
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Remarks: _____

Dominance Test Worksheet:	
Number of Dominant Species That are OBL, FACW, or FAC:	<u>3</u> (A)
Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>100</u> (A/B)
Prevalence Index Worksheet:	
Total % Cover of:	Multiply by:
OBL species _____	x1= _____
FACW species _____	x2= _____
FAC species _____	x3= _____
FACU species _____	x4= _____
UPL species _____	x5= _____
Column Totals:	(A) _____ (B) _____
Prevalence Index = B/A = _____	
Hydrophytic Vegetation Indicators	
<u>X</u> Dominance Test is > 50%	
Prevalence Index is ≤ 3.0 ¹	
Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet)	
Problematic Hydrophytic Vegetation (Explain)	
¹ Indicators of hydric soils and wetland hydrology must be present	
Hydrophytic Vegetation Present?	
Yes	<u>X</u> No _____

**POWERTECH (USA) INC.****SOIL**

Sampling Point W8

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-5	Gley1 3/10Y	70	7.5YR 4/4	20	C	M, RC	SC	
			2.5N	10	D	M	SC	
5+	Rock							

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input checked="" type="checkbox"/> Histosol (A1)	<input checked="" type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

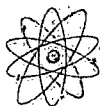
Field Observations:

Surface Water Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	5
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	5
Saturation Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	5
(includes capillary fringe)						

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W9
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 30-31, T6S R1E
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%):
 Subregion (LRP): Black Hills MLRA62 Lat: Long: Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: NWI Classification: PABJH
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area Within a Wetland Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present	Yes <u>X</u> No <u> </u>	
Remarks: R1 P23 Upstream R1 P24 Downstream		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover: <u> </u>				Prevalence Index Worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x1= <u> </u> FACW species <u> </u> x2= <u> </u> FAC species <u> </u> x3= <u> </u> FACU species <u> </u> x4= <u> </u> UPL species <u> </u> x5= <u> </u> Column Totals: <u> </u> (A) <u> </u> (B) Prevalence Index = B/A = <u> </u>
Sapling/Shrub Stratum 1. <u> </u> 2. <u> </u> 3. <u> </u> 4. <u> </u> 5. <u> </u> Total Cover: <u> </u>				
Herb Stratum 1. <u>Xanthium strumarium</u> 40 X FAC 2. <u>Suckleya suckleyana</u> 60 X OBL 3. <u> </u> 4. <u> </u> 5. <u> </u> 6. <u> </u> 7. <u> </u> 8. <u> </u> 9. <u> </u> 10. <u> </u> Total Cover: <u>100</u>				
Woody Vine Stratum 1. <u> </u> 2. <u> </u> 3. <u> </u> Total Cover: <u> </u>				
% Bare Ground in Herb Stratum <u>50</u> % Cover of Biotic Crust <u> </u> Remarks:				

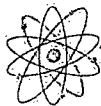
Hydrophytic Vegetation Indicators

X Dominance Test is > 50%
 Prevalence Index is ≤ 3.0¹
 Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation (Explain)

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present?

Yes X No

**POWERTECH (USA) INC.**

SOIL

Sampling Point W9

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 4/1	50	5YR 4/6	50	C	RC/M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks: _____

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

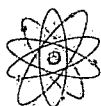
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
(includes capillary fringe)		

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Slight soil cracks were present.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/17/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W10
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.): Drainage/ Depression Local relief (concave, convex, none): Convex Slope (%):
 Subregion (LRP): Black Hills MLRA62 Lat: Long: Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: NWI Classification: PUSA
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology Significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation , Soil , or Hydrology Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area Within a Wetland Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present	Yes <u>X</u> No <u> </u>	
Remarks: NWI previously mapped: PEMF R2 P1: Downstream R2 P2: Upstream Transitioning area changing to an upland area.		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover: <u> </u>				
Sapling/Shrub Stratum				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Prevalence Index Worksheet: Total % Cover of: <u> </u> Multiply by: <u> </u> OBL species <u> </u> x1= <u> </u> FACW species <u>20</u> x2= <u>40</u> FAC species <u> </u> x3= <u> </u> FACU species <u> </u> x4= <u> </u> UPL species <u>80</u> x5= <u>400</u> Column Totals: <u>100</u> (A) <u>440</u> (B) Prevalence Index = B/A = <u>4.40</u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover: <u> </u>				
Herb Stratum				
1. <u>Carex filifolia</u>	<u>80</u>	<u>X</u>	<u>UPL</u>	Hydrophytic Vegetation Indicators Dominance Test is > 50% Prevalence Index is ≤ 3.0 ¹ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
2. <u>Hordeum jubatum</u>	<u>20</u>	<u>X</u>	<u>FACW</u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover: <u>100</u>				
Woody Vine Stratum				
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>	
Total Cover: <u> </u>				
% Bare Ground in Herb Stratum <u>10</u>	% Cover of Biotic Crust <u> </u>			
Remarks: <u> </u>				



Sampling Point W10

[illegible]

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Indicators for Problematic Hydric Soils³:

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes X No

A few oxidized root channels existed, with a greater percentage in the top five inches.

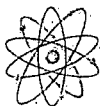
Surface Water (A1)	Salt Crusts (B11)
High Water Table (A2)	Aquatic Invertebrates (B13)
Saturation (A3)	Hydrogen Sulfide Oder (C1)
Water Marks (B1)	Dry-Season Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)
Drift Deposits (B3)	Thin Muck Surface (C7)
Algal Mat or Crust (B4)	Other (Explain in Remark)
Iron Deposits (B5)	
Inundation Visible on Aerial Imagery (B7)	
Water Stained Leaves (B9)	

	Surface Soil Cracks (B6)
	Sparsely Vegetated Concave Surfaces (B8)
	Drainage Patterns (B10)
X	Oxidized Rhizospheres on Living Roots (C3)
	Crayfish Burrows (C8)
	Saturation Visible on Aerial Imagery (C9)
	Frost-Heave Hummocks (C11) (LRR F)
X	Geomorphic Position (D2)
	FAC-Neutral Test (D5)
	Local Soil Survey Data (D8)

Surface Water Present?	Yes	_____	No	<u> X </u>	Depth (inches):	_____
Water Table Present?	Yes	_____	No	<u> X </u>	Depth (inches):	_____
Saturation Present?	Yes	_____	No	<u> X </u>	Depth (inches):	_____
(includes capillary fringe)						

Wetland Hydrology Present? Yes X No

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W11
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%): 1
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: NWI previously mapped: PEMF Cottonwoods in area but not in five foot radius R2 P3: West R2 P4: East		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		

Sapling/Shrub Stratum

1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		

Herb Stratum

1. <u>Bassia sieveriana</u>	<u>70</u>	<u>X</u>	<u>FACU</u>
2. <u>Hordeum jubatum</u>	<u>5</u>		<u>FACW</u>
3. <u>Chenopodium album</u>	<u>15</u>		<u>FAC</u>
4. <u>Cirsium arvense</u>	<u>5</u>		<u>FACU</u>
5. <u>Thlaspi arvense</u>	<u>5</u>		<u>FACU</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		

Woody Vine Stratum

1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		

% Bare Ground in Herb Stratum 40 % Cover of Biotic Crust _____

Remarks: _____

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index Worksheet:

Total % Cover of: _____ Multiply by: _____
 OBL species _____ x1= _____
 FACW species 5 x2= 10
 FAC species 15 x3= 45
 FACU species 80 x4= 320
 UPL species _____ x5= _____
 Column Totals: 100 (A) 375 (B)
 Prevalence Index = B/A = 3.75

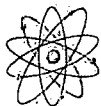
Hydrophytic Vegetation Indicators

_____ Dominance Test is > 50%
 _____ Prevalence Index is ≤ 3.0¹
 _____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation (Explain)

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present?

Yes _____ No X

**POWERTECH (USA) INC.****SOIL**

Sampling Point W11

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-8	10YR 4/1	100					SiC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No X

Remarks: _____

HYDROLOGY**Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

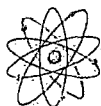
Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks: _____



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

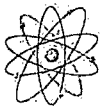
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W12
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: NWI previously mapped: PEMF R2 P5: West R2 P6: East		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____ 2. _____ 3. _____ 4. _____ Total Cover: _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	
Sapling/Shrub Stratum				Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species <u>5</u> x2= <u>10</u> FAC species <u>50</u> x3= <u>150</u> FACU species <u>45</u> x4= <u>180</u> UPL species _____ x5= _____ Column Totals: <u>100</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>3.40</u>
1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	
Herb Stratum				Hydrophytic Vegetation Indicators _____ Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
1. <u>Spartina pectinata</u> 2. <u>Chenopodium album</u> 3. <u>Cirsium arvense</u> 4. <u>Thlaspi arvense</u> 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ Total Cover: <u>100</u>	<u>5</u> <u>50</u> <u>15</u> <u>30</u> _____ _____ _____ _____ _____ _____	_____ <u>X</u> _____ <u>X</u> _____ _____ _____ _____ _____ _____	FACW FAC FACU FACU _____ _____ _____ _____ _____ _____	
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____ 2. _____ 3. _____ Total Cover: _____	_____ _____ _____ _____	_____ _____ _____ _____	_____ _____ _____ _____	
% Bare Ground in Herb Stratum <u>30</u> % Cover of Biotic Crust _____				
Remarks: _____				

**POWERTECH (USA) INC.**

SOIL

Sampling Point W12

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Redox Features Type ¹	Loc ²	Texture	Remarks
0-8	10YR 4/1	75	10YR 5/8	25	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F, G, H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- ☐ (LRR H outside MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water Stained Leaves (B9)

- ☐ Salt Crusts (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Oder (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remark)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surfaces (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Frost-Heave Hummocks (C11) (LRR F)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Local Soil Survey Data (D8)

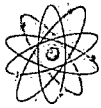
Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W13
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Convex Slope (%): 1
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: R4US
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes <u>X</u> No _____	

Remarks:

Just North of the area little bluestem is creeping into the drainage but it is still dominated by *Spartina pectinata*.

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Spartina pectinata</i>	90	X	FACW
2. <i>Andropogon scoparius</i>	5		NI
3. <i>Chenopodium album</i>	5		FAC
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	100		

Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		

% Bare Ground in Herb Stratum 10 % Cover of Biotic Crust _____

Remarks:

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species	_____	x1=	_____
FACW species	_____	x2=	_____
FAC species	_____	x3=	_____
FACU species	_____	x4=	_____
UPL species	_____	x5=	_____
Column Totals:	_____	(A)	_____ (B)
Prevalence Index = B/A = _____			

Hydrophytic Vegetation Indicators

X Dominance Test is > 50%
 _____ Prevalence Index is ≤ 3.0¹
 _____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation (Explain)

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present?

Yes X No _____

**POWERTECH (USA) INC.****SOIL**

Sampling Point W13

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-4	10YR 4/1	50	7.5YR 5/8	50	C	M	SiCL	
4-10	10YR 4/1	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes _____ No X**Remarks:**

There were small inclusions of mottles present in depths 4-10 in the matrix.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Water Table Present?	Yes _____ No <u>X</u>	Depth (inches): _____
Saturation Present?	Yes _____ No <u>X</u>	Depth (inches): _____
(includes capillary fringe)		

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

**POWERTECH (USA) Inc.**

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W14
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 32, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Convex Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: R4US
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R2 P7: Upstream R2P8: Downstream R2 P9: General area of PEMC				
area extends from waypoints 015-019				

VEGETATION

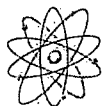
Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		
Herb Stratum			
1. <u>Spartina pectinata</u>	<u>40</u>	<u>X</u>	<u>FACW</u>
2. <u>Typha latifolia</u>	<u>20</u>	<u>X</u>	<u>OBL</u>
3. <u>Juncus balticus</u>	<u>40</u>	<u>X</u>	<u>FACW</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		
% Bare Ground in Herb Stratum	<u>10</u>	% Cover of Biotic Crust	
Remarks:			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species 20 x1= 20
FACW species 80 x2= 160
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: 100 (A) 180 (B)
Prevalence Index = B/A = 1.80

Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
X Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____



POWERTECH (USA) INC.

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-4	Gley1 4/N	55	7.5YR 5/8	45	C	RC	SiCL	
4-14	Gley1 4/N	80	7.5YR 4/6	20	C	M	SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

There were small inclusions of mottles present in depths 4-10 in the matrix.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

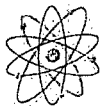
Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W15
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 30, T6S, R1E
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: R2EM
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes	<u>X</u>	No	_____	
Wetland Hydrology Present	Yes	<u>X</u>	No	_____	
Remarks: R2 P12: Upstream R2 P13: Downstream Wetland is upstream and the channel width is about 8 feet wide.					

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Total Cover: _____				Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____				
Herb Stratum 1. <u>Spartina pectinata</u> 55 X FACW 2. <u>Eleocharis palustris</u> 15 OBL 3. <u>Juncus balticus</u> 10 FACW 4. <u>Kochia scoparia</u> 10 FAC 5. <u>Bassia sieveriana</u> 10 FACU 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ Total Cover: 100				
Woody Vine Stratum 1. _____ 2. _____ 3. _____ Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				



Sampling Point W15

[illegible]

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Indicators for Problematic Hydric Soils³:

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Hydric Soils Present? Yes X No

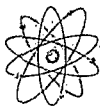
HYDROLOGY

Secondary Indicators (2 or more required)

	Surface Soil Cracks (B6)
	Sparsely Vegetated Concave Surfaces (B8)
X	Drainage Patterns (B10)
X	Oxidized Rhizospheres on Living Roots (C3)
	Crayfish Burrows (C8)
	Saturation Visible on Aerial Imagery (C9)
	Frost-Heave Hummocks (C11) (LRR F)
X	Geomorphic Position (D2)
	FAC-Neutral Test (D5)
	Local Soil Survey Data (D8)

Wetland Hydrology Present? Yes X No

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W16
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 31, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: R2EM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R2 P18: Upstream R2 P19: Downstream Aquatic animals present				

Is the Sampled Area Within a Wetland	Yes	<u>X</u>	No	_____
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VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____			

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____			

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Spartina pectinata</u>	<u>30</u>	<u>X</u>	<u>FACW</u>
2. <u>Cirsium arvense</u>	<u>5</u>	_____	<u>FACU</u>
3. <u>Eleocharis palustris</u>	<u>40</u>	<u>X</u>	<u>OBL</u>
4. <u>Juncus balticus</u>	<u>15</u>	_____	<u>FACW</u>
5. <u>Xanthium strumarium</u>	<u>5</u>	_____	<u>FAC</u>
6. <u>Chenopodium album</u>	<u>3</u>	_____	<u>FAC</u>
7. <u>Schoenoplectus pungens</u>	<u>2</u>	_____	<u>OBL</u>
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>			

Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____			

% Bare Ground in Herb Stratum	<u>5</u>	% Cover of Biotic Crust	_____
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Remarks: _____

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species	_____	x1=	_____
FACW species	_____	x2=	_____
FAC species	_____	x3=	_____
FACU species	_____	x4=	_____
UPL species	_____	x5=	_____
Column Totals:	_____ (A)		_____ (B)
Prevalence Index = B/A = _____			

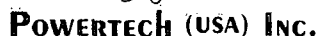
Hydrophytic Vegetation Indicators

X Dominance Test is > 50%
Prevalence Index is $\leq 3.0^1$
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain) _____

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present?

Yes X No _____



Sampling Point W16

[illegible]

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Probable Hydric Soils:	
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)	
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)	
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)	
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)	
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)		
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)		
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)			

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

Wetland Hydrology Indicators:

<input checked="" type="checkbox"/>	Surface Water (A1)	<input type="checkbox"/>	Salt Crusts (B11)
<input checked="" type="checkbox"/>	High Water Table (A2)	<input type="checkbox"/>	Aquatic Invertebrates (B13)
<input checked="" type="checkbox"/>	Saturation (A3)	<input type="checkbox"/>	Hydrogen Sulfide Oder (C1)
<input type="checkbox"/>	Water Marks (B1)	<input type="checkbox"/>	Dry-Season Water Table (C2)
<input type="checkbox"/>	Sediment Deposits (B2)	<input type="checkbox"/>	Presence of Reduced Iron (C4)
<input type="checkbox"/>	Drift Deposits (B3)	<input type="checkbox"/>	Thin Muck Surface (C7)
<input type="checkbox"/>	Algal Mat or Crust (B4)	<input type="checkbox"/>	Other (Explain in Remark)
<input type="checkbox"/>	Iron Deposits (B5)		
<input type="checkbox"/>	Inundation Visible on Aerial Imagery (B7)		
<input type="checkbox"/>	Water Stained Leaves (B9)		

Secondary Indicators (2 or more required)

Secondary Indicators (2 or more required)	
	Surface Soil Cracks (B6)
	Sparsely Vegetated Concave Surfaces (B8)
X	Drainage Patterns (B10)
	Oxidized Rhizospheres on Living Roots (C3)
	Crayfish Burrows (C8)
	Saturation Visible on Aerial Imagery (C9)
	Frost-Heave Hummocks (C11) (LRR F)
X	Geomorphic Position (D2)
	FAC-Neutral Test (D5)
	Local Soil Survey Data (D8)

Surface Water Present?	Yes	<u>X</u>	No	<u> </u>	Depth (inches):	<u>5</u>
Water Table Present?	Yes	<u>X</u>	No	<u> </u>	Depth (inches):	<u>5</u>
Saturation Present?	Yes	<u>X</u>	No	<u> </u>	Depth (inches):	<u>5</u>
<i>(includes capillary fringe)</i>						

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W17
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 31, T6S, R1E
Landform (hillslope, terrace, etc.): Ditch around agricultural area Local relief (concave, convex, none): convex Slope (%): 2
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R2 P22: Upstream R2 P23: Downstream Previously mapped as PEMA		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		
Herb Stratum			
1. <u>Bromus inermis</u>	<u>95</u>	<u>X</u>	<u>FACU</u>
2. <u>Cirsium arvense</u>	<u>2</u>	_____	<u>FACU</u>
3. <u>Chenopodium album</u>	<u>3</u>	_____	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		
% Bare Ground in Herb Stratum	_____	% Cover of Biotic Crust	_____
Remarks:			

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index Worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species	_____	x1=	_____
FACW species	_____	x2=	_____
FAC species	<u>3</u>	x3=	<u>9</u>
FACU species	<u>97</u>	x4=	<u>388</u>
UPL species	_____	x5=	_____
Column Totals:	<u>100</u>	(A)	<u>397</u> (B)
Prevalence Index = B/A = <u>3.97</u>			

Hydrophytic Vegetation Indicators

_____ Dominance Test is > 50%
_____ Prevalence Index is ≤ 3.0¹
_____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation (Explain)

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes _____ No X

**POWERTECH (USA) INC.****SOIL**

Sampling Point W17

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	2.5Y 2.5/1	100					C	
2-8	2.5Y 4/3	100					C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

☐ Histosol (A1)
☐ Histic Epipedon (A2)
☐ Black Histic (A3)
☐ Hydrogen Sulfide (A4)
☐ Stratified Layers (A5) (LRR F)
☐ 1 cm Muck (A9) (LRR F, G, H)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)
☐ 5 cm Mucky Peat or Peat (S3) (LRR F)

☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)
☐ High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

☐ 1 cm Muck (A9) (LRR C)
☐ Coast Prairie Redox (A16) (LRR F, G, H)
☐ Dark Surface (S7) (LRR G)
☐ High Plains Depressions (F16)
☐ (LRR H outside MLRA 72 & 73)
☐ Reduced Vertic (F18)
☐ Red Parent Material (TF2)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes _____ No X

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Water Stained Leaves (B9)

☐ Salt Crusts (B11)
☐ Aquatic Invertebrates (B13)
☐ Hydrogen Sulfide Oder (C1)
☐ Dry-Season Water Table (C2)
☐ Presence of Reduced Iron (C4)
☐ Thin Muck Surface (C7)
☐ Other (Explain in Remark)

Secondary Indicators (2 or more required)

☐ Surface Soil Cracks (B6)
☐ Sparsely Vegetated Concave Surfaces (B8)
☐ Drainage Patterns (B10)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Crayfish Burrows (C8)
☐ Saturation Visible on Aerial Imagery (C9)
☐ Frost-Heave Hummocks (C11) (LRR F)
☒ X Geomorphic Position (D2)
☐ FAC-Neutral Test (D5)
☐ Local Soil Survey Data (D8)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W18
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 31, T6S, R1E
Landform (hillslope, terrace, etc.): Drainage bank Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: R2EM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Is the Sampled Area Within a Wetland Yes <u>X</u> No _____				
Remarks: R3 P1: Upstream R3 P2: Downstream Wpt 026 is similar to W18, R2 P24: Upstream Width of wetland is about 17', width of channel is about 12'				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Herb Stratum			
1. <u>Spartina pectinata</u>	<u>80</u>	<u>X</u>	<u>FACW</u>
2. <u>Xanthium strumarium</u>	<u>5</u>	_____	<u>FAC</u>
3. <u>Schoenoplectus pungens</u>	<u>10</u>	_____	<u>OBL</u>
4. <u>Juncus balticus</u>	<u>5</u>	_____	<u>FACW</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>	_____	_____	_____
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
% Bare Ground in Herb Stratum <u>5</u>	% Cover of Biotic Crust _____		
Remarks:			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____
Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain) _____
¹Indicators of hydric soils and wetland hydrology must be present
Hydrophytic Vegetation Present? Yes X No _____



POWERTECH (USA) Inc.

SOIL

Sampling Point W18

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-6	Gley1 4/5GY	97	2.5YR 7/8	3	C	M	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches):	8
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

The water table was present within 8" of the surface.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W19
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 31, T6S, R1E
 Landform (hillslope, terrace, etc.) Low area Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: Low vegetation cover, Normal circumstances present within an active prairie dog community. Previously NWI mapped as PEMF. R3 P3: Northwest R3 P4: East		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Total Cover: _____				Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species <u>99</u> x3= <u>297</u> FACU species <u>1</u> x4= <u>4</u> UPL species _____ x5= _____ Column Totals: <u>100</u> (A) <u>301</u> (B) Prevalence Index = B/A = <u>3.01</u>
Sapling/Shrub Stratum 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____				
Herb Stratum 1. <u>Chenopodium berlandieri</u> <u>99</u> <u>X</u> <u>FAC</u> 2. <u>Bassia sieveriana</u> <u>1</u> _____ <u>FACU</u> 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ Total Cover: <u>100</u>				
Woody Vine Stratum 1. _____ 2. _____ 3. _____ Total Cover: _____				
% Bare Ground in Herb Stratum <u>65</u> % Cover of Biotic Crust _____ Remarks: _____				

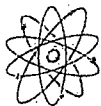
Hydrophytic Vegetation Indicators

_____ Dominance Test is > 50%
 _____ Prevalence Index is ≤ 3.0¹
 _____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
 _____ Problematic Hydrophytic Vegetation (Explain)

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present?

Yes _____ No X



POWERTECH (USA) INC.

SOIL

Sampling Point W19

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 4/1	95	7.5YR 5/8	5	C	M	SiCL	
2-4	10YR 4/1	100					SiCL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☐ No ☒ X

Remarks: _____

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

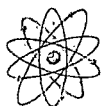
Field Observations:

Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> X	Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒ X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks: _____



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W20
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 9, T7S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

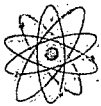
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	_____	No	<u>X</u>
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R2 P12: Upstream R2 P13: Downstream Wetland is upstream and the channel width is about 8 feet wide.				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____	_____		
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____	_____		
Herb Stratum			
1. <u>Schoenoplectus pungens</u>	<u>90</u>	<u>X</u>	<u>OBL</u>
2. <u>Cirsium arvense</u>	<u>5</u>	_____	<u>FACU</u>
3. <u>Bassia sieveriana</u>	<u>5</u>	_____	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>	_____		
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____	_____		
% Bare Ground in Herb Stratum		% Cover of Biotic Crust	
Remarks:			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____
Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present
Hydrophytic Vegetation Present? Yes X No _____

**POWERTECH (USA) INC.****SOIL**

Sampling Point W20

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	Redox Features		Loc ²	Texture	Remarks
0-12	10YR 3/1	98	5YR 5/8	2	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes _____ No X**Remarks:****HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

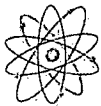
Surface Water Present?	Yes <u>X</u>	No _____	Depth (inches):	<u>5</u>
Water Table Present?	Yes _____	No <u>X</u>	Depth (inches):	_____
Saturation Present?	Yes _____	No <u>X</u>	Depth (inches):	_____

(includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W21
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 9, T7S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R3 P10: Upstream R3 P11: Downstream R3 P12: Bridge Channel crosses the boundary and extends to the road				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Herb Stratum			
1. <u><i>Typha latifolia</i></u>	<u>55</u>	<u>X</u>	<u>OBL</u>
2. <u><i>Asclepias speciosa</i></u>	<u>10</u>	_____	<u>FAC</u>
3. <u><i>Glycyrrhiza lepidota</i></u>	<u>15</u>	_____	<u>FACU</u>
4. <u><i>Spartina pectinata</i></u>	<u>5</u>	_____	<u>FACW</u>
5. <u><i>Helianthus annuus</i></u>	<u>5</u>	_____	<u>FACU</u>
6. <u><i>Melilotus sp.</i></u>	<u>5</u>	_____	<u>FACU</u>
7. <u><i>Schoenoplectus pungens</i></u>	<u>5</u>	_____	<u>OBL</u>
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>	_____	_____	_____
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
% Bare Ground in Herb Stratum		% Cover of Biotic Crust	
Remarks: _____			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
_____ Prevalence Index is ≤ 3.0¹
_____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____

**POWERTECH (USA) INC.****SOIL**

Sampling Point W21

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	5YR 3/4	100					SCL	
3-5	10YR 2/2	50	5YR 4/6	50	C	M	SCL	water filled the hole

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input checked="" type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

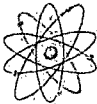
Field Observations:

Surface Water Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	0
Water Table Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	_____
Saturation Present?	Yes	<input checked="" type="checkbox"/>	No	_____	Depth (inches):	_____
(includes capillary fringe)						

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W22
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 9, T7S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	_____	No	<u>X</u>
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R3 P13: Upstream R3 P14: Downstream				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		
Herb Stratum			
1. <u>Spartina pectinata</u>	<u>81</u>	<u>X</u>	<u>FACW</u>
2. <u>Cirsium arvense</u>	<u>19</u>		<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		
% Bare Ground in Herb Stratum	<u>15</u>	% Cover of Biotic Crust	_____
Remarks:			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species x1= _____
FACW species 81 x2= 162
FAC species x3= _____
FACU species 19 x4= 76
UPL species x5= _____
Column Totals: 100 (A) 238 (B)
Prevalence Index = B/A = 2.38

Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
_____ Prevalence Index is ≤ 3.0¹
_____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____

**POWERTECH (USA) INC.****SOIL**

Sampling Point W22

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-1	10YR 4/6	100					SC	
1-4	2.5YR 3/2	100					SC	Hit rock at 4 inches

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No X**Remarks:****HYDROLOGY****Wetland Hydrology Indicators:****Primary Indicators (any one indicator is sufficient)**

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

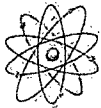
<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Dry throughout the area and there was encroachment of upland species.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

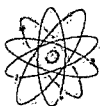
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/18/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W23
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 10, T7S, R1E
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: PEM
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes	<u>X</u>	No	_____	
Wetland Hydrology Present	Yes		No	<u>X</u>	
Remarks: R3 P17: Upstream R3 P18: Downstream Possible low spot that collects water, dying cattails present.					

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1. _____	_____	_____	_____	Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)	
4. _____	_____	_____	_____	Prevalence Index Worksheet:	
Total Cover: _____				Total % Cover of: _____ Multiply by: _____	
Sapling/Shrub Stratum				OBL species <u>60</u> x1= <u>60</u>	
1. _____	_____	_____	_____	FACW species <u>9</u> x2= <u>18</u>	
2. _____	_____	_____	_____	FAC species <u>1</u> x3= <u>3</u>	
3. _____	_____	_____	_____	FACU species <u>30</u> x4= <u>120</u>	
4. _____	_____	_____	_____	UPL species _____ x5= _____	
5. _____	_____	_____	_____	Column Totals: <u>100</u> (A) <u>201</u> (B)	
Total Cover: _____				Prevalence Index = B/A = <u>2.01</u>	
Herb Stratum				Hydrophytic Vegetation Indicators	
1. <u>Spartina pectinata</u>	<u>9</u>		<u>FACW</u>	Dominance Test is > 50% <u>X</u> Prevalence Index is ≤ 3.0 ¹	
2. <u>Cirsium arvense</u>	<u>20</u>	<u>X</u>	<u>FACU</u>	Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet)	
3. <u>Bassia sieveriana</u>	<u>10</u>		<u>FACU</u>	Problematic Hydrophytic Vegetation (Explain)	
4. <u>Typha latifolia</u>	<u>60</u>	<u>X</u>	<u>OBL</u>		
5. <u>Chenopodium album</u>	<u>1</u>		<u>FAC</u>		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
Total Cover: <u>100</u>				¹ Indicators of hydric soils and wetland hydrology must be present	
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
Total Cover: _____					
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____					
Remarks:					

**POWERTECH (USA) INC.****SOIL**

Sampling Point W23

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 3/1	100					SiC	
2-6	5YR 4/6	95	7.5YR 5/8	5	C	RC	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

Orange coloration due to parent material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
(includes capillary fringe)				

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W25
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 34, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

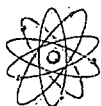
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R4 P1: Upstream R4 P2: Downstream		

VEGETATION

Tree Stratum (Use scientific names)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Populus deltoides</u>	<u>100</u>	<u>X</u>	<u>FAC</u>
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
Total Cover:		<u>100</u>		
Sapling/Shrub Stratum				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
Total Cover:		_____		
Herb Stratum				
1.	<u>Elymus smithii</u>	<u>95</u>	<u>X</u>	<u>FACU</u>
2.	<u>Chenopodium album</u>	<u>5</u>		<u>FAC</u>
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____
6.	_____	_____	_____	_____
7.	_____	_____	_____	_____
8.	_____	_____	_____	_____
9.	_____	_____	_____	_____
10.	_____	_____	_____	_____
Total Cover:		<u>100</u>		
Woody Vine Stratum				
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
Total Cover:		_____		
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust _____		
Remarks: Upland species in drainage and banks, there were two living <i>Populus deltoids</i> present.				

Dominance Test Worksheet:	
Number of Dominant Species That are OBL, FACW, or FAC:	<u>0</u> (A)
Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>0</u> (A/B)
Prevalence Index Worksheet:	
Total % Cover of:	Multiply by:
OBL species _____	x1= _____
FACW species _____	x2= _____
FAC species <u>105</u>	x3= <u>315</u>
FACU species <u>95</u>	x4= <u>380</u>
UPL species _____	x5= _____
Column Totals: <u>200</u> (A)	<u>695</u> (B)
Prevalence Index = B/A = <u>3.48</u>	
Hydrophytic Vegetation Indicators	
_____ Dominance Test is > 50%	
_____ Prevalence Index is ≤ 3.0 ¹	
_____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet)	
_____ Problematic Hydrophytic Vegetation (Explain)	
¹ Indicators of hydric soils and wetland hydrology must be present	
Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	

**POWERTECH (USA) INC.**

SOIL

Sampling Point W25

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features			Texture	Remarks
			Color (moist)	%	Type ¹		
0-4	5YR 2.5/1	60				SiCL	
Parent material	5YR 4/4	40					

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input checked="" type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No ☒ X

Remarks:

Orange coloration due to parent material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

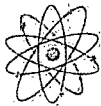
Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/> X	Depth (inches): _____
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/> X	Depth (inches): _____
Saturation Present?	Yes _____ No <input checked="" type="checkbox"/> X	Depth (inches): _____

(includes capillary fringe)

Wetland Hydrology Present? Yes _____ No ☒ X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

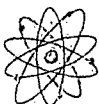
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W26
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 34, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R4 P3: Upstream R4 P4: Downstream Upland vegetation has moved down the banks and in the area of the drainage on either side.		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____ 2. _____ 3. _____ 4. _____ Total Cover: _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	
Sapling/Shrub Stratum				Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species <u>15</u> x2= <u>30</u> FAC species <u>10</u> x3= <u>30</u> FACU species <u>75</u> x4= <u>300</u> UPL species _____ x5= _____ Column Totals: <u>100</u> (A) <u>360</u> (B) Prevalence Index = B/A = <u>3.60</u>
1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	_____ _____ _____ _____ _____	
Herb Stratum				Hydrophytic Vegetation Indicators _____ Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
1. <u>Elymus smithii</u> <u>30</u> <u>X</u> <u>FACU</u> 2. <u>Elymus canadensis</u> <u>25</u> <u>X</u> <u>FACU</u> 3. <u>Thlaspi arvense</u> <u>5</u> <u>FACU</u> 4. <u>Bassia sieveriana</u> <u>10</u> <u>FACU</u> 5. <u>Phalaris arundinacea</u> <u>15</u> <u>FACW</u> 6. <u>Chenopodium album</u> <u>5</u> <u>FAC</u> 7. <u>Xanthium strumarium</u> <u>5</u> <u>FAC</u> 8. <u>Helianthus annuus</u> <u>5</u> <u>FACU</u> 9. _____ 10. _____ Total Cover: <u>100</u>	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	_____ _____ _____ _____ _____ _____ _____ _____ _____ _____	
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____ 2. _____ 3. _____ Total Cover: _____	_____ _____ _____ _____	_____ _____ _____ _____	_____ _____ _____ _____	
% Bare Ground in Herb Stratum <u>10</u> % Cover of Biotic Crust _____				
Remarks: _____				

**POWERTECH (USA) INC.****SOIL**

Sampling Point W26

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-1	2.5YR 4/8	100					C	
1-7	7.5YR 4/2	100					C	
7-9	Gley2 2.5/10B	100					C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input checked="" type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐**Remarks:**

Orange coloration due to parent material

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

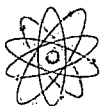
Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
(includes capillary fringe)				

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W27
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 34, T6S, R1E
 Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R4 P1: Upstream R4 P2: Downstream		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index Worksheet:
Total Cover: _____	_____	_____	_____	
Sapling/Shrub Stratum				OBL species _____ x1= _____
1. _____	_____	_____	_____	FACW species _____ x2= _____
2. _____	_____	_____	_____	FAC species <u>20</u> x3= <u>60</u>
3. _____	_____	_____	_____	FACU species <u>80</u> x4= <u>320</u>
4. _____	_____	_____	_____	UPL species _____ x5= _____
5. _____	_____	_____	_____	Column Totals: <u>100</u> (A) <u>380</u> (B)
Total Cover: _____	_____	_____	_____	Prevalence Index = B/A = <u>3.80</u>
Herb Stratum				Hydrophytic Vegetation Indicators _____ Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
1. <u>Elymus smithii</u>	<u>40</u>	<u>X</u>	<u>FACU</u>	
2. <u>Elymus canadensis</u>	<u>30</u>	<u>X</u>	<u>FACU</u>	
3. <u>Chenopodium album</u>	<u>10</u>	_____	<u>FAC</u>	
4. <u>Xanthium strumarium</u>	<u>10</u>	_____	<u>FAC</u>	
5. <u>Helianthus annuus</u>	<u>10</u>	_____	<u>FACU</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover: <u>100</u>	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Woody Vine Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>98</u>	% Cover of Biotic Crust _____			

Remarks:
The vegetation is only on the banks and not in the drainage; the percent bare ground in channel is 98%.

**POWERTECH (USA) INC.****SOIL**

Sampling Point W27

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-1	2.5Y 5/3	100					C	
0.75	2.5YR 4/8	100					C	
1-8	2.5Y 5/3	100					C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input checked="" type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No ☒**Remarks:**

One inch to the red layer (red layer is about 2 cm thick). The black layer is organic.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

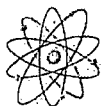
<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes _____ No ☒ Depth (inches): _____
Water Table Present? Yes _____ No ☒ Depth (inches): _____
Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Soil is moist but not saturated.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W28
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 34, T6S, R1E
Landform (hillslope, terrace, etc.) Drainage Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R4 P13: Upstream R4 P14: Downstream		

VEGETATION

Tree Stratum (Use scientific names)		Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:	
1.	<u>Populus deltoides</u>	100	<u>X</u>	<u>FAC</u>	Number of Dominant Species That are OBL, FACW, or FAC:	<u>1</u> (A)
2.	_____	_____	_____	_____	Total Number of Dominant Species Across All Strata:	<u>4</u> (B)
3.	_____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>25</u> (A/B)
4.	_____	_____	_____	_____	Prevalence Index Worksheet:	
Total Cover:		100			Total % Cover of:	Multiply by:
Sapling/Shrub Stratum					OBL species	x1= _____
1.	<u>Symphoricarpos albus</u>	100	<u>X</u>	<u>FACU-</u>	FACW species	x2= _____
2.	_____	_____	_____	_____	FAC species	119 x3= <u>357</u>
3.	_____	_____	_____	_____	FACU species	158 x4= <u>632</u>
4.	_____	_____	_____	_____	UPL species	2 x5= <u>10</u>
5.	_____	_____	_____	_____	Column Totals:	<u>279</u> (A) <u>999</u> (B)
Total Cover:		100			Prevalence Index = B/A =	<u>3.58</u>
Herb Stratum					Hydrophytic Vegetation Indicators	
1.	<u>Elymus smithii</u>	35	<u>X</u>	<u>FACU</u>	Dominance Test is > 50%	
2.	<u>Bassia sieveriana</u>	20	<u>X</u>	<u>FACU</u>	Prevalence Index is $\leq 3.0^1$	
3.	<u>Calamovilfa longifolia</u>	12	_____	<u>NI</u>	Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet)	
4.	<u>Descurainia pinnata</u>	1	_____	<u>NI</u>	Problematic Hydrophytic Vegetation (Explain)	
5.	<u>Thlaspi arvense</u>	3	_____	<u>FACU</u>	¹ Indicators of hydric soils and wetland hydrology must be present	
6.	<u>Chenopodium album</u>	17	_____	<u>FAC</u>	Hydrophytic Vegetation Present?	
7.	<u>Asclepias speciosa</u>	2	_____	<u>FAC</u>	Yes _____ No <u>X</u>	
8.	<u>Elymus cinerius</u>	15	_____	<u>NI</u>		
9.	<u>Sisymbrium altissimum</u>	2	_____	<u>UPL</u>		
10.	<u>Camelina microcarpa</u>	1	_____	<u>NI</u>		
Total Cover:		100				
Woody Vine Stratum						
1.	_____	_____	_____	_____		
2.	_____	_____	_____	_____		
3.	_____	_____	_____	_____		
Total Cover:		_____				
% Bare Ground in Herb Stratum		20	% Cover of Biotic Crust			

Remarks:



POWERTECH (USA) INC.

SOIL Sampling Point W28

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Redox Features Type ¹	Loc ²	Texture	Remarks
0-3	5YR 4/6	100					SC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input checked="" type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes _____ No ☒

Remarks:

Orange coloration due to parent material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

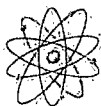
Field Observations:

Surface Water Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present?	Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____
(includes capillary fringe)		

Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W29
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 3, T7S, R1E
Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 2
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R4 P17: Upstream R4 P18: Downstream Area is similar through the drainage; the upland species are dominant in the drainage. The Drainage is about 3' across on average.		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Populus deltoides</u>	<u>100</u>	<u>X</u>	<u>FAC</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	<u>100</u>		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		

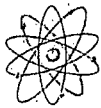
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Elymus smithii</u>	<u>10</u>		<u>FACU</u>
2. <u>Bassia sieveriana</u>	<u>5</u>		<u>FACU</u>
3. <u>Elymus canadensis</u>	<u>40</u>	<u>X</u>	<u>FACU</u>
4. <u>Helianthus annuus</u>	<u>5</u>		<u>FACU</u>
5. <u>Nassella viridula</u>	<u>10</u>		<u>NI</u>
6. <u>Chenopodium album</u>	<u>3</u>		<u>FACU</u>
7. <u>Asclepias speciosa</u>	<u>2</u>		<u>FAC</u>
8. <u>Bromus inermis</u>	<u>20</u>	<u>X</u>	<u>FACU</u>
9. <u>Sisymbrium altissimum</u>	<u>5</u>		<u>UPL</u>
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		

Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		

% Bare Ground in Herb Stratum 50 % Cover of Biotic Crust _____

Remarks: _____

Dominance Test Worksheet:	
Number of Dominant Species That are OBL, FACW, or FAC:	<u>1</u> (A)
Total Number of Dominant Species Across All Strata:	<u>3</u> (B)
Percent of Dominant Species That Are OBL, FACW, or FAC:	<u>33.33</u> (A/B)
Prevalence Index Worksheet:	
Total % Cover of:	Multiply by: _____
OBL species	x1= _____
FACW species	x2= _____
FAC species	x3= <u>102</u> <u>306</u>
FACU species	x4= <u>83</u> <u>332</u>
UPL species	x5= <u>5</u> <u>25</u>
Column Totals:	<u>190</u> (A) <u>663</u> (B)
Prevalence Index = B/A =	<u>3.49</u>
Hydrophytic Vegetation Indicators	
_____ Dominance Test is > 50%	
_____ Prevalence Index is ≤ 3.0 ¹	
_____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet)	
_____ Problematic Hydrophytic Vegetation (Explain)	
¹ Indicators of hydric soils and wetland hydrology must be present	
Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	



POWERTech (USA) INC.

SOIL

Sampling Point W29

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-3	5YR 4/6	100					C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input checked="" type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No ☒Remarks:
Hard to dig soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

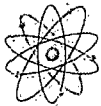
Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes _____ No ☒ Depth (inches): _____
Water Table Present? Yes _____ No ☒ Depth (inches): _____
Saturation Present? Yes _____ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes _____ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W30
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 10, T7S, R1E
Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: _____
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R4 P19: East R4 P20: West Waypoints 46-49 mark the boundary		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____			
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____			
Herb Stratum			
1. <u>Elymus smithii</u>	<u>85</u>	<u>X</u>	<u>FACU</u>
2. <u>Carex filifolia</u>	<u>15</u>		<u>UPL</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>			
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____			
% Bare Ground in Herb Stratum <u>30</u>		% Cover of Biotic Crust _____	
Remarks:			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)
Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species 85 x4= 340
UPL species 15 x5= 75
Column Totals: 100 (A) 415 (B)
Prevalence Index = B/A = 4.15
Hydrophytic Vegetation Indicators
_____ Dominance Test is > 50%
_____ Prevalence Index is ≤ 3.0¹
_____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present
Hydrophytic Vegetation Present? Yes _____ No X

**POWERTECH (USA) INC.****SOIL**

Sampling Point W30

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-8	7.5YR 4/1	70	7.5YR 4/6	30	C	M	SiC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐**Remarks:**

Orange coloration due to parent material

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____

(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) Inc.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W31
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 10, T7S, R1E
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PUB
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R4 P21: Northeast R4 P22: East- southeast		

VEGETATION

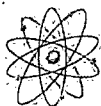
Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		
Herb Stratum			
1. <u>Distichlis stricta</u>	<u>35</u>	<u>X</u>	<u>FACW</u>
2. <u>Sporobolus airoides</u>	<u>20</u>	<u>X</u>	<u>FAC</u>
3. <u>Salsola tragus</u>	<u>45</u>	<u>X</u>	<u>FACU-</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		
% Bare Ground in Herb Stratum	<u>70</u>	% Cover of Biotic Crust	
Remarks: _____			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species 35 x2= 70
FAC species 20 x3= 60
FACU species 45 x4= 180
UPL species _____ x5= _____
Column Totals: 100 (A) 310 (B)
Prevalence Index = B/A = 3.10

Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____

**POWERTECH (USA) INC.**

SOIL

Sampling Point W31

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-0.5	White salt crust							
0.5-14	10YR 4/3	100					C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No X

Remarks:

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input checked="" type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

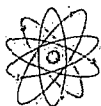
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W32
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 10, T7S R1E
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PUS
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes	<u>X</u>	No	_____	
Wetland Hydrology Present	Yes		No	<u>X</u>	
Remarks: R4 P24: Of the previously mapped PEM wetland R4 P25: from the berm					

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators <u>X</u> Dominance Test is > 50% Prevalence Index is ≤ 3.0 ¹ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain) _____ ¹ Indicators of hydric soils and wetland hydrology must be present
Total Cover: _____	_____	_____	_____	
Sapling/Shrub Stratum				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Total Cover: _____	_____	_____	_____	
Herb Stratum				
1. <u>Echinochloa muricata</u>	<u>100</u>	<u>X</u>	<u>OBL</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
10. _____	_____	_____	_____	
Total Cover: <u>100</u>	<u>100</u>	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Woody Vine Stratum				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Total Cover: _____	_____	_____	_____	
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

**POWERTECH (USA) INC.**

SOIL

Sampling Point W32

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-8	5YR 4/1	50	7.5YR 4/6	50	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____

(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W33
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 14, T7S, R1E
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Is the Sampled Area Within a Wetland Yes <u>X</u> No _____				
Remarks: R4 P1: Upstream R4 P2: Downstream				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____			
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____			
Herb Stratum			
1. <u>Juncus balticus</u>	<u>20</u>	<u>X</u>	<u>FACW</u>
2. <u>Distichlis stricta</u>	<u>50</u>	<u>X</u>	<u>FACW</u>
3. <u>Schoenoplectus tabernaemontani</u>	<u>30</u>	<u>X</u>	<u>OBL</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>			
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____			
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____			
Remarks: <u>Schoenoplectus tabernaemontani</u> dominant on the fringe of the pond.			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____



Sampling Point W33

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

Orange coloration due to parent material

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

Secondary Indicators (2 or more required)

Secondary Indicators (2 or more required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surfaces (B8)
- _____ Drainage Patterns (B10)
- _____ Oxidized Rhizospheres on Living Roots (C3)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Frost-Heave Hummocks (C11) (**LRR F**)
- _____ Geomorphic Position (D2)
- _____ FAC-Neutral Test (D5)
- _____ Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes	<u>X</u>	No	<u> </u>	Depth (inches):	<u> </u>
Water Table Present?	Yes	<u>X</u>	No	<u> </u>	Depth (inches):	<u> 2 </u>
Saturation Present?	Yes	<u>X</u>	No	<u> </u>	Depth (inches):	<u> 4 </u>
(includes capillary fringe)						

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

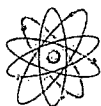
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W34
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 14, T7S, R1E
 Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: _____
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes _____ No <u>X</u>	
Remarks: R5 P9: Upstream R5 P10: Downstream Waypoint 58 indicates the end of surface water (R5 P8)		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33.33</u> (A/B)
1. _____ 2. _____ 3. _____ 4. _____ Total Cover: _____				
Sapling/Shrub Stratum 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ Total Cover: _____				Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species <u>15</u> x2= <u>30</u> FAC species <u>10</u> x3= <u>30</u> FACU species <u>60</u> x4= <u>240</u> UPL species <u>15</u> x5= <u>75</u> Column Totals: <u>100</u> (A) <u>375</u> (B) Prevalence Index = B/A = <u>3.75</u>
Herb Stratum 1. <u>Hordeum jubatum</u> <u>15</u> <u>X</u> <u>FACW</u> 2. <u>Xanthium strumarium</u> <u>10</u> _____ <u>FAC</u> 3. <u>Chenopodium album</u> <u>10</u> _____ <u>FACU</u> 4. <u>Grindelia squarrosa</u> <u>15</u> <u>X</u> <u>UPL</u> 5. <u>Cirsium arvense</u> <u>10</u> _____ <u>FACU</u> 6. <u>Polygonum aviculare</u> <u>35</u> <u>X</u> <u>FACU</u> 7. <u>Elymus smithii</u> <u>5</u> _____ <u>FACU</u> 8. _____ 9. _____ 10. _____ Total Cover: <u>100</u>				
Woody Vine Stratum 1. _____ 2. _____ 3. _____ Total Cover: _____				Hydrophytic Vegetation Indicators Dominance Test is > 50% Prevalence Index is ≤ 3.0 ¹ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation (Explain)
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____ Remarks:				¹ Indicators of hydric soils and wetland hydrology must be present Hydrophytic Vegetation Present? Yes _____ No <u>X</u>



POWERTech (USA) Inc.

SOIL Sampling Point W34

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	Gley1 2.5/N	95	2.5YR 4/8	5	C	M, RC	CL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

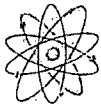
Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W35
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 14, T7S, R1E
Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PUB
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

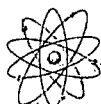
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R5 P11: Facing east R5 P12: Facing south Possible stock dam		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____			
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____			
Herb Stratum			
1. <u>Distichlis stricta</u>	<u>80</u>	<u>X</u>	<u>FACW</u>
2. <u>Melilotus sp.</u>	<u>20</u>	_____	<u>FACU</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>			
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____			
% Bare Ground in Herb Stratum <u>80</u>		% Cover of Biotic Crust _____	
Remarks:			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)
Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species 80 x2= 160
FAC species _____ x3= _____
FACU species 20 x4= 80
UPL species _____ x5= _____
Column Totals: 100 (A) 240 (B)
Prevalence Index = B/A = 2.40
Hydrophytic Vegetation Indicators
Dominance Test is > 50%
X Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present
Hydrophytic Vegetation Present? Yes X No _____



POWERTECH (USA) INC.

SOIL

Sampling Point W35

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-8	7.5YR 2.5/1	80	2.5YR 4/8	20	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F, G, H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- ☐ (LRR H outside MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water Stained Leaves (B9)
- ☐ Salt Crusts (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Oder (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remark)

Secondary Indicators (2 or more required)

- ☒ Surface Soil Cracks (B6)
- ☒ Sparsely Vegetated Concave Surfaces (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Frost-Heave Hummocks (C11) (LRR F)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Local Soil Survey Data (D8)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Soil is moist but not saturated.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

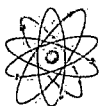
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/19/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W36
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 10, T7S, R1E
 Landform (hillslope, terrace, etc.) Outfall Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: PEM
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R5 P20: Downstream R5 P21: Upstream to stock tank Stock tank overflow -waypoint 60- end of N - waypoint 68, R5 P18: Upstream, R5 P19: Downstream - waypoint 67 end of W, further SW there is <i>Hordeum jubatum</i> was dominant in channel and water disappears.		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index Worksheet:
Total Cover: _____	_____	_____	_____	
Sapling/Shrub Stratum				OBL species _____ x1= _____
1. _____	_____	_____	_____	FACW species _____ x2= _____
2. _____	_____	_____	_____	FAC species _____ x3= _____
3. _____	_____	_____	_____	FACU species _____ x4= _____
4. _____	_____	_____	_____	UPL species _____ x5= _____
5. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
Total Cover: _____	_____	_____	_____	Prevalence Index = B/A = _____
Herb Stratum				Hydrophytic Vegetation Indicators
1. <i>Hordeum jubatum</i>	20	X	FACW	
2. <i>Juncus balticus</i>	65	X	FACW	Prevalence Index is ≤ 3.0 ¹
3. <i>Melilotus alba</i>	10		FACU-	Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet)
4. <i>Rumex occidentalis</i>	5		OBL	Problematic Hydrophytic Vegetation (Explain)
5. _____	_____	_____	_____	¹ Indicators of hydric soils and wetland hydrology must be present
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover: _____	100	_____	_____	
Woody Vine Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____	_____	_____	_____	
% Bare Ground in Herb Stratum <u>2</u>	% Cover of Biotic Crust			
Remarks: Overflow area from stockpond.				

**POWERTECH (USA) INC.****SOIL**

Sampling Point W36

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	10YR 4/1	70	10YR 5/8	30	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐**Remarks:****HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

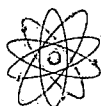
<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes ☒ No ☐ Depth (inches): 4
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Soil is moist, but not saturated.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W37
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 34, T6S R1E
 Landform (hillslope, terrace, etc.) Outfall Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: Open water
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____ No <u>X</u>	Is the Sampled Area Within a Wetland Yes _____ No <u>X</u>
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R6 P6 - P10 Panoramic east to west Approximately 30 feet across Previously NWI mapped as PUBGx		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>25</u> x1= <u>25</u> FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species <u>75</u> x4= <u>300</u> UPL species _____ x5= _____ Column Totals: <u>100</u> (A) <u>325</u> (B) Prevalence Index = B/A = <u>3.25</u>
Total Cover: _____				
Sapling/Shrub Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators _____ Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Total Cover: _____				
Herb Stratum				
1. <u>Typha latifolia</u>	<u>25</u>	<u>X</u>	<u>OBL</u>	
2. <u>Cirsium arvense</u>	<u>75</u>	<u>X</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover: <u>100</u>				
Woody Vine Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum		% Cover of Biotic Crust		

Remarks:
 Cattails dominate on water edge. *Cirsium arvense* dominate from water edge to 3 feet out. Rabbitbrush on upland bank.



POWERTECH (USA) Inc.

SOIL

Sampling Point W37

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features			Texture	Remarks
			Color (moist)	%	Type ¹		
0-6	5Y 5/3	100				SCL	Fibrous root channel

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes _____ No X

Remarks:

Soils likely hydric where cattails are- across unavailable due to steep drop in to pit
Soils are moist not saturated.

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)	<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Water Stained Leaves (B9)		<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

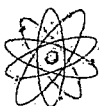
Surface Water Present? Yes X No _____ Depth (inches): _____
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Soil is moist, but not saturated.
Duck swimming in pond



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

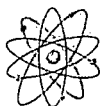
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W38
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 2, T7S, R1E
 Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: PUS
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____	Is the Sampled Area Within a Wetland	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____		Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____					
Remarks: R6 P13: East R6 P14: North 300-500 feet across and 80 or 81 feet long									

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. <u>Populus deltoides</u>	<u>100</u>	<u>X</u>	<u>FAC</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Total Cover:	<u>100</u>			
Sapling/Shrub Stratum				
1. _____	_____	_____	_____	Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Total Cover:	_____			
Herb Stratum				
1. <u>Juncus balticus</u>	<u>50</u>	<u>X</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators <u>X</u> Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
2. <u>Distichlis stricta</u>	<u>50</u>	<u>X</u>	<u>FACW</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover:	<u>100</u>			
Woody Vine Stratum				
1. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover:	_____			
% Bare Ground in Herb Stratum		% Cover of Biotic Crust		
Remarks:				

**POWERTECH (USA) INC.****SOIL**

Sampling Point W38

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-2	7.5YR 3/2	60	7.5YR 5/8	40	C	M	C	Lots of cow prints in area

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)	

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐**Remarks:**Soils likely hydric where cattails are- across unavailable due to steep drop in to pit
Soils are moist not saturated.**HYDROLOGY****Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:Surface Water Present? Yes ☐ No ☒ Depth (inches): _____
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

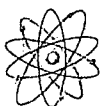
Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W39
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression w/ manmade berm Local relief (concave, convex, none): Concave Slope (%): 0
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: PUS
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R6 P16: of depression R6 P17: of drainage to East Waypoint 83, <i>Hordeum jubatum</i> depression with like soils as W39. R6 P15 Down the drainage there is HORJUB on banks and in bottom with same soil and hydrology		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B) Prevalence Index Worksheet: Total % Cover of: _____ Multiply by: _____ OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: (A) _____ (B) _____ Prevalence Index = B/A = _____ Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Total Cover: _____				
Sapling/Shrub Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
Total Cover: _____				
Herb Stratum				
1. <i>Hordeum jubatum</i>	95	X	FACW	
2. <i>Melilotus officinalis</i>	5		FACU-	
3. <i>Descurainia pinnata</i>	5		NI	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover: <u>100</u>				
Woody Vine Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum		% Cover of Biotic Crust		
Remarks: _____				



POWERTECH (USA) INC.

SOIL

Sampling Point W39

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Redox Features Type ¹	Loc ²	Texture	Remarks
0-6	5YR 4/1	55	2.5YR 4/6	45	C	M, RC	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input checked="" type="checkbox"/> Surface Soil Cracks (B6)
<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

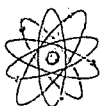
Field Observations:

Surface Water Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	_____
(includes capillary fringe)				

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W40
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 1, T7S, R1E
Landform (hillslope, terrace, etc.): Pond Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R6 P18: Pond				
Is the Sampled Area Within a Wetland		Yes	<u>X</u>	No _____

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		

Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		

Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Spartina pectinata</u>	<u>100</u>	<u>X</u>	<u>FACW</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		

Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		

% Bare Ground in Herb Stratum	% Cover of Biotic Crust
Remarks:	

Dominance Test Worksheet:

Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators

X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain) _____

¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____



POWERTECH (USA) INC.

SOIL

Sampling Point W40

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-11	2.5Y 5/2	65	Gley1 5/N	15	D	RC	SiC	
			10YR 5/8	20	C	M		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

Soil is moist but not saturated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

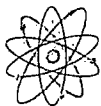
Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 3
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W41
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 1, T7S, R1E
 Landform (hillslope, terrace, etc.): Mine pit Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: PUB
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present	Yes _____ No <u>X</u>	

Remarks:

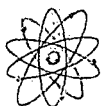
R6 P19: Wetland
 R6 P20: General area
 Wetland has about a 20' circumference. This area may be a problematic wetland as some of the vegetation was dead.

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet:
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index Worksheet:
Total Cover: _____	_____	_____	_____	
Sapling/Shrub Stratum				OBL species _____ x1= _____ FACW species _____ x2= _____ FAC species _____ x3= _____ FACU species _____ x4= _____ UPL species _____ x5= _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	X Dominance Test is > 50% _____ Prevalence Index is ≤ 3.0 ¹ _____ Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation (Explain)
5. _____	_____	_____	_____	
Herb Stratum				¹ Indicators of hydric soils and wetland hydrology must be present
1. <u>Typha latifolia</u>	<u>20</u>	<u>X</u>	<u>OBL</u>	
2. <u>Grindelia squarrosa</u>	<u>15</u>	_____	<u>UPL</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
3. <u>Symphotrichum ericoides</u>	<u>15</u>	_____	<u>FACU</u>	
4. <u>Distichlis stricta</u>	<u>50</u>	<u>X</u>	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover: <u>100</u>	_____	_____	_____	
Woody Vine Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____	_____	_____	_____	
% Bare Ground in Herb Stratum	_____	% Cover of Biotic Crust	_____	

Remarks:

Grindelia squarrosa, Symphotrichum ericoides, and rabbit brush are encroaching into the depression.

**POWERTECH (USA) INC.****SOIL**

Sampling Point W41

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-10	Gley1 5/10Y	95	10YR 6/8	5	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input checked="" type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**

Type: _____

Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐**Remarks:**

Soil is moist but not saturated.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

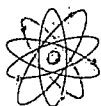
Surface Water Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Water Table Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
Saturation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Depth (inches): _____
(includes capillary fringe)		

Wetland Hydrology Present? Yes ☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:

Other pits within the area are filled with water.



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
 Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W42
 Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 1, T7S, R1E
 Landform (hillslope, terrace, etc.) Mine Pit Local relief (concave, convex, none): Concave Slope (%): 1
 Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
 Soil Map Unit Name: _____ NWI Classification: PUB
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes <u>X</u> No _____	Is the Sampled Area Within a Wetland Yes <u>X</u> No _____
Hydric Soil Present?	Yes _____ No <u>X</u>	
Wetland Hydrology Present	Yes <u>X</u> No _____	
Remarks: R6 P22- 24: Panoramic west to east.		

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
Total Cover: _____				Hydrophytic Vegetation Indicators <input checked="" type="checkbox"/> Dominance Test is > 50% <input type="checkbox"/> Prevalence Index is ≤ 3.0 ¹ <input type="checkbox"/> Morphological Adaptations ¹ (Providing supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation (Explain) ¹ Indicators of hydric soils and wetland hydrology must be present
Sapling/Shrub Stratum				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
5. _____	_____	_____	_____	
Total Cover: _____				
Herb Stratum				
1. <u>Spartina pectinata</u>	40	X	FACW	
2. <u>Distichlis stricta</u>	60	X	FACW	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
Total Cover: <u>100</u>				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum		% Cover of Biotic Crust		Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Remarks: Little bluestem dominates the upper banks.				



POWERTECH (USA) INC.

SOIL

Sampling Point W42

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-6	10YR 5/1	45	Gley1 4/N	5	D		SC	
			10YR 5/6	50	C			

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

Indicators for Problematic Hydric Soils³:

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes _____ No X

Remarks:

Soil is moist but not saturated.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

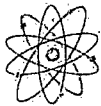
Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): 6
Water Table Present? Yes _____ No X Depth (inches): _____
Saturation Present? Yes _____ No X Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W43
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 36, T6S, R1E (Outside of Project Boundary)
Landform (hillslope, terrace, etc.) Depression, ponded area due to berm Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

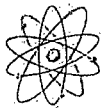
Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	_____	No	<u>X</u>
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R7 P15: West R7 P17: East of pond R7 P16: Middle Cattle grazed here. On the other side of the berm there are <i>Pinus ponderosa</i> .				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover:	_____		
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover:	_____		
Herb Stratum			
1. <u>Juncus balticus</u>	<u>60</u>	<u>X</u>	<u>FACW</u>
2. <u>Typha latifolia</u>	<u>40</u>	<u>X</u>	<u>OBL</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover:	<u>100</u>		
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover:	_____		
% Bare Ground in Herb Stratum	<u>90</u>	% Cover of Biotic Crust	_____

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____
Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
_____ Prevalence Index is ≤ 3.0¹
_____ Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
_____ Problematic Hydrophytic Vegetation (Explain)
¹Indicators of hydric soils and wetland hydrology must be present
Hydrophytic Vegetation Present? Yes X No _____

Remarks: Moss is present. *Distichlis stricta* present in the middle of the pond.

**POWERTech (USA) Inc.****SOIL**

Sampling Point W43

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-4	10YR 5/3	75	Gley1 3/N	20	D	M	C	
			5YR 5/8	5	C	M	C	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes _____ No X**Remarks:**

Soil is moist but not saturated.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

Surface Water Present?	Yes	<u>X</u>	No	_____	Depth (inches):	<u>4</u>
Water Table Present?	Yes	<u>X</u>	No	_____	Depth (inches):	<u>3</u>
Saturation Present?	Yes	<u>X</u>	No	_____	Depth (inches):	<u>3</u>

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) Inc.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W44
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 2, T7S, R1E
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Is the Sampled Area Within a Wetland Yes <u>X</u> No _____				
Remarks: R7 P24: Northwest R8 P1: North R8 P2: East				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
Herb Stratum			
1. <u>Juncus balticus</u>	<u>85</u>	<u>X</u>	<u>FACW</u>
2. <u>Distichlis stricta</u>	<u>15</u>	_____	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: _____	<u>100</u>	_____	_____
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____	_____	_____	_____
% Bare Ground in Herb Stratum	<u>40</u>	% Cover of Biotic Crust	_____
Remarks: _____			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain) _____
¹Indicators of hydric soils and wetland hydrology must be present

Hydrophytic Vegetation Present? Yes X No _____

**POWERTECH (USA) INC.**

SOIL

Sampling Point W44

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features				Texture	Remarks
			Color (moist)	%	Type ¹	Loc ²		
0-6	2.5Y 5/2	68	7.5YR 5/8	30	C	M	SiC	
			Gley1 3/N	2	D	M	SiC	
6-8	10YR 3/1	98	7.5YR 5/8	2	C	M	SiC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)****Indicators for Problematic Hydric Soils³:**

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Coast Prairie Redox (A16) (LRR F, G, H)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) (LRR G)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> High Plains Depressions (F16)
<input type="checkbox"/> Stratified Layers (A5) (LRR F)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> (LRR H outside MLRA 72 & 73)
<input type="checkbox"/> 1 cm Muck (A9) (LRR F, G, H)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input checked="" type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)	<input type="checkbox"/> High Plains Depressions (F16)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR F)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.**Restrictive Layer (if present):**Type: _____
Depth (inches): _____Hydric Soils Present? Yes ☒ No ☐**Remarks:**

Soil is moist, concentrations sparse in the 6-8 inches layer.

HYDROLOGY**Wetland Hydrology Indicators:**

Primary Indicators (any one indicator is sufficient)

<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crusts (B11)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Invertebrates (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Oder (C1)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remark)
<input type="checkbox"/> Iron Deposits (B5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	
<input type="checkbox"/> Water Stained Leaves (B9)	

Secondary Indicators (2 or more required)

<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B8)
<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Frost-Heave Hummocks (C11) (LRR F)
<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Local Soil Survey Data (D8)

Field Observations:

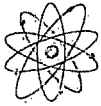
Surface Water Present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Depth (inches):	3
Water Table Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	
Saturation Present?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Depth (inches):	

(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

WETLAND DETERMINATION DATA FORM-Great Plains Region (DRAFT)

Project/Site: Dewey Burdock City/County: Custer County Sampling Date: 9/20/07
Applicant/Owner: Knight Piesold, Powertech State: South Dakota Sampling Point: W45
Investigator(s): C. Robinson and J. Eberly Section, Township, Range: Section 1, T7S, R1E
Landform (hillslope, terrace, etc.) Depression Local relief (concave, convex, none): Concave Slope (%): 1
Subregion (LRP): Black Hills MLRA62 Lat: _____ Long: _____ Datum: NAD 1983, UTM Zone 13
Soil Map Unit Name: _____ NWI Classification: PEM
Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ Significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ Naturally problematic? (If needed, explain any answers in Remarks.)

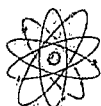
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes	<u>X</u>	No	_____
Hydric Soil Present?	Yes	<u>X</u>	No	_____
Wetland Hydrology Present	Yes	<u>X</u>	No	_____
Remarks: R8 P4: Upstream R8 P5: Downstream Stockwater pond (20' wide by 50' long)				

VEGETATION

Tree Stratum (Use scientific names)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
Total Cover: _____			
Sapling/Shrub Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
Total Cover: _____			
Herb Stratum			
1. <u>Mimulus guttatus</u>	<u>70</u>	<u>X</u>	<u>OBL</u>
2. <u>Distichlis stricta</u>	<u>30</u>	<u>X</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Total Cover: <u>100</u>			
Woody Vine Stratum			
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
Total Cover: _____			
% Bare Ground in Herb Stratum		% Cover of Biotic Crust	
Remarks: _____			

Dominance Test Worksheet:
Number of Dominant Species That are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
Prevalence Index Worksheet:
Total % Cover of: _____ Multiply by: _____
OBL species _____ x1= _____
FACW species _____ x2= _____
FAC species _____ x3= _____
FACU species _____ x4= _____
UPL species _____ x5= _____
Column Totals: _____ (A) _____ (B)
Prevalence Index = B/A = _____
Hydrophytic Vegetation Indicators
X Dominance Test is > 50%
Prevalence Index is ≤ 3.0¹
Morphological Adaptations¹ (Providing supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain) _____
¹Indicators of hydric soils and wetland hydrology must be present
Hydrophytic Vegetation Present? Yes X No _____



POWERTECH (USA) INC.

SOIL

Sampling Point W45

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Color (moist)	%	Redox Features Type ¹	Loc ²	Texture	Remarks
0-8	Gley1 5/10Y	60	7.5Y 5/6	35	C	M, RC	C	
			Gley1 4/N	5	D	M		
8-10	2.5Y 5/4	90	5YR 5/6	10	C	M	SC	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix.

²Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5) (LRR F)
- ☐ 1 cm Muck (A9) (LRR F, G, H)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ 2.5 cm Mucky Peat or Peat (S2) (LFF G, H)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR F)

- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Loamy Mucky Mineral (F1)
- ☒ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☒ Redox Depressions (F8)
- ☐ High Plains Depressions (F16)

Indicators for Problematic Hydric Soils³:

- ☐ 1 cm Muck (A9) (LRR C)
- ☐ Coast Prairie Redox (A16) (LRR F, G, H)
- ☐ Dark Surface (S7) (LRR G)
- ☐ High Plains Depressions (F16)
- ☐ (LRR H outside MLRA 72 & 73)
- ☐ Reduced Vertic (F18)
- ☐ Red Parent Material (TF2)
- ☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soils Present? Yes ☒ No ☐

Remarks:

Soil is moist but not saturated.
Black parent material in 8-10 inch layer.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☒ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water Stained Leaves (B9)

- ☐ Salt Crusts (B11)
- ☐ Aquatic Invertebrates (B13)
- ☐ Hydrogen Sulfide Oder (C1)
- ☐ Dry-Season Water Table (C2)
- ☐ Presence of Reduced Iron (C4)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remark)

Secondary Indicators (2 or more required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surfaces (B8)
- ☐ Drainage Patterns (B10)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Frost-Heave Hummocks (C11) (LRR F)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)
- ☐ Local Soil Survey Data (D8)

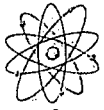
Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): 3-5
Water Table Present? Yes ☐ No ☒ Depth (inches): _____
Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)

Wetland Hydrology Present? Yes ☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspection), if available:

Remarks:



POWERTECH (USA) INC.

APPENDIX 3.5-H

APPROVED JURISDICTIONAL DETERMINATIONS



DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
SOUTH DAKOTA REGULATORY OFFICE
28563 POWERHOUSE ROAD, ROOM 118
PIERRE SD 57501-6174

DM
1/19/09

REPLY TO
ATTENTION OF :

January 14, 2009

South Dakota Regulatory Office
28563 Powerhouse Road, Room 118
Pierre, South Dakota 57501

Powertech (USA) Inc.
ATTN: Mr. Richard Blubaugh
5575 DTC Parkway, Suite 140
Greenwood Village, Colorado 80111

Dear Mr. Blubaugh:

Reference is made to Powertech's November 18, 2008, request for approved jurisdictional determinations (JDs) for sites 1 through 17, located within proposed disturbance areas of the Dewey-Burdock In Situ Uranium Project. The project is located in portions of southern Custer County and northern Fall River Counties, South Dakota.

We have completed Approved JDs, for the requested sites, as well as sites 18 through 20. The Approved JDs (Enclosed) are valid for 5 years from the date of this letter. If you are not in agreement with the JDs, you may request an administrative appeal under Corps of Engineers regulations found at 33 C.F.R. 331. Enclosed you will also find a Notification of Administrative Appeal Options and Process and Request for Appeal form (RFA). Should you decide to submit an RFA form, it must be received by the Corps of Engineers Northwestern Division Office within 60 days from the date of this correspondence (March 15, 2009). If you request to appeal this determination you must submit a completed RFA form to the Northwest Division Office at the following address:

US Army Corps of Engineers
Northwestern Division
Attn: David Gesl
Regulatory Program Manager
PO Box 2870
Portland, OR 97208-2870
(503) 808-3888

It is not necessary to submit a RFA if you do not object to the JD.

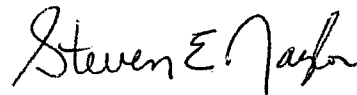
Should your proposed project require work in any of the jurisdictional waterbodies identified in the JDs, prior Department of the Army (DA) authorization may be required and you should contact this office for a permit determination. In addition, should your project plans change or should the project require work in any other waters of the United

States, including wetlands, not previously identified in your August 21, 2008, JD request, you should notify this office and seek additional jurisdictional and permit determinations prior to the commencement of work in these waterbodies.

You can obtain additional information about the Regulatory Program and download forms from our website: <https://www.nwo.usace.army.mil/html/od-rsd/frame.html> .

If you have any questions concerning this determination, please feel free to contact this office at the above Regulatory Office address, or telephone Mr. Matthew Mikulecky at (605) 224-8531 and reference action ID NWO-2008-2206.

Sincerely,



Steven E. Naylor
Regulatory Program Manager,
South Dakota

Enclosures



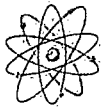
POWERTECH (USA) INC.

**USACOE Approved Jurisdictional Determination of Wetlands at
Dewey-Burdock, Action IS: NOW-2008-2206¹**

Site #	Latitude: Northing (GPS)	Longitude: Westing (GPS)	Description	COE Determination
1	43.50106	104.02757	Upland Swale	Nonjurisdictional
2	43.49590	104.02211	Upland Swale	Nonjurisdictional
3	43.48897	104.02025	Ephemeral Tributary to Beaver Creek	Jurisdictional WOUS
4	43.48654	104.01299	Upland Swale	Nonjurisdictional
5	43.48819	104.01023	Upland Swale	Nonjurisdictional
6	43.46919	103.98704	Upland Swale	Nonjurisdictional
7	43.46591	103.98474	Ephemeral Tributary to Pass Creek	Jurisdictional WOUS
8	43.45801	103.97643	Upland Swale	Nonjurisdictional
9	43.45117	103.98366	Upland Swale	Nonjurisdictional
10	43.47719	103.99297	Pass Creek (NonRPW)	Jurisdictional WOUS
11	43.48869	103.96516	Upland Swale	Nonjurisdictional
12	43.48794	103.96532	Upland Swale	Nonjurisdictional
13	43.45098	103.96838	Upland Swale	Nonjurisdictional
14	43.45080	103.96185	Upland Vegetated Drainage lacking a downstream connection to WOUS	Nonjurisdictional
15	43.47863	103.95662	Upland Swale	Nonjurisdictional
16	43.46359	103.94818	Upland Hillside Gully	Nonjurisdictional
17	NA	NA	Artificial Pond created by diking uplands	Nonjurisdictional
18	NA	NA	Beaver Creek (Perennial RPW)	Jurisdictional WOUS
19	NA	NA	Isolated Wetland	Nonjurisdictional
20	NA	NA	Isolated Wetland	Nonjurisdictional

¹Completion date for Approved Jurisdictional Determination (JD): January 13, 2009

District Office, File Name, and Number: Omaha – Powertech (USA) Inc.- NOW-2008-2206-3-PIE



POWERTECH (USA) INC.

APPENDIX 3.5-I

LAB RESULTS – ENERGY LABORATORIES, INC.



ANALYTICAL SUMMARY REPORT

June 19, 2008

Jones and Stokes
1901 Energy Ct Ste 115
Gillette, WY 82718

Workorder No.: C08040910

Project Name: Dewey-Burdock 010996.07

Fish identifications corrected as
marked.

A. Wones - ICF Jones & Stokes


Energy Laboratories, Inc. received the following 15 samples from Jones and Stokes on 4/18/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C08040910-001	BVC01-Green Sunfish	04/16/08 00:00	04/18/08	Fish	Uranium, Total Digestion For RadioChemistry Lead 210 Polonium 210 Radium 226 Thorium, Isotopic Services Provided by Lab
C08040910-002	BVC01-Plains Killfish	04/16/08 00:00	04/18/08	Fish	Same As Above
C08040910-003	BVC01-Longnose Dace	04/16/08 00:00	04/18/08	Fish	Same As Above
C08040910-004	BVC01- Emerald Shiner	04/16/08 00:00	04/18/08	Fish	Same As Above Fathead Minnow
C08040910-005	BVC04-Plains Killfish	04/16/08 00:00	04/18/08	Fish	Same As Above
C08040910-006	BVC04- Quill Back	04/16/08 00:00	04/18/08	Fish	Same As Above River Carpsucker
C08040910-007	BVC04-Green Sunfish	04/16/08 00:00	04/18/08	Fish	Same As Above
C08040910-008	BVC04- Emerald Shiner	04/16/08 00:00	04/18/08	Fish	Same As Above Fathead Minnow
C08040910-009	BVC04-Channel Catfish	04/16/08 00:00	04/18/08	Fish	Same As Above
C08040910-010	CHR05- Quill Back	04/15/08 00:00	04/18/08	Fish	Same As Above River Carpsucker
C08040910-011	CHR05-Green Sunfish	04/15/08 00:00	04/18/08	Fish	Same As Above
C08040910-012	CHR05- Mottled Sucker	04/15/08 00:00	04/18/08	Fish	Same As Above Shorthead Redhorse Sucker
C08040910-013	CHR05- Fine Scale Dace	04/15/08 00:00	04/18/08	Fish	Same As Above Creek Chub
C08040910-014	CHR05-Plains Killfish	04/15/08 00:00	04/18/08	Fish	Same As Above
C08040910-015	CHR05- Shiner	04/15/08 00:00	04/18/08	Fish	Same As Above Sand Shiner

As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:


STEVE CARLSTON



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-001
Client Sample ID: BVC01-Green Sunfish

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg		0.02		SW6020	05/11/08 01:09 / ts
Uranium, Activity	ND	uCi/kg	D	2.0E-05		SW6020	05/11/08 01:09 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	0.0E+00	uCi/kg	U	5.0E-05		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	6.0E-05	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	U	5.0E-05		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	2.0E-04	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	0.0E+00	uCi/kg	U	1.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	2.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	3.0E-04	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 precision (±)	9.0E-05	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 MDC	1.0E-04	uCi/kg				E903.0	05/15/08 15:31 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-002
Client Sample ID: BVC01-Plains Killfish

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.3		SW6020	05/11/08 01:18 / ts
Uranium, Activity	ND	uCi/kg	D	2.0E-04		SW6020	05/11/08 01:18 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	0.0E+00	uCi/kg	UD	5.0E-04		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	8.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	2.0E-02	uCi/kg	D	5.0E-04		E909.0M	06/09/08 08:30 / dm
Lead 210 precision (±)	2.0E-02	uCi/kg				E909.0M	06/09/08 08:30 / dm
Thorium 230	2.0E-04	uCi/kg	D	1.0E-04		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	3.0E-04	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-4.0E-04	uCi/kg	U			E903.0	05/16/08 15:11 / trs
Radium 226 precision (±)	4.0E-04	uCi/kg				E903.0	05/16/08 15:11 / trs
Radium 226 MDC	9.0E-04	uCi/kg				E903.0	05/16/08 15:11 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-003
Client Sample ID: BVC01-Longnose Dace

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.9		SW6020	05/11/08 01:22 / ts
Uranium, Activity	ND	uCi/kg	D	6.0E-04		SW6020	05/11/08 01:22 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	2.0E-03	uCi/kg	D	1.0E-03		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	3.0E-03	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	1.0E-03		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	7.0E-03	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	1.0E-03	uCi/kg	D	3.0E-04		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	1.0E-03	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-2.0E-03	uCi/kg	U			E903.0	05/16/08 15:11 / trs
Radium 226 precision (±)	1.0E-03	uCi/kg				E903.0	05/16/08 15:11 / trs
Radium 226 MDC	3.0E-03	uCi/kg				E903.0	05/16/08 15:11 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-004
Client Sample ID: BVC01-Emerald Shiner

Fathead Minnow

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.1		SW6020	05/11/08 01:42 / ts
Uranium, Activity	ND	uCi/kg	D	1.0E-04		SW6020	05/11/08 01:42 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	4.0E-04	uCi/kg	D	2.0E-04		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	5.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	2.0E-04		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	1.0E-03	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	0.0E+00	uCi/kg	UD	5.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	7.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-1.0E-04	uCi/kg	U			E903.0	05/16/08 15:11 / trs
Radium 226 precision (±)	2.0E-04	uCi/kg				E903.0	05/16/08 15:11 / trs
Radium 226 MDC	5.0E-04	uCi/kg				E903.0	05/16/08 15:11 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-005
Client Sample ID: BVC04-Plains Killfish

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.8		SW6020	05/11/08 01:46 / ts
Uranium, Activity	ND	uCi/kg	D	5.0E-04		SW6020	05/11/08 01:46 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	0.0E+00	uCi/kg	U	1.0E-03		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	1.0E-03	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	1.0E-03		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	8.0E-03	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	0.0E+00	uCi/kg	UD	3.0E-04		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	4.0E-04	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-1.0E-03	uCi/kg	U			E903.0	05/15/08 15:31 / trs
Radium 226 precision (±)	1.0E-03	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 MDC	2.0E-03	uCi/kg				E903.0	05/15/08 15:31 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-006
Client Sample ID: BVC04-Quill-Back

River Carpsucker

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.03		SW6020	05/11/08 01:51 / ts
Uranium, Activity	ND	uCi/kg	D	2.0E-05		SW6020	05/11/08 01:51 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	4.0E-04	uCi/kg		5.0E-05		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	2.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	U	5.0E-05		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	3.0E-04	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	2.0E-05	uCi/kg		1.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	3.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-2.0E-05	uCi/kg	U			E903.0	05/15/08 15:31 / trs
Radium 226 precision (±)	6.0E-05	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 MDC	1.0E-04	uCi/kg				E903.0	05/15/08 15:31 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-007
Client Sample ID: BVC04-Green Sunfish

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.3		SW6020	05/11/08 01:55 / ts
Uranium, Activity	ND	uCi/kg	D	2.0E-04		SW6020	05/11/08 01:55 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	6.0E-04	uCi/kg	D	4.0E-04		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	7.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	4.0E-04		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	3.0E-03	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	8.0E-04	uCi/kg	D	9.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	6.0E-04	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-3.0E-04	uCi/kg	U			E903.0	05/15/08 15:31 / trs
Radium 226 precision (±)	4.0E-04	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 MDC	9.0E-04	uCi/kg				E903.0	05/15/08 15:31 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-008
Client Sample ID: BVC04-Emerald Shiner

Fathead Minnow

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg		0.02		SW6020	05/11/08 01:59 / ts
Uranium, Activity	ND	uCi/kg		1.0E-05		SW6020	05/11/08 01:59 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	0.0E+00	uCi/kg	U	5.0E-05		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	2.0E-05	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	U	5.0E-05		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	9.0E-05	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	1.0E-05	uCi/kg		1.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	1.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	1.0E-04	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 precision (±)	3.0E-05	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 MDC	3.0E-05	uCi/kg				E903.0	05/15/08 15:31 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-009
Client Sample ID: BVC04-Channel Catfish

Report Date: 06/19/08
Collection Date: 04/16/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.05	mg/kg	D	0.05		SW6020	05/11/08 02:03 / ts
Uranium, Activity	3.0E-05	uCi/kg	D	3.0E-05		SW6020	05/11/08 02:03 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	9.0E-04	uCi/kg	D	8.0E-05		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	3.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	8.0E-05		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	5.0E-04	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	2.0E-05	uCi/kg	D	2.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	3.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-8.0E-05	uCi/kg	U			E903.0	05/15/08 15:31 / trs
Radium 226 precision (±)	6.0E-05	uCi/kg				E903.0	05/15/08 15:31 / trs
Radium 226 MDC	1.0E-04	uCi/kg				E903.0	05/15/08 15:31 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-010
Client Sample ID: CHR05-Quill Back

River Carpsucker

Report Date: 06/19/08
Collection Date: 04/15/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.04		SW6020	05/11/08 02:07 / ts
Uranium, Activity	ND	uCi/kg	D	3.0E-05		SW6020	05/11/08 02:07 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	8.0E-04	uCi/kg	D	7.0E-05		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	3.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	7.0E-05		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	4.0E-04	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	0.0E+00	uCi/kg	U	1.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	5.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-9.0E-05	uCi/kg	U			E903.0	05/15/08 17:06 / trs
Radium 226 precision (±)	5.0E-05	uCi/kg				E903.0	05/15/08 17:06 / trs
Radium 226 MDC	1.0E-04	uCi/kg				E903.0	05/15/08 17:06 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-011
Client Sample ID: CHR05-Green Sunfish

Report Date: 06/19/08
Collection Date: 04/15/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.04		SW6020	05/11/08 02:11 / ts
Uranium, Activity	ND	uCi/kg	D	3.0E-05		SW6020	05/11/08 02:11 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	8.0E-05	uCi/kg	UD	7.0E-05		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	1.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	7.0E-05		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	4.0E-04	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	1.0E-05	uCi/kg	U	1.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	5.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-6.0E-05	uCi/kg	U			E903.0	05/15/08 17:06 / trs
Radium 226 precision (±)	7.0E-05	uCi/kg				E903.0	05/15/08 17:06 / trs
Radium 226 MDC	1.0E-04	uCi/kg				E903.0	05/15/08 17:06 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-012
Client Sample ID: CHR05-Mottled Sucker

Report Date: 06/19/08
Collection Date: 04/15/08
Date Received: 04/18/08
Matrix: Fish

Shorthead Redhorse Sucker

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg		0.02		SW6020	05/11/08 02:15 / ts
Uranium, Activity	ND	uCi/kg		1.0E-05		SW6020	05/11/08 02:15 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	2.0E-04	uCi/kg		5.0E-05		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	1.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	U	5.0E-05		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	1.0E-04	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	2.0E-05	uCi/kg		1.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	2.0E-05	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-1.0E-05	uCi/kg	U			E903.0	05/16/08 15:11 / trs
Radium 226 precision (±)	2.0E-05	uCi/kg				E903.0	05/16/08 15:11 / trs
Radium 226 MDC	3.0E-05	uCi/kg				E903.0	05/16/08 15:11 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



ENERGY LABORATORIES, INC. • 2393 Salt Creek Highway (82601) • P.O. Box 3258 • Casper, WY 82602
Toll Free 888.235.0515 • 307.235.0515 • Fax 307.234.1639 • casper@energylab.com • www.energylab.com

LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-013
Client Sample ID: CHR05-Fine Scale Dace

Creek Chub

Report Date: 06/19/08
Collection Date: 04/15/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.2		SW6020	05/11/08 02:36 / ts
Uranium, Activity	ND	uCi/kg	D	1.0E-04		SW6020	05/11/08 02:36 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	0.0E+00	uCi/kg	UD	3.0E-04		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	3.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	3.0E-04		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	2.0E-03	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	0.0E+00	uCi/kg	UD	7.0E-05		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	2.0E-04	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-2.0E-04	uCi/kg	U			E903.0	05/16/08 15:11 / trs
Radium 226 precision (±)	3.0E-04	uCi/kg				E903.0	05/16/08 15:11 / trs
Radium 226 MDC	6.0E-04	uCi/kg				E903.0	05/16/08 15:11 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



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LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-014
Client Sample ID: CHR05-Plains Killfish

Report Date: 06/19/08
Collection Date: 04/15/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.4		SW6020	05/11/08 02:40 / ts
Uranium, Activity	ND	uCi/kg	D	3.0E-04		SW6020	05/11/08 02:40 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	0.0E+00	uCi/kg	UD	6.0E-04		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	1.0E-03	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	6.0E-04		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	3.0E-03	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	1.0E-03	uCi/kg	D	1.0E-04		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	8.0E-04	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-5.0E-04	uCi/kg	U			E903.0	05/16/08 15:11 / trs
Radium 226 precision (±)	5.0E-04	uCi/kg				E903.0	05/16/08 15:11 / trs
Radium 226 MDC	1.0E-03	uCi/kg				E903.0	05/16/08 15:11 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07
Lab ID: C08040910-015
Client Sample ID: CHR05-Shiner

Sand Shiner

Report Date: 06/19/08
Collection Date: 04/15/08
Date Received: 04/18/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	ND	mg/kg	D	0.4		SW6020	05/11/08 02:44 / ts
Uranium, Activity	ND	uCi/kg	D	3.0E-04		SW6020	05/11/08 02:44 / ts
RADIONUCLIDES - TOTAL							
Polonium 210	0.0E+00	uCi/kg	UD	6.0E-04		RMO-3008	06/02/08 11:15 / plj
Polonium 210 precision (±)	5.0E-04	uCi/kg				RMO-3008	06/02/08 11:15 / plj
Lead 210	0.0E+00	uCi/kg	UD	6.0E-04		E909.0M	05/21/08 09:00 / dm
Lead 210 precision (±)	3.0E-03	uCi/kg				E909.0M	05/21/08 09:00 / dm
Thorium 230	1.0E-03	uCi/kg	D	1.0E-04		E907.0	05/09/08 14:00 / dmf
Thorium 230 precision (±)	7.0E-04	uCi/kg				E907.0	05/09/08 14:00 / dmf
Radium 226	-3.0E-04	uCi/kg	U			E903.0	05/15/08 17:06 / trs
Radium 226 precision (±)	6.0E-04	uCi/kg				E903.0	05/15/08 17:06 / trs
Radium 226 MDC	1.0E-03	uCi/kg				E903.0	05/15/08 17:06 / trs

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
U - Not detected at minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix interference.



QA/QC Summary Report

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07

Report Date: 06/19/08
Work Order: C08040910

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0 Batch: 18521									
Sample ID: C08041154-001AMS Radium 226	Sample Matrix Spike 0.14pCi/L			84	70	130			05/15/08 17:06
Run: BERTHOLD 770_080508E									
Sample ID: C08041154-001AMSD Radium 226	Sample Matrix Spike Duplicate 0.14pCi/L			87	70	130	0.4	23.7	05/15/08 17:06
Run: BERTHOLD 770_080508E									
Sample ID: MB-18521 Radium 226	Method Blank -0.7 pCi/L								05/16/08 15:11 U
Run: BERTHOLD 770_080508E									
Sample ID: LCS-18521 Radium 226	Laboratory Control Sample 15 pCi/L			97	70	130			05/16/08 08:10
Run: BERTHOLD 770_080508E									
Method: E907.0 Batch: 18521									
Sample ID: C08041154-001AMS Thorium 230	Sample Matrix Spike 0.23 pCi/g-dry		0.10	113	70	130			05/09/08 14:00
Run: EGG-ORTEC_080509A									
Sample ID: C08041154-001AMSD Thorium 230	Sample Matrix Spike Duplicate 0.15 pCi/g-dry		0.10	81	70	130	41	30	05/09/08 14:00 R
- The RPD for the MSD is high. The individual spike recoveries are within range, the MB is acceptable, and the LCS is within range, therefore the batch is approved.									
Sample ID: LCS-18521 Thorium 230	Laboratory Control Sample 0.0431 pCi/g-dry		0.10	93	70	130			05/09/08 14:00
Run: EGG-ORTEC_080509A									
Sample ID: MB-18521 Thorium 230	Method Blank -0.0006 pCi/g-dry								05/09/08 14:00
Run: EGG-ORTEC_080509A									
Method: E909.0M Batch: 18521									
Sample ID: C08041154-001AMS Lead 210	Sample Matrix Spike 3.5 pCi/g-dry		0.10	130	70	130			05/21/08 09:00
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the MSD are acceptable the batch is approved.									
Run: PACKARD 3100TR_080521A									
Sample ID: C08041154-001AMSD Lead 210	Sample Matrix Spike Duplicate 2.5 pCi/g-dry		0.10	91	70	130	36	30	05/21/08 09:00 R
Run: PACKARD 3100TR_080521A									
Sample ID: MB-R101975 Lead 210	Method Blank ND pCi/g-dry								05/21/08 09:00
Run: PACKARD 3100TR_080521A									
Sample ID: LCS-R101975 Lead 210	Laboratory Control Sample 0.0528 pCi/g-dry		0.10	76	70	130			05/21/08 09:00
Run: PACKARD 3100TR_080521A									

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



QA/QC Summary Report

Client: Jones and Stokes
Project: Dewey-Burdock 010996.07

Report Date: 06/19/08
Work Order: C08040910

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E909.0M Batch: R102568									
Sample ID: C08050798-003AMS	Sample Matrix Spike					Run: PACKARD 3100TR_080609A		06/09/08 08:30	
Lead 210	648	pCi/Filter		48	70	130			S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the MSD are acceptable the batch is approved.									
Sample ID: C08050798-003AMSD	Sample Matrix Spike Duplicate					Run: PACKARD 3100TR_080609A		06/09/08 08:30	
Lead 210	1350	pCi/Filter		108	70	130	70	30	R
Sample ID: MB-R102568	Method Blank					Run: PACKARD 3100TR_080609A		06/09/08 08:30	
Lead 210	10	pCi/L							
Sample ID: LCS-R102568	Laboratory Control Sample					Run: PACKARD 3100TR_080609A		06/09/08 08:30	
Lead 210	110	pCi/L		84	70	130			
Method: RMO-3008 Batch: 18521									
Sample ID: C08040910-015AMS	Sample Matrix Spike					Run: EGG-ORTEC_080602A		06/02/08 11:15	
Polonium 210	105	pCi/g-dry	0.10	96	70	130			
Sample ID: C08040910-015AMSD	Sample Matrix Spike Duplicate					Run: EGG-ORTEC_080602A		06/02/08 11:15	
Polonium 210	117	pCi/g-dry	0.10	107	70	130	11	30	
Sample ID: LCS-18521	Laboratory Control Sample					Run: EGG-ORTEC_080602A		06/02/08 11:15	
Polonium 210	79.2	pCi/g-dry	0.10	91	70	130			
Sample ID: MB-18521	Method Blank					Run: EGG-ORTEC_080602A		06/02/08 11:15	
Polonium 210	-0.3	pCi/g-dry							
Method: SW6020 Batch: 18521									
Sample ID: MB-18521	Method Blank					Run: ICPMS2-C_080510B		05/11/08 01:01	
Uranium	8E-05	mg/kg-dry	6E-05						
Sample ID: LCS1-18521	Laboratory Control Sample					Run: ICPMS2-C_080510B		05/11/08 01:05	
Uranium	0.515	mg/kg-dry	0.015	103	75	125			
Sample ID: C08040910-015AMS	Sample Matrix Spike					Run: ICPMS2-C_080510B		05/11/08 02:48	
Uranium	316	mg/kg-dry	0.38	100	75	125			
Sample ID: C08040910-015AMSD	Sample Matrix Spike Duplicate					Run: ICPMS2-C_080510B		05/11/08 02:52	
Uranium	316	mg/kg-dry	0.38	101	75	125	0.2	20	

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.

ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.



Date: 19-Jun-08

CLIENT: Jones and Stokes
Project: Dewey-Burdock 010996.07
Sample Delivery Group: C08040910

CASE NARRATIVE

THIS IS THE FINAL PAGE OF THE LABORATORY ANALYTICAL REPORT

ORIGINAL SAMPLE SUBMITTAL(S)

All original sample submittals have been returned with the data package.

SAMPLE TEMPERATURE COMPLIANCE: 4°C (±2°C)

Temperature of samples received may not be considered properly preserved by accepted standards. Samples that are hand delivered immediately after collection shall be considered acceptable if there is evidence that the chilling process has begun.

GROSS ALPHA ANALYSIS

Method 900.0 for gross alpha and gross beta is intended as a drinking water method for low TDS waters. Data provided by this method for non potable waters should be viewed as inconsistent.

RADON IN AIR ANALYSIS

The desired exposure time is 48 hours (2 days). The time delay in returning the canister to the laboratory for processing should be as short as possible to avoid excessive decay. Maximum recommended delay between end of exposure to beginning of counting should not exceed 8 days.

SOIL/SOLID SAMPLES

All samples reported on an as received basis unless otherwise indicated.

ATRAZINE, SIMAZINE AND PCB ANALYSIS USING EPA 505

Data for Atrazine and Simazine are reported from EPA 525.2, not from EPA 505. Data reported by ELI using EPA method 505 reflects the results for seven individual Aroclors. When the results for all seven are ND (not detected), the sample meets EPA compliance criteria for PCB monitoring.

SUBCONTRACTING ANALYSIS

Subcontracting of sample analyses to an outside laboratory may be required. If so, ENERGY LABORATORIES will utilize its branch laboratories or qualified contract laboratories for this service. Any such laboratories will be indicated within the Laboratory Analytical Report.

BRANCH LABORATORY LOCATIONS

eli-b - Energy Laboratories, Inc. - Billings, MT
eli-g - Energy Laboratories, Inc. - Gillette, WY
eli-h - Energy Laboratories, Inc. - Helena, MT
eli-r - Energy Laboratories, Inc. - Rapid City, SD
eli-t - Energy Laboratories, Inc. - College Station, TX

CERTIFICATIONS:

USEPA: WY00002; FL-DOH NELAC: E87641; Arizona: AZ0699; California: 02118CA
Oregon: WY200001; Utah: 3072350515; Virginia: 00057; Washington: C1903

ISO 17025 DISCLAIMER:

The results of this Analytical Report relate only to the items submitted for analysis.

ENERGY LABORATORIES, INC. - CASPER, WY certifies that certain method selections contained in this report meet requirements as set forth by the above accrediting authorities. Some results requested by the client may not be covered under these certifications. All analysis data to be submitted for regulatory enforcement should be certified in the sample state of origin. Please verify ELI's certification coverage by visiting www.energylab.com

ELI appreciates the opportunity to provide you with this analytical service. For additional information and services visit our web page www.energylab.com.



ANALYTICAL SUMMARY REPORT

August 22, 2008

Jones and Stokes
1901 Energy Ct Ste 115
Gillette, WY 82718

Workorder No.: C08070647

Project Name: Dewey Burdock 00996.07

Sample ID species corrected.
A. Wones ICF Jones &
Stokes

Energy Laboratories, Inc. received the following 17 samples from Jones and Stokes on 7/15/2008 for analysis.

Sample ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
C08070647-001	BVC01-ICF JSA-FHM	07/10/08 00:00	07/15/08	Fish	Uranium, Total Digestion For RadioChemistry Lead 210 Polonium 210 Radium 226 Thorium, Isotopic
C08070647-002	BVC01-Plains Top Minow	07/10/08 00:00	07/15/08	Fish	Same As Above
C08070647-003	BVC01-Plains Kill Fish	07/10/08 00:00	07/15/08	Fish	Same As Above
C08070647-004	BVC01-Common Shiner	07/10/08 00:00	07/15/08	Fish	Same As Above Sand Shiner
C08070647-005	BVC01-ICF JSA- CAP Carp	07/10/08 00:00	07/15/08	Fish	Same As Above
C08070647-006	BVC04-Common Shiner	07/10/08 00:00	07/15/08	Fish	Same As Above Sand Shiner
C08070647-007	BVC04-Short Head Red Horse Sucker	07/10/08 00:00	07/15/08	Fish	Same As Above
C08070647-008	BVC04-Fathead Minow	07/10/08 00:00	07/15/08	Fish	Same As Above
C08070647-009	BVC04-PLK	07/10/08 00:00	07/15/08	Fish	Same As Above
C08070647-010	BVC04-Carp (Cap)	07/10/08 00:00	07/15/08	Fish	Same As Above
C08070647-011	CHR04-WSM	07/09/08 00:00	07/15/08	Fish	Same As Above Sand Shiner
C08070647-012	CHR04-FHM	07/09/08 00:00	07/15/08	Fish	Same As Above
C08070647-013	CHR04-PLK	07/09/08 00:00	07/15/08	Fish	Same As Above
C08070647-014	CHR04-SRS	07/09/08 00:00	07/15/08	Fish	Same As Above
C08070647-015	CHR04-Carp	07/09/08 00:00	07/15/08	Fish	Same As Above
C08070647-016	CHR04-CHC	07/09/08 00:00	07/15/08	Fish	Same As Above
C08070647-017	CHR04-RCS	07/09/08 00:00	07/15/08	Fish	Composite of two or more samples Uranium, Total Digestion For RadioChemistry Lead 210 Polonium 210 Radium 226 Thorium, Isotopic



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As appropriate, any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative.

If you have any questions regarding these tests results, please call.

Report Approved By:

A handwritten signature in black ink, appearing to read "Steve Carlston", written over a horizontal line.

STEVE CARLSTON



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-001
Client Sample ID: BVC01-ICF JSA-FHM

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.026	mg/kg-dry		0.0050		SW6020	07/27/08 05:51 / sml
Uranium, Activity	1.8E-05	uCi/kg		3.4E-06		SW6020	07/27/08 05:51 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	4.0E-04	uCi/kg		9.3E-05		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	2.3E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	1.4E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	3.6E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	6.0E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.2E-04	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	1.2E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	2.9E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	-1.2E-05	uCi/kg	U	1.9E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	6.2E-05	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-002
Client Sample ID: BVC01-Plains Top Minow

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.021	mg/kg-dry		0.0050		SW6020	07/27/08 06:12 / sml
Uranium, Activity	1.4E-05	uCi/kg		3.4E-06		SW6020	07/27/08 06:12 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	3.5E-04	uCi/kg		1.1E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	2.8E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	-2.0E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	4.2E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	7.1E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.0E-04	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	1.1E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	2.7E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	1.0E-04	uCi/kg		2.2E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	1.0E-04	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-003
Client Sample ID: BVC01-Plains Kill Fish

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.035	mg/kg-dry		0.0050		SW6020	07/27/08 06:16 / sml
Uranium, Activity	2.4E-05	uCi/kg		3.4E-06		SW6020	07/27/08 06:16 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	4.7E-04	uCi/kg		1.1E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	3.1E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	1.2E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	4.2E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	7.1E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.0E-04	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	1.1E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	2.8E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	5.7E-06	uCi/kg	U	2.2E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	1.0E-04	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-004
Client Sample ID: BVC01-Common Shiner

SAS sand shiner

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.031	mg/kg-dry		0.0050		SW6020	07/27/08 06:20 / sml
Uranium, Activity	2.1E-05	uCi/kg		3.4E-06		SW6020	07/27/08 06:20 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	2.3E-04	uCi/kg		1.6E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	2.6E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	3.8E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	6.1E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	1.0E-02	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	3.0E-04	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	1.6E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	4.0E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	9.8E-05	uCi/kg		3.2E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	1.6E-04	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-005
Client Sample ID: BVC01-ICF JSA- CAP Carp

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.0098	mg/kg-dry		0.0050		SW6020	07/27/08 06:24 / sml
Uranium, Activity	6.7E-06	uCi/kg		3.4E-06		SW6020	07/27/08 06:24 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	7.8E-04	uCi/kg		5.0E-05		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	1.9E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	7.6E-05	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	5.0E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	8.4E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.3E-05	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	1.6E-05	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	3.6E-05	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	-7.4E-07	uCi/kg	U	2.6E-06		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	9.2E-06	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-006
Client Sample ID: BVC04-Common Shiner

Sand Shiner

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.024	mg/kg-dry		0.0050		SW6020	07/27/08 06:28 / sml
Uranium, Activity	1.6E-05	uCi/kg		3.4E-06		SW6020	07/27/08 06:28 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	5.4E-04	uCi/kg		1.1E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	5.4E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	6.4E-04	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	4.4E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	7.3E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-7.7E-05	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	1.3E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	2.5E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	2.7E-05	uCi/kg		2.3E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	1.0E-04	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report
Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-007
Client Sample ID: BVC04-Short Head Red Horse Sucker

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.0072	mg/kg-dry		0.0050		SW6020	07/27/08 06:32 / sml
Uranium, Activity	4.9E-06	uCi/kg		3.4E-06		SW6020	07/27/08 06:32 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	1.7E-04	uCi/kg		5.0E-05		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	1.0E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	1.2E-04	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	1.2E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	2.0E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-3.7E-05	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	3.2E-05	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	6.9E-05	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	1.9E-06	uCi/kg	U	6.3E-06		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	2.3E-05	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-008
Client Sample ID: BVC04-Fathead Minow

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.031	mg/kg-dry		0.0050		SW6020	07/27/08 06:36 / sml
Uranium, Activity	2.1E-05	uCi/kg		3.4E-06		SW6020	07/27/08 06:36 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	1.8E-04	uCi/kg		1.2E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	3.1E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	7.9E-04	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	4.7E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	7.9E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-1.2E-04	uCi/kg	U			E903.0	08/07/08 10:33 / dm
Radium 226 precision (±)	1.6E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Radium 226 MDC	3.2E-04	uCi/kg				E903.0	08/07/08 10:33 / dm
Thorium 230	-1.2E-05	uCi/kg	U	2.5E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	6.9E-05	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-009
Client Sample ID: BVC04-PLK

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.019	mg/kg-dry		0.0050		SW6020	07/27/08 06:40 / sml
Uranium, Activity	1.3E-05	uCi/kg		3.4E-06		SW6020	07/27/08 06:40 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	8.5E-05	uCi/kg	U	1.2E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	1.3E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	3.2E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	4.7E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	7.8E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.1E-04	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	1.1E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	2.8E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	9.4E-05	uCi/kg		2.4E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	9.1E-05	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



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LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-010
Client Sample ID: BVC04-Carp (Cap)

Report Date: 08/22/08
Collection Date: 07/10/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.014	mg/kg-dry		0.0050		SW6020	07/27/08 06:44 / sml
Uranium, Activity	9.4E-06	uCi/kg		3.4E-06		SW6020	07/27/08 06:44 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	1.5E-04	uCi/kg		4.0E-06		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	7.1E-05	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	9.2E-05	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	1.5E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	2.6E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	4.8E-06	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	4.2E-06	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	9.1E-06	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	2.3E-06	uCi/kg		8.0E-07		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	3.7E-06	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-011
Client Sample ID: CHR04-WSM

Report Date: 08/22/08
Collection Date: 07/09/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.040	mg/kg-dry		0.0050		SW6020	07/27/08 07:00 / smf
Uranium, Activity	2.7E-05	uCi/kg		3.4E-06		SW6020	07/27/08 07:00 / smf
RADIONUCLIDES - TOTAL							
Polonium 210	4.9E-04	uCi/kg		1.4E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	3.2E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	4.5E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	5.3E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	8.8E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.8E-04	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	1.5E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	3.8E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	1.4E-04	uCi/kg		2.7E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	1.1E-04	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-012
Client Sample ID: CHR04-FHM

Report Date: 08/22/08
Collection Date: 07/09/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.024	mg/kg-dry		0.0050		SW6020	07/27/08 07:04 / sml
Uranium, Activity	1.6E-05	uCi/kg		3.4E-06		SW6020	07/27/08 07:04 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	4.2E-04	uCi/kg		1.1E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	2.8E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	1.5E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	4.3E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	7.2E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.1E-04	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	1.3E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	3.0E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	1.3E-05	uCi/kg	U	2.2E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	4.5E-05	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-013
Client Sample ID: CHR04-PLK

Report Date: 08/22/08
Collection Date: 07/09/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.017	mg/kg-dry		0.0050		SW6020	07/27/08 07:09 / sml
Uranium, Activity	1.2E-05	uCi/kg		3.4E-06		SW6020	07/27/08 07:09 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	4.7E-04	uCi/kg		1.7E-04		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	3.5E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	-1.8E-03	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	6.5E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	1.1E-02	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-2.2E-04	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	1.9E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	4.1E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	1.6E-05	uCi/kg	U	3.4E-05		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	8.9E-05	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-014
Client Sample ID: CHR04-SRS

Report Date: 08/22/08
Collection Date: 07/09/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.0066	mg/kg-dry		0.0050		SW6020	07/27/08 07:13 / sml
Uranium, Activity	4.4E-06	uCi/kg		3.4E-06		SW6020	07/27/08 07:13 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	5.0E-04	uCi/kg		1.3E-05		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	1.3E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	2.3E-04	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	4.9E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	8.1E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-8.7E-06	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	1.8E-05	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	3.4E-05	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	3.2E-06	uCi/kg		2.5E-06		E907.0	08/08/08 00:16 / dmf
Thorium 230 precision (±)	5.3E-06	uCi/kg				E907.0	08/08/08 00:16 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-015
Client Sample ID: CHR04-Carp

Report Date: 08/22/08
Collection Date: 07/09/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.010	mg/kg-dry		0.0050		SW6020	07/27/08 07:17 / smf
Uranium, Activity	6.9E-06	uCi/kg		3.4E-06		SW6020	07/27/08 07:17 / smf
RADIONUCLIDES - TOTAL							
Polonium 210	7.4E-04	uCi/kg		3.1E-05		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	2.2E-04	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	1.5E-04	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	1.2E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	2.0E-03	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	6.4E-05	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	4.4E-05	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	1.0E-04	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	1.7E-05	uCi/kg		6.1E-06		E907.0	08/08/08 11:00 / dmf
Thorium 230 precision (±)	2.7E-05	uCi/kg				E907.0	08/08/08 11:00 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-016
Client Sample ID: CHR04-CHC

Report Date: 08/22/08
Collection Date: 07/09/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.017	mg/kg-dry		0.0050		SW6020	07/27/08 07:21 / sml
Uranium, Activity	1.2E-05	uCi/kg		3.4E-06		SW6020	07/27/08 07:21 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	1.6E-04	uCi/kg		3.5E-06		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	5.2E-05	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	3.2E-05	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	1.4E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	2.3E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	-1.6E-06	uCi/kg	U			E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	4.4E-06	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	8.4E-06	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	9.0E-06	uCi/kg		7.0E-07		E907.0	08/08/08 11:00 / dmf
Thorium 230 precision (±)	2.6E-05	uCi/kg				E907.0	08/08/08 11:00 / dmf

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



LABORATORY ANALYTICAL REPORT

Client: Jones and Stokes
Project: Dewey Burdock 00996.07
Lab ID: C08070647-017
Client Sample ID: CHR04-RCS

Report Date: 08/22/08
Collection Date: 07/09/08
Date Received: 07/15/08
Matrix: Fish

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
METALS - TOTAL							
Uranium	0.031	mg/kg-dry		0.0050		SW6020	07/27/08 07:25 / sml
Uranium, Activity	2.1E-05	uCi/kg		3.4E-06		SW6020	07/27/08 07:25 / sml
RADIONUCLIDES - TOTAL							
Polonium 210	6.6E-07	uCi/kg	U	2.7E-06		RMO-3008	07/31/08 14:15 / plj
Polonium 210 precision (±)	3.2E-06	uCi/kg				RMO-3008	07/31/08 14:15 / plj
Lead 210	1.1E-05	uCi/kg	U			E909.0M	07/28/08 11:15 / dm
Lead 210 precision (±)	1.0E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Lead 210 MDC	1.7E-04	uCi/kg				E909.0M	07/28/08 11:15 / dm
Radium 226	8.0E-06	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 precision (±)	5.4E-06	uCi/kg				E903.0	08/07/08 10:34 / dm
Radium 226 MDC	7.3E-06	uCi/kg				E903.0	08/07/08 10:34 / dm
Thorium 230	-1.3E-05	uCi/kg	U	5.3E-07		E907.0	08/08/08 11:00 / dmf
Thorium 230 precision (±)	2.3E-05	uCi/kg				E907.0	08/08/08 11:00 / dmf
FIELD PARAMETERS							
Total Mass	4160	g				FIELD	07/22/08 17:12 / ***
*** Performed by Sampler							

Report Definitions: RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration

MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



QA/QC Summary Report

Client: Jones and Stokes
Project: Dewey Burdock 00996.07

Report Date: 08/22/08
Work Order: C08070647

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E903.0									Batch: 19208
Sample ID: C08070647-008AMS	Sample Matrix Spike					Run: BERTHOLD 770_080731C			08/07/08 10:33
Radium 226	23	pCi/g-dry		117	70	130			
Sample ID: C08070647-008AMSD	Sample Matrix Spike Duplicate					Run: BERTHOLD 770_080731C			08/07/08 10:34
Radium 226	20	pCi/g-dry		103	70	130	13	25.9	
Sample ID: MB-19208	Method Blank					Run: BERTHOLD 770_080731C			08/07/08 16:17
Radium 226	-0.002	pCi/g-dry							U
Sample ID: LCS-19208	Laboratory Control Sample					Run: BERTHOLD 770_080731C			08/07/08 16:17
Radium 226	0.077	pCi/g-dry		102	70	130			
Method: E907.0									Batch: 19208
Sample ID: C08070647-013AMS	Sample Matrix Spike					Run: EGG-ORTEC_080731C			08/11/08 09:23
Thorium 230	15.1	pCi/g-dry	0.10	90	70	130			
Sample ID: C08070647-013AMSD	Sample Matrix Spike Duplicate					Run: EGG-ORTEC_080731C			08/11/08 09:41
Thorium 230	18.0	pCi/g-dry	0.10	108	70	130	17	30	
Sample ID: LCS-19208	Laboratory Control Sample					Run: EGG-ORTEC_080731C			08/08/08 11:00
Thorium 230	0.0398	pCi/g-dry	0.10	90	70	130			
Sample ID: MB-19208	Method Blank					Run: EGG-ORTEC_080731C			08/08/08 11:00
Thorium 230	-0.0003	pCi/g-dry							U
Method: E909.0M									Batch: 19208
Sample ID: C08070647-006AMS	Sample Matrix Spike					Run: PACKARD 3100TR_080728D			07/28/08 11:15
Lead 210	150	pCi/g-dry		111	70	130			
Sample ID: C08070647-006AMSD	Sample Matrix Spike Duplicate					Run: PACKARD 3100TR_080728D			07/28/08 11:15
Lead 210	197	pCi/g-dry		146	70	130	27	30	S
- Spike response is outside of the acceptance range for this analysis. Since the LCS and the RPD for the MS MSD pair are acceptable, the response is considered to be matrix related. The batch is approved.									
Sample ID: MB-R106080	Method Blank					Run: PACKARD 3100TR_080728D			07/28/08 11:15
Lead 210	0.0001	pCi/g-dry							U
Sample ID: LCS-R106080	Laboratory Control Sample					Run: PACKARD 3100TR_080728D			07/28/08 11:15
Lead 210	0.103	pCi/g-dry		88	70	130			

Qualifiers:

RL - Analyte reporting limit.
S - Spike recovery outside of advisory limits.

ND - Not detected at the reporting limit.
U - Not detected at minimum detectable concentration



QA/QC Summary Report

Client: Jones and Stokes
Project: Dewey Burdock 00996.07

Report Date: 08/22/08
Work Order: C08070647

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: RMO-3008							Batch: 19208		
Sample ID: C08070647-017AMS	Sample Matrix Spike				Run: EGG-ORTEC_080731B		07/31/08 14:15		
Polonium 210	0.371	pCi/g-dry	0.10	161	70	130			S
- Spike response is outside of the acceptance range for this analysis. Since the MB, LCS and the MSD are acceptable the batch is approved.									
Sample ID: C08070647-017AMSD	Sample Matrix Spike Duplicate				Run: EGG-ORTEC_080731B		07/31/08 14:15		
Polonium 210	0.229	pCi/g-dry	0.10	100	70	130	47	30	R
Sample ID: LCS-R105592	Laboratory Control Sample				Run: EGG-ORTEC_080731B		07/31/08 14:15		
Polonium 210	0.0918	pCi/g-dry	0.10	106	70	130			
Sample ID: MB-R105592	Method Blank				Run: EGG-ORTEC_080731B		07/31/08 14:15		
Polonium 210	7E-05	pCi/g-dry							U
Method: SW6020							Batch: 19208		
Sample ID: MB-19208	Method Blank				Run: ICPMS4-C_080726A		07/27/08 05:43		
Uranium	9E-06	mg/kg-dry	2E-06						
Sample ID: LCS1-19208	Laboratory Control Sample				Run: ICPMS4-C_080726A		07/27/08 05:47		
Uranium	0.0485	mg/kg-dry	0.015	97	75	125			
Sample ID: C08070647-017AMS	Sample Matrix Spike				Run: ICPMS4-C_080726A		07/27/08 07:29		
Uranium	1.41	mg/kg-dry	0.015	121	75	125			
Sample ID: C08070647-017AMSD	Sample Matrix Spike Duplicate				Run: ICPMS4-C_080726A		07/27/08 07:33		
Uranium	1.41	mg/kg-dry	0.015	120	75	125	0.6	20	

Qualifiers:

RL - Analyte reporting limit.
R - RPD exceeds advisory limit.
U - Not detected at minimum detectable concentration

ND - Not detected at the reporting limit.
S - Spike recovery outside of advisory limits.