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Appendix A

Wetlands Survey - 2011

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS, OMAHA DISTRICT
WYOMING REGULATORY OFFICE
2232 DELL RANGE BOULEVARD, SUITE 210
CHEYENNE WY 82009-4942

REPLY TO
ATTENTION OF

December 19, 2011

Wyoming Regulatory Office

Ms. Miriam Whatley
Cameco Resources, Inc.
Development Department
550 North Poplar, Suite 100
Casper, Wyoming 82601

Dear Ms. Whatley:

This letter is in response to your request we received on December 1, 2011, for verification of a preliminary aquatic resources inventory at existing and proposed mine units in the Smith Ranch Highland/Reynolds Uranium Recovery Permit Area. This permit area includes the Highland (Permit 603) and Smith Ranch (Permit 633). The total permit area includes 62.3 square miles in Townships 35-37 North, Ranges 72-75 West in Converse County, Wyoming.

The U.S. Army Corps of Engineers regulates placement of dredged and fill material into waters of the United States in accordance with Section 404 of the Clean Water Act (33 U.S.C. 1344). The term "waters of the United States" has been broadly defined by statute, regulation, and judicial interpretation to include all waters that were, are, or could be used in interstate commerce such as streams, canals, reservoirs, lakes and adjacent wetlands. The Corps regulations are published in the *Code of Federal Regulations* as 33 C.F.R. Parts 320 through 332. Information on regulatory program requirements in Wyoming can be obtained from our website at http://www.nwo.usace.army.mil/html/od-rwy/Wyoming.htm

We have reviewed the report prepared by Hayden-Wing Associates, LLC titled *Cameco Resources, Inc., Smith Ranch-Highland/Reynolds Uranium In-Situ Recovery Project, Converse County, Wyoming, Wetland Surveys – August 2011* dated November 2011. Based on documentation in the report, we determined that methods used to map drainage areas and identify wetlands at select locations are consistent with the *Corps of Engineers Wetland Delineation Manual* dated January 1987 and appropriate supplement. Therefore, Map 1 in the report dated October 2011 provides an accurate depiction of all drainage locations where streams and wetlands may be present at Mine Units A-F, H-K, 1-4, 6-12, 15, and 21-28 within the permit area. This verification is valid indefinitely unless new mapping techniques or other information warrants a modification.

The presence or absence of wetland was evaluated at 19 locations within 13 mine units out of 30 mine units identified on Map 1. Wetland characteristics were documented at 11 locations. These sample points are useful for understanding where wetlands are likely to occur but do not serve as a delineation because no wetland boundaries were mapped. More accurate wetland delineations are only necessary when a proposed surface disturbing activity such as

construction of a road or installation of utilities within a well field would occur within a drainage shown on Map 1. Most of these drainages are unnamed ephemeral streams that function as tributaries of Sage Creek, Duck Creek, Willow Creek, and Box Creek. Sage Creek is a tributary of the North Platte River and the other three creeks are tributaries of streams that eventually flow into the Cheyenne River. These two rivers are interstate traditional navigable waters so streams and adjacent wetlands within the study area could be waters of the United States as defined at 33 CFR Part 328.3(a)(5) and (7). Aquatic sites such as playas and other natural or created topographic depressions with wetland characteristics that are isolated from the stream network are not likely to be waters of the United States.

Please understand that this letter provides verification of a preliminary aquatic resources inventory, which does not constitute an approved jurisdictional determination. An extensive evaluation in accordance with administrative procedures implemented by Headquarters of the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers on June 5, 2007, is now required before exerting jurisdiction over many streams and wetlands. The procedure is based primarily on rulings by the U.S. Supreme Court on January 9, 2001, in the case of *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* and on June 19, 2006, in the case of *Rapanos et ux., et al. v. United States*.

The administrative procedure described above is not necessary prior to undertaking activities authorized by nationwide permits such as construction of roads and utilities. On March 12, 2007, nationwide permits were published in Part II of the *Federal Register* (Vol. 72, No. 47). Those permits are available for a period of 5 years and will expire on March 18, 2012. Nationwide permits are scheduled to be issued again for another 5-year period prior to the expiration date. Current information on nationwide permits is available from our website.

Thank you for your interest in cooperating with requirements of the U.S. Army Corps of Engineers' regulatory program. Please contact me at (307) 772-2300 and reference our file NWO-2011-00594 if you have any questions about the jurisdictional determination procedure or specific permit requirements.

Sincerely,

Thomas B. Johnson, P.E.
Project Manager
Wyoming Regulatory Office

Copy Furnished:

Hayden-Wing Associates, LLC
P.O. Box 1689
Laramie, Wyoming 82073

The Omaha District, Regulatory Branch, Wyoming Regulatory Office is committed to providing quality and timely service to our customers. In an effort to improve customer service, please take a moment to complete a Customer Service Survey found on our web site at http://www.nwo.usace.army.mil/html/od-rwy/survey.htm Paper copies of the survey are also available upon request for those without Internet access.

Cameco Resources, Inc.
Smith Ranch-Highland/Reynolds
Uranium In-Situ Recovery Project
Converse County, Wyoming

Wetland Surveys – August 2011

Prepared for

Cameco Resources, Inc.
550 N. Poplar
Casper, WY 82601

Prepared by

Hayden-Wing Associates, LLC
Natural Resource Consultants
P.O. Box 1689
Laramie, WY 82073

Revised November, 2011

Potential Wetlands Surveyed in Cameco Resources' Smith Ranch-Highland/Reynolds Uranium In-Situ Recovery Project
Converse County, Wyoming
August, 2011

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Converse County, Wyoming
August, 2011

1.0 INTRODUCTION

Cameco Resources requested the completion of wetland surveys within the Smith Ranch-Highland/Reynolds Permit Area, in compliance with United States Army Corps of Engineers (USACE) regulations. Surveys are associated with a permit renewal to be issued by the Wyoming Department of Environmental Quality. Cameco proposes to combine the existing Highland Uranium Permit Area (Permit #603) and the Smith Ranch Permit Area (Permit # 633), as well as the newly proposed Reynolds Ranch area. The combined Smith Ranch-Highland/Reynolds Permit Area (Permit #633) is located approximately 22 miles northeast of Glenrock, Wyoming (T37N:R74W, Sections 25, 26, 35, 36; T37N:R73W, Sections 30-32; T36N:R74W, Sections 1, 2, 11-14, 22-27, 33-36; T36N:R73W, Sections 5-7, 10-31, 34-36; T36N:R72W, Sections 7, 16-22, 29, 30; T35N:R75W, Sections 13, 24; T35N:R74W, Sections 2-5, 8-11, 14-19, 21) encompassing 39,868 acres.

Wetland surveys were completed by Hayden-Wing Associates LLC., Laramie, Wyoming (HWA), between June 20 and June 30, 2011. During a meeting which took place on May 2, 2011, HWA, Cameco Resources, and the USACE determined that wetland surveys would be necessary within areas of proposed mining disturbance, but not within the entire permit area. It was also decided that the goal of initial surveys would be to determine whether wetlands were present within the proposed mine; full delineations of these areas would only be necessary if direct disturbance (i.e. filling) would result from mining activities. It was also agreed that locations of drainages would be verified.

2.0 OBJECTIVES AND METHODS

2.1 Methods

Prior to commencing field work, areas of potential wetlands were identified using color infra-red (CIR) aerial imagery, in conjunction with the National Wetland Inventory (NWI) database (available online at www.fws.gov/wetlands). Drainages were also delineated using CIR imagery. Potential wetlands and drainages were identified and digitized using ArcGIS® version 10. Data were collected in the field using USACE field forms, USGS 1:24,000 scale topographic maps, and Trimble Juno SB® Global Position System (GPS) units running ArcPad® 10 software.

Mine units proposed in the Reynolds EA (BLM 2011) and the Smith Ranch and Highland annual reports (Cameco Resources 2010a, 2010b) were surveyed for wetlands (Map 1). A map provided by Cameco Resources was also used to establish boundaries of mining activities. Wetland surveys were completed in all areas where proposed mine units overlapped with the potential wetland sites identified from CIR and NWI. Within each potential wetland site, a wetland survey point was selected which most exhibited wetland characteristics (generally the area with lowest elevation) and a USACE form was filled out. The boundaries of wetlands were not delineated; however, wetland observation points were taken which involved a simple observational determination of wetlands present, absent, or possible. These observation points were not associated with USACE field forms, and were meant to give an approximation of the extent of a wetland. These points were also used to document that an area was visited, but no wetland characteristics were observed.

Survey protocols followed the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (USACE 2008). This manual is designed to standardize wetland delineation techniques through the observation of (1) hydrophytic vegetation, (2) hydric soil, and (3) wetland hydrology. Unlike the original 1987 manual (USACE 1987), the regional supplement is specific to the Great Plains region. In order for an area to be classified as a wetland, all three criteria must be met. To promote consistent classification, field forms require specific indicators be observed in order to meet each criteria. Completed field forms are included in Appendix A. Survey crews included at least one member who was certified, having completed a 38-hour Army Corps of Engineers Wetland Delineation and Management Training Program.

2.2 Wetland Indicators

Primary wetland hydrology indicators include observations such as surface water, high water table, saturation and water marks (USACE 2008). However, secondary indicators such as surface soil cracks and geomorphic position can also be used to establish that appropriate hydrology exists at some point during the year.

Hydric soil indicators often involve histic epipedons (soils with an organic upper horizon), or evidence of oxidation and/or reduction of iron (USACE 2008). These "redox" reactions indicate that the soil has undergone anaerobic conditions, causing iron to become reduced as Ferric (Fe^{+3}) converts to Ferrous (Fe^{+2}). The reverse reaction, oxidation, occurs when aerobic conditions resume. This process results in observable color changes to the soil (NRCS 2010).

The presence of hydric vegetation was determined by recording all species present at the site, and establishing dominance. As recommended (USACE 2008), circular plots were used with radii of 5' for herbaceous stratum, 15' for sapling/shrub stratum, and 30' for tree and woody vine strata. Absolute percent cover was recorded using an ocular estimate, and dominance was established using the 50/20 rule (USACE 2008). Based on this rule, species with the greatest percent cover are considered dominant until the sums of their cover reach 50%. In addition, any species with over 20 percent cover is considered dominant. Plant species are assigned a wetland indicator value by the National Wetlands Inventory, and over 50% of dominant species must be obligate, facultative wetland, or facultative species. If upland species are dominant, the vegetation criteria is generally not met.

3.0 RESULTS

A total of 19 potential wetland sites were surveyed during June 2011 within the Smith Ranch Highland/Reynolds Permit Area (Map 1). Since a full delineation was not required, at each potential wetland site surveyors sampled the area that most exhibited wetland qualities. Wetland observation points were taken in some areas to give an approximation of the extent of the wetland. Despite visiting this site in the spring season when wet conditions would be expected, the majority of potential wetland sites did not contain water. However, in some cases these sites still met criteria to be considered a wetland based on secondary characteristics such as geomorphic position and surface soil cracks. Results are summarized in Table 1. Photos are included in Appendix B.

Of the 19 sites surveyed, 11 were observed to be wetlands, however, wetland sites #6, #11, #14 and #18 all had very weak wetland indicators. Surface soil cracking can be a misleading indicator, particularly in vertisols with a high shrink/swell potential (USACE 2008). This indicator, in conjunction with geomorphic position (i.e. a depression or drainage) was used to establish wetland hydrology in these sites.

The presence of reduced iron was tested for using alpha-alpha dipyridyl, however, this indicator alone was not used to determine wetland conditions.

A common wetland soil indicator observed was the presence of redox concentrations, which were visible as small, reddish pore linings or soft masses (Appendix B, Photo 20). Histic epipedons were relatively rare, occurring in just 2 sites (wetland #1 and #2) (Appendix B, Photo 21). A reduced or "gleyed" matrix was also observed at several sites. Please refer to Appendix A for detailed observations recorded on field forms.

Wetland vegetation varied from site to site, but common species observed included *Juncus balticus* (Baltic rush), *Veronica sp.*(speedwell), and *Eleocharis sp.* (spikerush). Non-native vegetation was common, which was problematic since these species often do not have indicator values. *Bromus tectorum* (cheatgrass), for example, was very dense at some sites. Surveyors used native species with assigned indicator values to establish whether wetland vegetation was present, and disregarded species such as cheatgrass.

Current uranium mining disturbance was observed near site #11. Former disturbance (not likely associated with mining) was observed near site #4, with some filling apparent. Many wetlands were very small, covering less than 0.5 acre. Areas with more extensive coverage are noted under comments (Table 1). For each site, the mine unit in closest proximity was documented. At some sites, the only area with wetland qualities was slightly outside the proposed map unit (Map 1). Forms were filled out for these areas in order to document that the area was not simply overlooked, but that no suitable sampling sites were located within the mine unit.

The locations of drainages, digitized using CIR aerial imagery, were groundtruthed in the field and all were found to be accurate (Map 1). The majority of drainages in the permit area were very dry, with upland vegetation covering the channel bottom. The drainages surrounding wetland sites #1, #2, #11, #14, and #15 had patches of hydrophytic vegetation, but were mostly dry. Some standing water was observed around sites #1 and #2. The only flowing water observed was associated with a human-constructed cattle pond near site #15, which is likely dry for the majority of the growing season.

Table 1. Wetland sites surveyed during June 2011. Observations of the survey are summarized and associated mine units are indicated.

Wetland #	Wetland Observed	Mine Unit	Comments
1	**yes**	15A	Extensive area
2	**yes**	10 and 11	Extends up drainage
3	no	12	Dry drainage
4	no	21	Disturbance apparent
5	no	27	Dry depression
6	***yes**	7	Slightly outside mine unit
7	**yes**	11	Extends up drainages
8	no	J exp.	Dry depression
9	no	J exp.	Dry depression
10	no	J exp.	Dry depression
11	***yes**	K north	Current disturbance in area
12	**yes**	8	Depression
13	**yes**	6	Office area
14	***yes**	6	Very patchy along drainage
15	**yes**	22 and 28	Extends up drainage
16	**yes**	22 and 28	Stock pond
17	no	21	Dry depression
18	***yes**	15A	Small, earthen dam
19	no	10	Reclaimed area

* indicates where only secondary hydrology indicators were present

4.0 CONCLUSIONS

During the June 2011 surveys, HWA surveyed 19 potential wetland sites within the Smith Ranch Highland/Reynolds Permit Area. Eleven of these sites were found to be wetlands, however, four of these were based on relatively weak secondary hydrology indicators. Delineation of drainages was found to be accurate, however, nearly all were observed to be dry.

Should Cameco Resources propose activites that will disturb any sites identified as wetlands, the USACE will likely require the completion of a Nationwide Permit 14. At the request of Cameco Resources, HWA will complete a delineation of the area. Precise boundaries of proposed mining activities will be required so that high resolution maps can be created, and acreages of disturbance calculated.

It is important to note that the Army Corps of Engineers is responsible for determining wetland status and regulating activities in wetland areas. While the 2011 surveys were completed by experienced professionals, no contractor is authorized to make absolute statements about the presence or absence of a wetland.

5.0 REFERENCES

Bureau of Land Management (BLM), 2011. Environmental Assessment for Cameco Resources/Power Resources Incorporated Reynolds Ranch In-situ Uranium Recovery Project, Casper Field Office, DOI-BLM- WY-060-EA10-111.

Cameco Resources, 2010a. Smith Ranch Project 2009-2010 Annual Report, Permit 633.

Cameco Resources, 2010b. Highland Uranium Project 2009-2010 Annual Report, Permit 603.

National Resources Conservation Service (NRCS), 2010. Field indicators of hydric soils in the United States. A guide for identifying and delineating hydric soils, version 7.0.

National Wetlands Inventory. www.fws.gov/wetlands.

U.S. Army Corps of Engineers (USACE), 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region. ERDC/EL TR-08-12.

_____. 1987. Corps of Engineers Wetland Delineation Manual. Environmental Laboratory. Wetlands Research Program Technical Report Y-87-1.

APPENDIX A

Field Forms

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 15A City/County: Converse Sampling Date: June 21, 2011

Applicant/Owner: Cameco State: WY Sampling Point: #1

Investigator(s): Lisa Martin & Jon Knudson Section, Township, Range: 11 - T35N R74W

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): G Lat: 105°41'49.80" W Long: 43°1'15.98" N Datum: NAD 83

Soil Map Unit Name: Clarkelen - Haverdad - Blowinder Complex NWI classification: Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	35	✓	OBL
2. Typha latifolia	40	✓	OBL
3. *Carex aquatilis	5	—	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

— Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

only herb stratum present

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10.5	10YR3/1						~Sandy	Histic epipedon
10.5-19.5	10YR 4/1	95	7.5YR5/8	5	C	PL	Sandy loam	
19.5-25	10YR 5/1	90	7.5YR5/8	10	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ 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 Crust (B11)
- ✓ Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 5

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 15A City/County: Converse Sampling Date: June 21, 2011

Applicant/Owner: Cameco State: WY Sampling Point: #1

Investigator(s): Lisa Martin & Jon Knudson Section, Township, Range: 11 - T35N R74W

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): G Lat: 105°41'40.80"W Long: 43°1'15.98"N Datum: NAD 83

Soil Map Unit Name: Clarkelen - Haverdad - Big Winder Complex NWI classification: Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ~, Soil ~, or Hydrology ~ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	35	✓	OBL
2. Typha latifolia	40	✓	OBL
3. Carex aquatilis	5	—	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

~ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

~ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

only herb stratum present

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10.5	10YR3/1						~Sandy	Histic epipedon
10.5-19.5	10YR 4/1	95	7.5YR5/8	5	C	PL	Sandy loam	
19.5-25	10YR 5/1	90	7.5YR5/8	10	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: NONE

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ 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 Crust (B11)
- ✓ Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 5

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 15A City/County: Converse Sampling Date: June 21, 2011

Applicant/Owner: Cameco State: WY Sampling Point: #1

Investigator(s): Lisa Martin & Jon Knudson Section, Township, Range: 11 - T35N R74W

Landform (hillslope, terrace, etc.): creek Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): G Lat: 105°41'48.80"W Long: 43°1'15.98"N Datum: NAD 83

Soil Map Unit Name: Clarkelen - Haverdad - Big Winder Complex NWI classification: Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	35	✓	OBL
2. Typha latifolia	40	✓	OBL
3. *Carex aquatilis	5	—	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0 = Total Cover		

% Bare Ground in Herb Stratum 20

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

— Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

only herb stratum present

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10.5	10YR 3/1						Sandy	Histic epipedon
10.5-19.5	10YR 4/1	95	7.5YR 5/8	5	C	PL	Sandy loam	
19.5-25	10YR 5/1	90	7.5YR 5/8	10	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ 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 Crust (B11)
- ✓ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 5

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 10 & 11 City/County: Converse Sampling Date: June 21, 2011

Applicant/Owner: Cameco State: WY Sampling Point: #2

Investigator(s): Lisa Mentink Jon Knudson Section, Township, Range: 17, T35N R74W

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): G Lat: 43°0'35.1954" Long: 105°45'40.7557" Datum: NAD 83

Soil Map Unit Name: Hiland-Bowbac Complex NWI classification: Not listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ~~✓~~, Soil ~~✓~~, or Hydrology ~~✓~~ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	95	✓	OBL
2. Agropyron smithii	<1	–	FACU-
3. Poa pratensis	<1	–	FAC U
4. Platanthera sp.	<1	–	FAC W
5.			
6.			
7.			
8.			
9.			
10.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

— Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100	—				Loam	
3-4.5	2.5Y 4/2	100	—				Sandy Loam	
4.5-7	2.5Y 5/3	100	—				Sand	
7-25	Gley 1 5/10Y	90	2.5YR 5/8	10	C	PL	Sandy Clay	Sand & clay in Pockets-Some Gravel

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: None

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Positive alpha/alpha dipyridyl

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ 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 Crust (B11)
- ✓ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 10 & 11 City/County: Converse Sampling Date: June 21, 2011

Applicant/Owner: Cameco State: WY Sampling Point: #2

Investigator(s): Lisa Mentink Jon Knudson Section, Township, Range: 17, T35N R74W

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): G Lat: 43°0'35.1954" Long: 105°45'40.7557" Datum: NAD 83

Soil Map Unit Name: Hilcrest-Bowdoc Complex NWI classification: Not listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ~~✓~~, Soil ~~✓~~, or Hydrology ~~✓~~ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	95	✓	OBL
2. Agropyron spicatum	<1	–	FACW-
3. Poa pratensis	<1	–	FAC U
4. Plantathera sp.	<1	–	FAC W
5.			
6.			
7.			
8.			
9.			
10.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

— Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100	—				Loam	
3-4.5	2.5Y 4/2	100	—				Sandy loam	
4.5-7	2.5Y 5/3	100	—				Sand	
7-25	Gley 1 5/10Y	90	2.5YR 5/8	10	C	PL	Sandy clay	Sand & clay in Pockets=Same Texture

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Non E

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks: Positive alpha/alpha dipyridyl

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ 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 Crust (B11)
- ✓ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 10 & 11 City/County: Converse Sampling Date: June 21, 2011

Applicant/Owner: Cameco State: WY Sampling Point: #2

Investigator(s): Lisa Mautink, Jon Knudson Section, Township, Range: 17, T35N R74W

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR): G Lat: 43°0'35.194" Long: 105° 45' 40.7557" Datum: NAD 83

Soil Map Unit Name: Hiland-Bowbac Complex NWI classification: Not listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ~~X~~, Soil ~~X~~, or Hydrology ~~X~~ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation X, Soil X, or Hydrology X 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 ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	95	✓	OBL
2. Agropyron spicatum	<1	–	FACU-
3. Poa pratensis	<1	–	FAC U
4. Platanthera sp.	<1	–	FAC W
5.			
6.			
7.			
8.			
9.			
10.			
	97 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum 3

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

✓ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

— Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	100	—				Loam	
3-4.5	2.5Y 4/2	100	—				Sandy loam	
4.5-7	2.5Y 5/3	100	—				Sand	
7-25	Gley 1 5/10Y	90	2.5YR 5/8	10	C	PL	Sandy clay	Sand & clay in Patches - Same horizon

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: Non E

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Positive alpha/alpha dipyridyl

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ✓ 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 Crust (B11)
- ✓ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ✓ No ___ Depth (inches): 2

Water Table Present? Yes ✓ No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ✓ No ___ Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 12 City/County: Converse Sampling Date: June 21, 201

Applicant/Owner: Cameco State: WY Sampling Point: #3

Investigator(s): Lisa Martin & Jon Knudson Section, Township, Range: 17, T35N R74W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR): G Lat: 42°59'59.1834" Long: 105°08'3.5737" Datum: NAD 83

Soil Map Unit Name: Hiland-Bowbac Complex NWI classification: Not listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Poa pratensis	6		FAC U
2. Bromus tectorum	40		—
3. Taraxacum officinale	3		FAC U
4. Achillea millefolium	2		FAC U
5. Crepis acuminata	4		FAC U
6. Astragalus sp.	1		—
7. Stipa nelsonii	1		—
8. Koeleria macrantha	7		—
9. Allium sp.	1		—
10. Poa secunda	5		—
11. Alyssum desertorum	5		—
	80 = Total Cover		
~~Woody Vine Stratum~~ (Plot size: ____)			
1. Antennaria sp.	5		
2.			
	20 = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 0 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	
FACW species	0	x 2 =	
FAC species	0	x 3 =	
FACU species	4	x 4 =	16
UPL species	0	x 5 =	
Column Totals:	4 (A)		16 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

- ____ Dominance Test is >50%
- ____ Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:

wetland site #3

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	100	—	0	—	—	Sandy clay	
2-8	10YR 4/2	100	—	0	—	—	Sandy clay	
8-12	10YR 5/3	100	—	0	—	—	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: None

Depth (inches): —

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 15

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

Saturation is at > 12 inches

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 21 City/County: Converse Sampling Date: June 22, 2011

Applicant/Owner: Cameco State: WY Sampling Point: #4

Investigator(s): Lisa Martin & Jon Knudson Section, Township, Range: 35, T37N R74W

Landform (hillslope, terrace, etc.): depression-rolling hills Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): LRR-G Lat: 105°42'16.92"W Long: 43°7'53.13"N Datum: Nad 83

Soil Map Unit Name: Cambria - Cushman Complex NWI classification: wetland (freshwater emergent)

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation –, Soil (+), or Hydrology (+) significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

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 ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
- Area seems to be recently filled in! (see photos)
- Outside Mine Unit 21 area, but within area on Reynolds EA

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Eleocharis acicularis	25	Dom	OBL
2. Veronica peregrina	2	–	FACW
3. Veronica anagallis-aquatica	5	–	OBL
4. Bromus tectorum	2	–	–
5. Bromus japonicus	2	–	–
6. Alyssum desertorum	1	–	–
7.			
8.			
9.			
10.			
	37 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 100 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

(+) Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes (+) No ____

Remarks:

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 4/1	100					silty clay	
2-20	7.5YR 4/1	100					silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- (+) Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- (+) Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

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

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks: Sediment and cracking seems to be from very brief flooding

5

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith Ranch / Mine Unit 27 City/County: Converse Sampling Date: 6/22/11

Applicant/Owner: Cameco State: WY Sampling Point: 5

Investigator(s): Jon Knudsen / Lisa Martin Section, Township, Range: 36, T37N R74W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): slight concave Slope (%): 0

Subregion (LRR): G Lat: 105°41'57.23"W Long: 43° 8'25.67"N Datum: NAD 83

Soil Map Unit Name: Cambeta - Cushman Complex NWI classification: Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ⊕, Soil ~, or Hydrology ~ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ✓ ?	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Veg is mostly non-native

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: ____)			
1. Agropyron cristatum	5	–	~~FacU~~
2. Artemisia sp.	3	–	–
3. Elymus lanceolatum	1	–	–
4. Bromus tectorum	1	–	–
5. Ranunculus japonicus	1	–	FacW
6. Agropyron spicatum	1	–	FacU-
7. Poa secunda	7	–	–
8. Bromus ehernus	30	✓	–
9.			
10.			
	47 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): ____ (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species ____	x 1 =	____
FACW species ____	x 2 =	____
FAC species ____	x 3 =	____
FACU species ____	x 4 =	____
UPL species ____	x 5 =	____
Column Totals: ____ (A)		____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ___ Dominance Test is >50%
- ___ Prevalence Index is ≤3.0[1]
- ___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ✓ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ____

Remarks:
non-natives dominant – No indicator status for non-natives unknown

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR 4/1	100					clay	
3-14	7.5YR 4/1	100					silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- 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 Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Possible very brief flooding during storms

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith Ranch / Mine Unit 7 City/County: Converse Sampling Date: 6/22/11
Applicant/Owner: Cameco State: WY Sampling Point: 6
Investigator(s): Jim Knudsen / Lisa Martin Section, Township, Range: 26 T36N R74W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2
Subregion (LRR): G Lat: 43°05'37.05" Long: 105°42'20.03" Datum: NAD 83
Soil Map Unit Name: Hiland-Bowbac Complex NWI classification: Freshwater Pond
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Outside mine unit 7 boundary, does not extend into project areas

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Agropyron spicatum	10	✓	FacU
2. Hordeum jubatum	15	✓	FacW
3. Veronica anagallis-aquatica	2		OBL
4. Bromus tectorum	1		—
5. Elymus lanceolatum	1		—
6. Veronica peregrina	10	✓	FacW
7.			
8.			
9.			
10.			
	37 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	2	x 1 =	2
FACW species	25	x 2 =	50
FAC species	—	x 3 =	—
FACU species	10	x 4 =	40
UPL species	—	x 5 =	—
Column Totals:	37 (A)		92 (B)

Prevalence Index = B/A = 2.7

Hydrophytic Vegetation Indicators:
✓ Dominance Test is >50%
✓ Prevalence Index is ≤3.0[1]
— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
— Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:
Small area of hydrophytic veg surrounded by upland or fac veg.

SOIL

Sampling Point: 6

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	90	7.5YR 4/6	10	C	PL	CLAY LOAM	More structure than ↓
4-15	10YR 3/2	90	7.5YR 4/6	10	C	PL	CLAY LOAM	
15-20	10YR 4/2	80	7.5YR 4/6	11	C	PL	Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes ✓ No ___

Remarks:

Positive dye test on all layers of Soil

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ✓ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No ✓ Depth (inches): ___

Water Table Present? Yes ___ No ✓ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ✓ Depth (inches): ___

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine unit 11 City/County: Converse Sampling Date: 6/23/2011

Applicant/Owner: Cameco State: WY Sampling Point: 7

Investigator(s): Lisa Martin & Logan McComb Section, Township, Range: 21 T35N R74W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): G Lat: 42° 59' 41.38 Long: 105° 44' 15.35" W Datum: NAD 83

Soil Map Unit Name: Kishorn-Duryer-Orpha Association NWI classification: "other"

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes (+) No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Wetland extends into drainage, pretty extensive

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus – large	10	✓	OBL
2. Veronica peregrina	8	✓	FACW
3. Poa pratensis	10	✓	FACU
4. Eleocharis sp.	5	✓	OBL
5. Rumex crispus	1	–	
6.			
7.			
8.			
9.			
10.			
	34 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

(+) Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 7

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	9Ley 2.5/10B	90	2.5YR 5/6	5	C	PL	Clay	
			Gley 1 5/10Y	5	RM	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes (+) No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- (+) 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 Crust (B11)
- (+) Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes (+) No ___ Depth (inches): 0

Water Table Present? Yes (+) No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes (+) No ___ Depth (inches): 0

Wetland Hydrology Present? Yes (+) No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith Ranch / Mine Unit J Ext. City/County: Converse Sampling Date: 6/23/11

Applicant/Owner: Cameco State: WY Sampling Point: 8

Investigator(s): J. Kiedrowski Section, Township, Range: 20 T36N R73W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): _____ Slope (%): 0

Subregion (LRR): G Lat: 105° 38' 37.16" W Long: 43° 4' 20.81" N Datum: Nad83

Soil Map Unit Name: Hiland-Bowbac Complex NWI classification: Not listed

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ✓, Soil —, or Hydrology — significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ____	Is the Sampled Area within a Wetland? Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	35	✓	OBL
2. Agropyron Spicatum	5	—	FacU-
3. Veronica Anagallis	5	—	FacW
4. Bromus Inermis	5	—	FacU
5. V Alopecurus geniculatus	35	✓	OBL
6. Hordeum jubatum	5	—	FacW
7.			
8.			
9.			
10.			
	= Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

— Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

✓ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

Some Bromus japonicus in area

SOIL

Sampling Point: E

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 4/2	100					clay	& less structure - Root
1-18	10YR 4/2						clay	Solid clay

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No ✓

Remarks:

Soil heavy clay - no redox visible

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- 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 Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ____ No ✓ Depth (inches): ____

Water Table Present? Yes ____ No ✓ Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No ✓ Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

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

Remarks:

Concave & lower than surrounding slope - possible water / run-off collection, hydric soils & upland veg all around spot.

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith Ranch / Mine Unit 1 Exp City/County: Converse Sampling Date: 6/23/11
Applicant/Owner: Cameco State: WY Sampling Point: 9
Investigator(s): Jon Knudsen / Logan McGinnis Section, Township, Range: 20, T36N R73W
Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR): G Lat: 43°4'16.94" N Long: 105°38'32.12" W Datum: NAD83
Soil Map Unit Name: Hiland-Rawlins Complex NWI classification: not listed
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ✓, Soil —, or Hydrology — significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ✓	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
Bromus species very abundant

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' Radius)			
1. Poa pratensis	10		FacU
2. Bromus japonicus	5		FacU
3. Bromus tectorum	30	+	—
4. Agropyron spicatum	30	+	FacU-
5. Alopecurus geniculatus	5		Obl
6. Elymus lanceolatus	5		
7.			
8.			
9.			
10.			
	85 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum ____			

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	6	x 1 =	6
FACW species	____	x 2 =	____
FAC species	____	x 3 =	____
FACU species	53	x 4 =	212
UPL species	____	x 5 =	____
Column Totals:	59 (A)		218 (B)

Prevalence Index = B/A = 3.7

Hydrophytic Vegetation Indicators:
— Dominance Test is >50%
— Prevalence Index is ≤3.0[1]
— Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
✓ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No ✓

Remarks:
Cheat grass abundant

SOIL

Sampling Point: 9

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 5/2	100	—	—	—	—	clay	fine clay granules
3-20	10YR 4/2	100	—	—	—	—	clay	blocky clay-rich substrate ↑

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No ✓

Remarks:

soil uniform after first horizon

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- 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 Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ____ No — Depth (inches): ____

Water Table Present? Yes ____ No — Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No — Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith Ranch / Mine Unit J EXP. City/County: Converse Sampling Date: 6/23/11

Applicant/Owner: Cameco State: WY Sampling Point: 10

Investigator(s): Jon Knudsen / Logan McConnell Section, Township, Range: 21 T36N R73W

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): G Lat: 43°4'32.20"N Long: 105°37'56.15"W Datum: NAD83

Soil Map Unit Name: Aeric Haplaquepts NWI classification: Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ___ (If no, explain in Remarks.)

Are Vegetation ___, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ 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 ___	Is the Sampled Area within a Wetland? Yes ___ No ✓
Hydric Soil Present?	Yes ___	No ✓	
Wetland Hydrology Present?	Yes ✓	No ___	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	___ = Total Cover		
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	___ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Juncus balticus	20		OBL
2. Phyllum prolatense Alopecurus geniculatus	20		OBL
3. Hordeum jubatum	15		FAC W
4. Bromus techtorum	5		-
5. Gillysium desertorum	1		-
6. Veronica peregrina	1		FAC W
7.			
8.			
9.			
10.			
	67 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	___ = Total Cover		

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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	20	x 1 =	20
FACW species	16	x 2 =	32
FAC species	___	x 3 =	___
FACU species	20	x 4 =	80
UPL species	___	x 5 =	___
Column Totals:	55 (A)		132 (B)

Prevalence Index = B/A = 2.3

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

✓ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks:

SOIL

Sampling Point: 10

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 5/4	100					CLAY	small yellow sand inclusions
3-20	10YR 3/2	100					clay	larger inclusions of Yellow Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

heavy clay soil with plenty of rocks

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- 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 Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ✓ Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

low playa in middle of higher grassland

4

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit K - North City/County: Converse Sampling Date: Jun 24, 2011

Applicant/Owner: Cameco State: WY Sampling Point: 11

Investigator(s): Lisa Martin & Logan McConnell Section, Township, Range: 19 T36N R73W

Landform (hillslope, terrace, etc.): Drainage Local relief (concave, convex, none): concave Slope (%): ____

Subregion (LRR): G Lat: 43° 04' 51.98" N Long: 105° 40' 20.87" W Datum: Nad 83

Soil Map Unit Name: Gilliard Loam NWI classification: Freshwater Pond

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 ____ 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 ____	Is the Sampled Area within a Wetland? Yes (+) No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Area is disturbed, partially filled. Wetland indicators weak, but passes

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Eleocharis palustris	75	(+)	OBL
2. Veronica anagallis-aquatica	4	-	
3. Veronica peregrina	5	-	
4. Unknown #2	1	-	
5.			
6.			
7.			
8.			
9.			
10.			
	____ = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	85 = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____	
FACW species ____	x 2 = ____	
FAC species ____	x 3 = ____	
FACU species ____	x 4 = ____	
UPL species ____	x 5 = ____	
Column Totals: ____ (A)	____ (B)	

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: unknown not dominant

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 5/2	85	2.5YR 4/8	15	C	PL	Clay	No other horizons visible

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- (+) Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- (+) Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): _____

Water Table Present? Yes ___ No ___ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): _____

Wetland Hydrology Present? Yes ✓ No ___

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

Remarks:

Weak

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 8 City/County: Converse Sampling Date: 6/24/2011
Applicant/Owner: Cameco State: WY Sampling Point: 12
Investigator(s): Lisa Martin & Logan McDonell Section, Township, Range: 35, T36N R74W
Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0
Subregion (LRR): G Lat: 43° 03' 11.52" N Long: 105° 42' 27.48" W Datum: NAD83
Soil Map Unit Name: Haverland-Lohmiller Complex NWI classification: Freshwater Pond
Are climatic / hydrologic conditions on the site typical for this time of year? Yes (+) No ____ (If no, explain in Remarks.)
Are Vegetation —, Soil —, or Hydrology — significantly disturbed? Are "Normal Circumstances" present? Yes (+) 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 ____	Is the Sampled Area within a Wetland? Yes (+) No ____
Hydric Soil Present?	Yes (+) No ____	
Wetland Hydrology Present?	Yes (+) No ____	

Remarks:

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Hordeum jubatum	15	(+)	FACW
2. Veronica peregrina	3		FACW
3. Brassicaceae spp.	2		—
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		
% Bare Ground in Herb Stratum ____			

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
___ Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes (+) No ____

Remarks: Mustard dominant on edge of wetland, but not in center where point was taken

SOIL

Sampling Point: 12

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/1	94	5YR 5/8	6	C	PL	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes (+) No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- (+) Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes ___ No ___ Depth (inches): ___

Water Table Present? Yes ___ No ___ Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No ___ Depth (inches): ___

Wetland Hydrology Present? Yes (+) No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 6 City/County: Converse Sampling Date: June 24, 201

Applicant/Owner: Cameco State: WY Sampling Point: #13

Investigator(s): Lisa Martin & Logan McConnel Section, Township, Range: 36 T36N R74W

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): G Lat: 43°03'10.61" N Long: 105° 41'11.05" W Datum: Ld 83

Soil Map Unit Name: Hiland-Rowbac Complex NWI classification: Freshwater Emergent-Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (+) No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes (+) 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 ____	Is the Sampled Area within a Wetland? Yes (+) No ____
Hydric Soil Present?	Yes (+) No ____	
Wetland Hydrology Present?	Yes (+) No ____	

Remarks: Close to office – unsure if natural, tree may be planted, so not used to determine veg

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30' radius)			
1. Populus deltoides – planted?	5	(+)	
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Typha latifolia	10	(+)	OBL
2. Juncus balticus	10	(+)	OBL
3. Eleocharis palustris	10	(+)	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks:

SOIL

Sampling Point: 13

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-15	10YR 4/2	95	5YR 4/6	5	C	PL	clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes (+) No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- (+) 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 Crust (B11)
- (+) Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes (+) No ___ Depth (inches): 0

Water Table Present? Yes (+) No ___ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes (+) No ___ Depth (inches): 0

Wetland Hydrology Present? Yes (+) No ___

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

Remarks:

4

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 1-1 City/County: Converse Sampling Date: June 22, 2011

Applicant/Owner: Cameco State: W Sampling Point: Wetland #14

Investigator(s): Lisa Martin & Jon Knudson Section, Township, Range: 35 T36N R74W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): Concave Slope (%): 0

Subregion (LRR): G Lat: 105°41'53.92"W Long: 43° 2' 56.28"N Datum:

Soil Map Unit Name: Clarkelen-Haverdad-Bidman-Ireta Complex NWI classification: Freshwater Emergent Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ____ No ____ (If no, explain in Remarks.)

Are Vegetation +, Soil –, or Hydrology – significantly disturbed? Are "Normal Circumstances" present? Yes (+) 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 ____	Is the Sampled Area within a Wetland? Yes (+) No ____
Hydric Soil Present?	Yes (+) No ____	
Wetland Hydrology Present?	Yes (+) No ____	

Remarks: Boundary passes east section

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Phleum pratensis	20	Y	FacU
2. Juncus balticus	25	Y	OBL
3. Poa pratensis	15	Y	FacU
4. Bromus tectorum	2	–	–
5. Stipa neleonii	2	–	–
6.			
7.			
8.			
9.			
10.			
	64 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 39	x 1 = 39
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species 55	x 4 = 220
UPL species ____	x 5 = ____
Column Totals: 94 (A)	259 (B)

Prevalence Index = B/A = 2.8

Hydrophytic Vegetation Indicators:

– Dominance Test is >50%

(+) Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes (+) No ____

Remarks: Non-natives grass

SOIL

Sampling Point: 14

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	95	7.5YR 5/8	5			sandy clay loam	Patches of sand
3-14	10YR 4/2	95	7.5YR 5/8	5			" "	Patches of sand more integrated
14-22	10YR 5/3	95	7.5YR 5/8	5			sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) (LRR 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) (MLRA 72 & 73 of LRR H)

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes (+) No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- 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 Crust (B11)
- Aquatic Invertebrates (B13)
- Hydrogen Sulfide Odor (C1)
- Dry-Season Water Table (C2)
- Oxidized Rhizospheres on Living Roots (C3) (where not tilled)
- (+) Presence of Reduced Iron (C4)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- (+) Drainage Patterns (B10)
- Oxidized Rhizospheres on Living Roots (C3) (where tilled)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- (+) Geomorphic Position (D2)
- FAC-Neutral Test (D5)
- Frost-Heave Hummocks (D7) (LRR F)

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes (+) No _____

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

Remarks:

Barely passes

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 22/28 City/County: Converse Sampling Date: June 29, 2021

Applicant/Owner: Cameco State: WY Sampling Point: 16

Investigator(s): Lisa Martin & Jeff Yelton Section, Township, Range: 12 T36 N R74 W

Landform (hillslope, terrace, etc.): manmade ditch Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): G Lat: 43°06'37.57"N Long: 105°41'36.26"W Datum: NAD83

Soil Map Unit Name: Gilliland Loam NWI classification: wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (+) No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil (+), or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 ____	Is the Sampled Area within a Wetland? Yes (+) No ____
Hydric Soil Present?	Yes (+)	No ____	
Wetland Hydrology Present?	Yes (+)	No ____	

Remarks: Man made ditch for cows

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Carex aquatilis	25	(+)	OBL
2. Juncus balticus	3	-	OBL
3. Poa pratensis	15	(+)	FACU
4. Hordeum jubatum	2	-	OBL
5. Panicum virgatum	7		FAC
6. Scirpus pungens	25	(+)	OBL
7. Medicago lupulina	3		FACU
8. Taraxacum officinale	5		FACU
9. Bromus japonicus	<1		FACU
10. Agrostis stolonifera	1		FAC+
	80 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC-): 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

(+) Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes (+) No ____

Remarks:

SOIL

Sampling Point: 16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 4/2	100	—	—	—	—	Sand	
3-8	10YR 4/1	60	5YR 4/6	15			Clay	Sandy Patches
3-8			GLEY 1 2.5/N	25			Clay	
8-16	10YR 4/3	15	GLEY2 5/10B	20			Sand	Clay Patches
			7.5YR 5/6	15				
			GLEY 1 2.5/N	50				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) **(LRR 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) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes (+) No ___

Remarks:

Photos : 100_ 1993 Soil

100_ 1994 Wetland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- — 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 Crust (B11)
- — Aquatic Invertebrates (B13)
- — Hydrogen Sulfide Odor (C1)
- — Dry-Season Water Table (C2)
- — Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- — Presence of Reduced Iron (C4)
- — Thin Muck Surface (C7)
- — Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- (+) Surface Soil Cracks (B6)
- — Sparsely Vegetated Concave Surface (B8)
- — Drainage Patterns (B10)
- — Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- — Crayfish Burrows (C8)
- — Saturation Visible on Aerial Imagery (C9)
- (+) Geomorphic Position (D2)
- — FAC-Neutral Test (D5)
- — Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No (+) Depth (inches): ___

Water Table Present? Yes (+) No ___ Depth (inches): 18

Saturation Present? (includes capillary fringe) Yes (+) No ___ Depth (inches): 12

Wetland Hydrology Present? Yes (+) No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 22/28 City/County: Converse Sampling Date: June 29, 201

Applicant/Owner: Cameco State: WY Sampling Point: 16

Investigator(s): Lisa Martin & Jeff Yelton Section, Township, Range: 12 T36N R74W

Landform (hillslope, terrace, etc.): manmade ditch Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): G Lat: 43°06'37.57"N Long: 105°41'36.26"W Datum: Nad83

Soil Map Unit Name: Gilliland Land NWI classification: wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (+) No _____ (If no, explain in Remarks.)

Are Vegetation —, Soil (+), or Hydrology — significantly disturbed? Are "Normal Circumstances" present? Yes _____ 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 _____	Is the Sampled Area within a Wetland? Yes (+) No _____
Hydric Soil Present?	Yes (+)	No _____	
Wetland Hydrology Present?	Yes (+)	No _____	

Remarks: Man made ditch for cows

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Carex aquatilis	25	(+)	OBL
2. Juncus balticus	3	-	OBL
3. Poa pratensis	15	(+)	FACU
4. Hordeum jubatum	2	-	OBL
5. Equisetum laevigatum	7		FAC
6. Scirpus pungens	25	(+)	OBL
7. Medicago lupulina	3		FACU
8. Taraxacum officinale	5		FACU
9. Bromus japonicus	<1		FACU
10. Agrostis stolonifera	1		FAC+
	80 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

(+) Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes (+) No _____

Remarks:

SOIL

Sampling Point: 16

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 4/2	100	–	–	–	–	Sand	
3-8	10YR 4/1	60	5YR 4/6	15			Clay	Sandy Patches
3-8			GLEY 1 2.5/N	25			Clay	
8-16	10YR 4/3	15	GLEY2 5/10B	20			Sand	Clay Patches
			7.5YR 5/6	15				
			GLEY 1 2.5/N	50				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) **(LRR 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) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ⊕ No ___

Remarks:

Photos : 100_ 1993 Soil

100_ 1994 Wetland

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- — 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 Crust (B11)
- — Aquatic Invertebrates (B13)
- — Hydrogen Sulfide Odor (C1)
- — Dry-Season Water Table (C2)
- — Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- — Presence of Reduced Iron (C4)
- — Thin Muck Surface (C7)
- — Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ⊕ Surface Soil Cracks (B6)
- — Sparsely Vegetated Concave Surface (B8)
- — Drainage Patterns (B10)
- — Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- — Crayfish Burrows (C8)
- — Saturation Visible on Aerial Imagery (C9)
- ⊕ Geomorphic Position (D2)
- — FAC-Neutral Test (D5)
- — Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes — No ⊕ Depth (inches): ___

Water Table Present? Yes ⊕ No ___ Depth (inches): 10

Saturation Present? (includes capillary fringe) Yes ⊕ No ___ Depth (inches): 12

Wetland Hydrology Present? Yes ⊕ No ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith/Mine Unit 21 City/County: Converse Sampling Date: 6-29-11

Applicant/Owner: Cameco State: WY Sampling Point: 17

Investigator(s): Lisa Martin & Boris Yelton Section, Township, Range: 35 T37N R74W

Landform (hillslope, terrace, etc.): Slight depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR): G Lat: 43°07'56.29"N Long: 105°42'14.4"W Datum: WGS 83

Soil Map Unit Name: Cambeln - Cushman Complex NWI classification: Wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (+) No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes (+) 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 ____	**Is the Sampled Area within a Wetland?** Yes ____ No (−)
Hydric Soil Present?	Yes ____	No (−)	
Wetland Hydrology Present?	Yes (+)	No ____	

Remarks:

Photo ID 100 - 1997

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Eleocharus acicularis	35	(+)	OBL
2. Bromus japonicus	15		FACU
3. Alyssum desertorum	3		–
4. Poa secunda	3		–
5. Hordeum jubatum	1		OBL
6. Veronica peregrina	1		FACW
7.			
8.			
9.			
10.			
	53 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

(+) Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes (+) No ____

Remarks:

SOIL

Sampling Point: 17

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100	—	—	—	—	Clay Loam	Blocky Structure,
6-12	10YR 4/2	100	—	—	—	—	Clay	Very Hard Packed

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) **(LRR 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) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No (+)

Remarks:

Soil is extremely hard packed

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- — 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 Crust (B11)
- — Aquatic Invertebrates (B13)
- — Hydrogen Sulfide Odor (C1)
- — Dry-Season Water Table (C2)
- — Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- — Presence of Reduced Iron (C4)
- — Thin Muck Surface (C7)
- — Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- (+) Surface Soil Cracks (B6)
- — Sparsely Vegetated Concave Surface (B8)
- — Drainage Patterns (B10)
- — Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- — Crayfish Burrows (C8)
- — Saturation Visible on Aerial Imagery (C9)
- (+) Geomorphic Position (D2)
- — FAC-Neutral Test (D5)
- — Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ____ No — Depth (inches): ____

Water Table Present? Yes ____ No — Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ____ No — Depth (inches): ____

Wetland Hydrology Present? Yes (+) No ____

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

Remarks:

Probably only wet for very short periods of time

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 15A City/County: Converse Sampling Date: June 29, 2011

Applicant/Owner: Cameco State: WY Sampling Point: 18

Investigator(s): Lisa Martin & Boris Yelton Section, Township, Range: 11 T35N R74W

Landform (hillslope, terrace, etc.): drainage Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR): G Lat: 43°01'15.61"N Long: 105°42'43.85"W Datum: _____

Soil Map Unit Name: Haverdad - Lonmiller Complex NWI classification: wetland

Are climatic / hydrologic conditions on the site typical for this time of year? Yes (+) No _____ (If no, explain in Remarks.)

Are Vegetation (+), Soil –, or Hydrology (+) significantly disturbed? Are "Normal Circumstances" present? Yes _____ 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 (+)	**Is the Sampled Area within a Wetland?** Yes (+) No _____
Hydric Soil Present?	Yes (+)	No _____	
Wetland Hydrology Present?	Yes (+)	No _____	

Remarks: Small drainage with an earthen dam - stock pond, non-native veg. dominant. Non-native veg difficult

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	_____ = Total Cover		
Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Bromus japonicus	90	(+)	FACU
2. Bromus tectorum	5		–
3. Hordeum jubatum	<1		OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: –)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC (excluding 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 _____	x 1 =	_____
FACW species _____	x 2 =	_____
FAC species _____	x 3 =	_____
FACU species _____	x 4 =	_____
UPL species _____	x 5 =	_____
Column Totals: _____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index ≤3.0[1]

___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes _____ No (+)

Remarks: Non native - so difficult to establish whether hydrophytic veg would naturally occur.

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/2	98	7.5YR 5/5	2	C	PL	Clay Loam	
3-7	10YR 3/2	90	7.5YR 5/3	10	C	PL	Clay Loam	
7-15	2.5Y 4/2	70	7.5YR 5/8	30	C	PL	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) **(LRR 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) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: ___

Depth (inches): ___

Hydric Soil Present? Yes (+) No _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ___ 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 Crust (B11)
- ___ Aquatic Invertebrates (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- (+) Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- (+) Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes _____ No (+) Depth (inches): _____

Water Table Present? Yes _____ No (+) Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No (+) Depth (inches): _____

Wetland Hydrology Present? Yes (+) No _____

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

Remarks:

Barely passes

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Smith / Mine Unit 10 City/County: Converse Sampling Date: June 30, 2011
Applicant/Owner: Cameco State: WY Sampling Point: 19
Investigator(s): Lisa Martin & Jeff Yelton Section, Township, Range: 19 T35N R75W
Landform (hillslope, terrace, etc.): Small depression Local relief (concave, convex, none): Concave Slope (%): 0
Subregion (LRR): G Lat: 42°59'48.01 N Long: 105°47'24.56 W Datum: NAD 83
Soil Map Unit Name: Hilarn - Bowbar Complex NWI classification: Not listed
Are climatic / hydrologic conditions on the site typical for this time of year? Yes (+) No ____ (If no, explain in Remarks.)
Are Vegetation (+), Soil (+), or Hydrology – significantly disturbed? Are "Normal Circumstances" present? Yes ____ 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 (–)
Hydric Soil Present? Yes ____ No (–)
Wetland Hydrology Present? Yes (+) No ____
Is the Sampled Area within a Wetland? Yes ____ No (–)

Remarks:
Area has been seed, soil not natural.
Photo 100-1999

VEGETATION – Use scientific names of plants.

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
	____ = Total Cover		
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	____ = Total Cover		
Herb Stratum (Plot size: 5' radius)			
1. Poa secunda	20	+	NI
2. Elymus trachycaulus	20	+	FACU
3. Stipa nelsonii	5		NI
4. Festuca sp	20	+	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	65 = Total Cover		
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	____ = Total Cover		

% Bare Ground in Herb Stratum ____

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC (excluding FAC–): 1 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 33 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	x 2 = ____
FAC species ____	x 3 = ____
FACU species ____	x 4 = ____
UPL species ____	x 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:
– Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No (–)

Remarks:
Veg has been seeded

SOIL

Sampling Point: Wetland 19

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	100	—	—	—	—	Sandy Loam	Disturbed, Reclaimed

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, 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) **(LRR 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) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

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

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if present):

Type: —

Depth (inches): —

Hydric Soil Present? Yes ____ No ⊕

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one required; check all that apply)

- ⊕ 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 Crust (B11)
- ⊕ Aquatic Invertebrates (B13)
- — Hydrogen Sulfide Odor (C1)
- — Dry-Season Water Table (C2)
- — Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- — Presence of Reduced Iron (C4)
- — Thin Muck Surface (C7)
- — Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ⊕ No ____ Depth (inches): 4

Water Table Present? Yes ____ No — Depth (inches): ____

Saturation Present? (includes capillary fringe) Yes ⊕ No ____ Depth (inches): 0

Wetland Hydrology Present? Yes ⊕ No ____

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

Remarks: Puddle, Catch Basin

APPENDIX B

Photos

Photo 1. Wetland site #1.

Photo 2. Wetland site #2.

Photo 3. Wetland site #3.

Photo 4. Wetland site #4.

Photo 5. Wetland site #5.

Photo 6. Wetland site #6.

Photo 7. Wetland site #7.

Photo 8. Wetland site #8.

Photo 9. Wetland site #9.

Photo 10. Wetland site #10.

Photo 11. Wetland site #11.

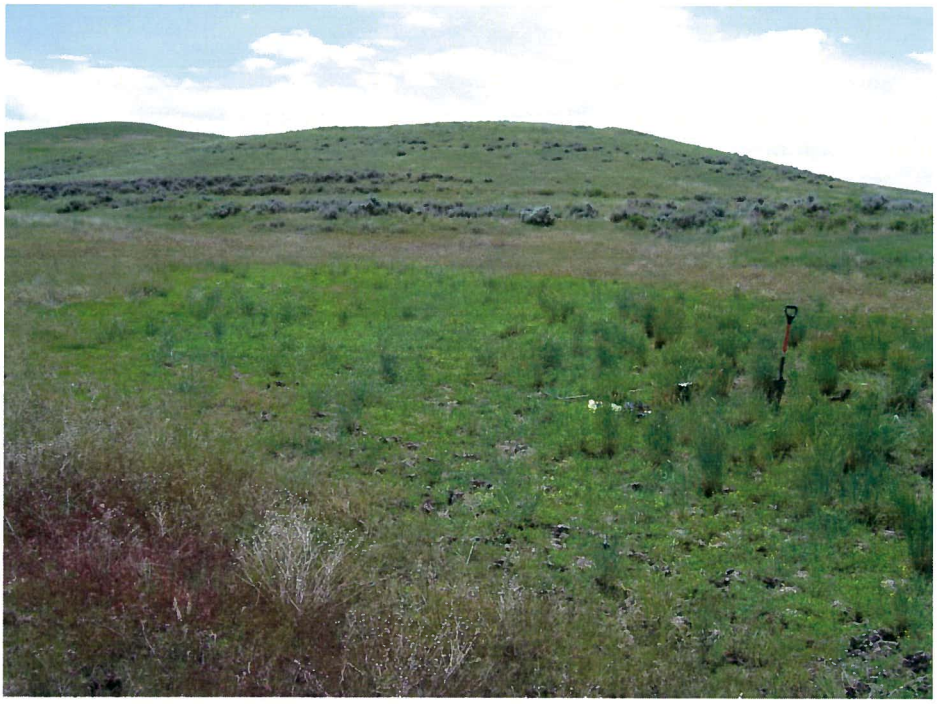

Photo 12. Wetland site #12.

Photo 13. Wetland site #13.

Photo 14. Wetland site #14.

Photo 15. Wetland site #15.

Photo 16. Wetland site #16.

Photo 17. Wetland site #17.

Photo 18. Wetland site #18.

Photo 19. Wetland site #19.

Photo 20. Redox concentrations visible as red patches.

Photo 21. Histic epipedon observed at wetland site #1.