

Brian R. Bjella
400 East Broadway, Suite 600
P.O. Box 2798
Bismarck, ND 58502-2798
701.223.6585
bbjella@crowleyfleck.com

June 14, 2012

RECEIVED

JUN 15 2012

PUBLIC SERVICE COMMISSION

Mr. Darrell Nitschke
Executive Director
North Dakota Public
Service Commission
600 E. Boulevard, Dept. 408
Bismarck, ND 58505-0480

Dear Mr. Nitschke:

RE: Enbridge Pipelines (North Dakota) LLC
Little Muddy Station Connection Project
Route Deviation Request
Docket No. PU-11-606
Our File No. 31-411-07

Enclosed herewith for filing are the original and ten copies of Raptor and Wildlife Survey Report, Tree and Shrub Inventory Report, and Noxious Weed Report for the Little Muddy Station Connection Project.

Please feel free to call should you have any questions.

Very truly yours,


Brian R. Bjella

bw
Enc.

62 **PU-11-606** Filed: 6/15/2012 Pages: 34

**Raptor and Wildlife Survey, Tree and Shrub
Inventory Report, and Noxious Weed Report**

Enbridge Pipelines (North Dakota) LLC

Brian Bjella



April 20, 2012

Mr. Paul Hartzheim
Merjent
TractorWorks Building
800 Washington Avenue N., Suite 315
Minneapolis, MN 55401

Re: **Little Muddy Station Connection Project Raptor and Wildlife Survey Report**

Dear Mr. Hartzheim,

Carlson McCain, Inc. is pleased to present a report concerning the findings of the raptor and wildlife survey along the Little Muddy Station Connection Project (Project). The survey was conducted on April 16 and 17, 2012, by Carlson McCain biologists Miranda Meehan and Chad Tucker. A one-mile wide corridor (0.5 mile on either side of pipeline) was surveyed from the ground by traversing the project construction right-of-way (ROW) and by long range observation of potential habitat within the survey corridor. Binoculars were used to conduct the long range observations. The survey was conducted during good weather and low wind conditions.

No raptor nests were observed during the survey. An active sharp-tailed grouse (*Tympanuchus phasianellus*) dancing ground (lek) was observed and documented near the Little Muddy ROW in Section 26, T156N, R100W. Thirty-five grouse were observed on the lek. The lek is located in a native pasture approximately 500 feet from the ROW.

The approximate lek location was collected with a Trimble GeoXT GPS unit and downloaded into ArcGIS. The lek location is depicted on the included Figure in Attachment A.

Miranda Meehan and Chad Tucker are biologists with numerous years of experience conducting wildlife and habitat surveys in the Upper Great Plains. They have considerable raptor survey experience including numerous raptor and prairie grouse monitoring surveys along pipelines and in areas of proposed oil development.

Please call me at 701-255-1475 if you have any questions or need additional informational.

Sincerely,

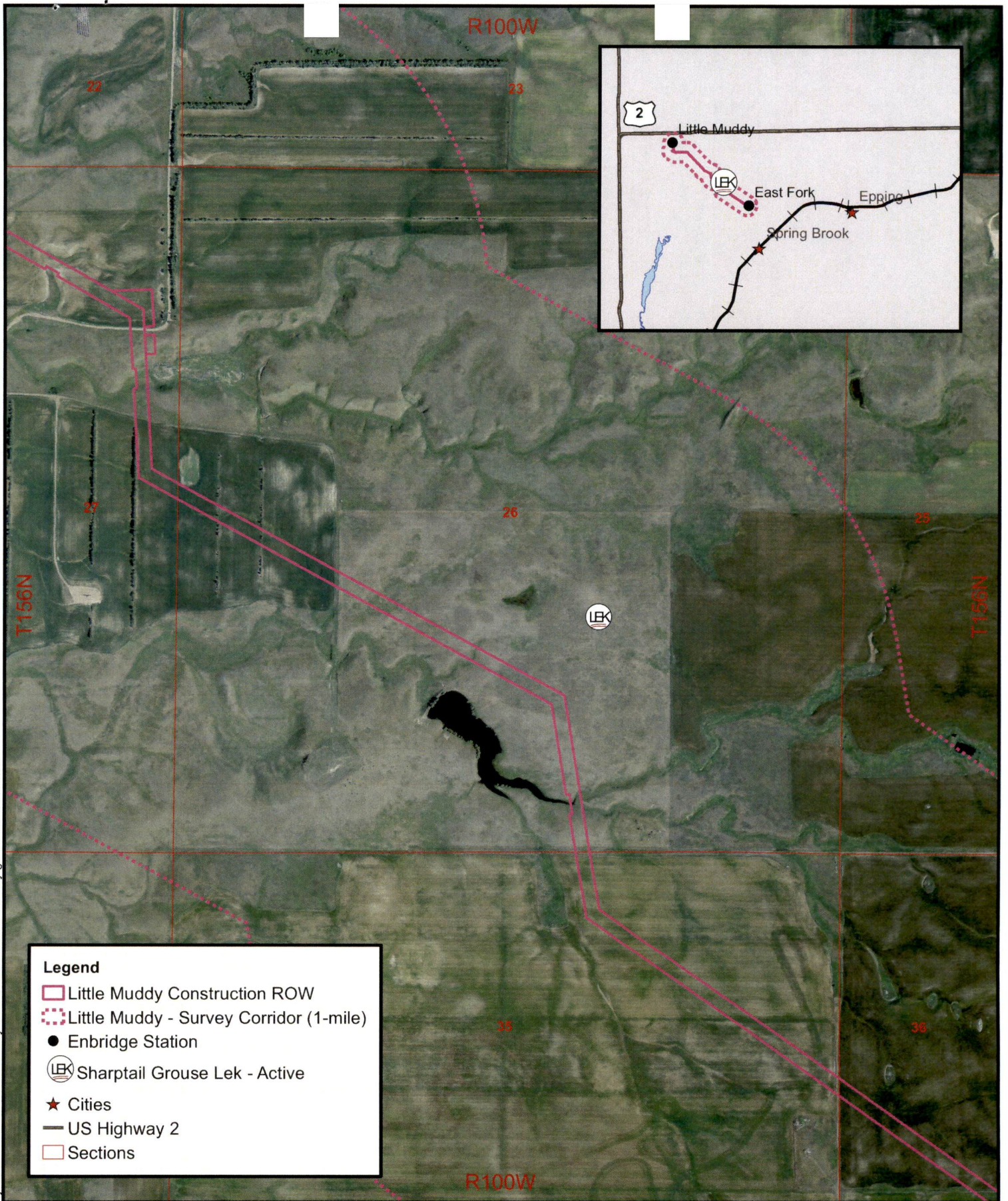
A handwritten signature in black ink that reads "Greg W. Meyer". The signature is written in a cursive, flowing style.

Greg Meyer, MS
Wildlife Biologist

Attachment: Figure

APPENDIX A

Figure



1:12,000

1 inch = 1,000 feet

0 250 500 1,000
Feet

Basemap: 2010 NAIP Orthophoto
Williams County, North Dakota



**Carlson
McCain**

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www.carlsonmccain.com

Figure 1

**Raptor and Wildlife Survey
Little Muddy Project
Enbridge Pipelines (North Dakota) LLC**

TREE AND SHRUB INVENTORY REPORT

Little Muddy Station Connection Project

Project #3882

Prepared for:

Merjent
Mr. Paul Hartzheim
TractorWorks Building
800 Washington Avenue N., Suite 315
Minneapolis, MN 55401

May 29, 2012



2718 Gateway Avenue, Suite 101
Bismarck, ND 58503
Tel 701-255-1475
Fax 701-255-1477
www.carlsonmccain.com

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Appendix B Tree and Shrub Inventory Plan
Appendix C Tree and Shrub Count Forms
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1.0 SCOPE OF WORK

Carlson McCain, Inc. (Carlson McCain) inventoried trees and shrubs along the proposed Little Muddy Station Connection Project (Project) for Enbridge Pipelines (North Dakota) LLC (Enbridge). The proposed Little Muddy Project is oriented northwest to southeast, approximately six miles in length and connects Enbridge's Little Muddy and East Fork Stations. The Project is located in East Fork Township, Williams County, North Dakota.

Trees and shrubs were inventoried in accordance with the North Dakota Public Service Commission (Commission) Tree and Shrub Mitigation Specifications (Specifications) for the Little Muddy Project. The inventory was conducted within the construction right of way (ROW). Carlson McCain biologists Miranda Meehan and Chad Tucker conducted the tree and shrub inventory April 16 and 17, and May 24, 2012.

2.0 PROCEDURES

Carlson McCain utilized the Commission approved “Tree and Shrub Inventory Plan Enbridge Pipelines (North Dakota) LLC, Little Muddy Project” (Inventory Plan) while conducting the tree and shrub inventory. Standard data forms were completed for each inventoried tree/shrub site. Each site was assigned a unique identification that consisted of the site’s section, township, range, and identification number e.g. (26156100-01). Data collected at each site included, observer, date, site id, woodland type, tree/shrub species, tally, and total number. An example can be found in the Inventory Plan (Appendix B).

Trees and shrubs located in windbreaks, shelterbelts, other planted areas, and natural growth areas in the Project ROW were counted by direct stem count. Planted and natural growing trees that were ≥ 1 inch diameter breast height (DBH) were inventoried for mitigation replacement.

Colony forming shrubs, located in native growth areas were delineated with a GPS unit and sampled with the Commission approved Shrub Sampling Method. Chokecherry, western snowberry, and juneberry are common colony-forming shrubs growing within the Project ROW. The Shrub Sampling Method is described in detail in the Inventory Plan (Appendix B).

3.0 RESULTS

Natural growth and planted trees and shrubs were inventoried at ten individual sites along the proposed Little Muddy Project. Nine tree and shrub species were identified within the Project ROW (Tables 1 and 2). Naturally growing tree and shrub areas were found near wetland areas and on hillsides in native landscapes. Planted tree rows are also present within the Project ROW. Certain tree rows contain planted shrubs.

Cottonwood was the only naturally growing tree species found within the Project ROW. Inventoried native shrubs within the Project ROW included chokecherry, western snowberry, juneberry, and northern hawthorn. Green ash is the most common planted tree. Invasive species, Siberian elm and Siberian peashrub were also planted in tree rows. Tree and Shrub Count Forms are included in Appendix C.

Table 1. Summary of Tree and Shrub Inventory

Species	Common Name	Growth Form	Reproduction	Invasive or Nonnative	Natural Growth	Planted	Overall Total
					≥1"	≥1"	
<i>Amelanchier alnifolia</i>	Juneberry	tree/shrub	seed	No	1170	0	1170
<i>Caragana arborescens</i>	Peashrub (Siberian)	shrub	seed	Yes	0	6	6
<i>Crateagus rotundifolia</i>	Northern Hawthorn	tree/shrub	suckering	No	1	0	1
<i>Fraxinus pennsylvanica</i>	Ash (Green)	tree	seed	No	0	13	13
<i>Populus deltoides</i>	Cottonwood	tree	seed/suckering	No	1	0	1
<i>Prunus virginiana</i>	Chokecherry	shrub	seed/suckering	No	72	0	72
<i>Symphoricarpos occidentalis</i>	Western snowberry	shrub	rhizomatous, colony forming	No	24626	0	24626
<i>Ulmus pumila</i>	Elm (Siberian)	tree	seed	Yes	0	1	1
Totals					25870	20	25890

Table 2. Summary of Tree and Shrub Inventory Sites

Inventory Site	Species	Common Name	Natural Growth	Planted	Overall Total
			≥1"	≥1"	
17156100-01	<i>Populus deltoides</i>	Cottonwood	1	0	1
27156100-01	<i>Crateagus rotundifolia</i>	Northern Hawthorn	1	0	1
27156100-02	<i>Prunus virginiana</i>	Chokecherry	51	0	51
	<i>Symphoricarpos occidentalis</i>	Western snowberry	120	0	120
27156100-03	<i>Symphoricarpos occidentalis</i>	Western snowberry	3,997	0	3,997
27156100-04	<i>Fraxinus pennsylvanica</i>	Ash (Green)	0	12	12
26156100-01	<i>Fraxinus pennsylvanica</i>	Ash (Green)	0	1	1
	<i>Ulmus pumila</i>	Elm (Siberian)	0	1	1
26156100-02	<i>Caragana arborescens</i>	Peashrub (Siberian)	0	6	6
26156100-03	<i>Prunus virginiana</i>	Chokecherry	21	0	21
	<i>Symphoricarpos occidentalis</i>	Western snowberry	18,050	0	18,050
26156100-04	<i>Symphoricarpos occidentalis</i>	Western snowberry	2,125	0	2,125
26156100-05	<i>Symphoricarpos occidentalis</i>	Western snowberry	334	0	334
	<i>Amelanchier alnifolia</i>	Juneberry	1,170	0	1,170

4.0 RECOMMENDATIONS

Carlson McCain makes the following recommendations regarding mitigation:

- **Invasive Species.** Invasive species should be replaced with non-invasive native tree/shrub of similar height and canopy suitable for the mitigation area.
- **Colony-forming Species.** Colony-forming and/or suckering species as described in Section 3 should be cut flush with the ground level where necessary to accommodate construction. These areas should then be allowed to regenerate naturally. Where complete removal is necessary, replacement should be made on a 1:4 basis with stem cuttings. A planting ratio of 1:2 is accurate in areas where moisture is not a limiting growth factor.

Enbridge will develop a tree/shrub mitigation plan for Commission's approval.

5.0 REFERENCES

Enbridge Pipelines (North Dakota) LLC. Tree and Shrub Inventory Plan. Enbridge Pipelines (North Dakota) LLC, Little Muddy Project. Case No. PU-11-606. May 2012.

North Dakota Tree Handbook. North Dakota Tree Information Center. North Dakota State University. ND Forest Service. <http://www.ag.ndsu.edu/trees/handbook/ndhand-1.htm>
Accessed April 2012.

North Dakota Public Service Commission. North Dakota Public Service Commission Certification Relating to Order Provisions Transmission Facility Siting. Case Number PU-11-606. Tree and Shrub Mitigation Specifications. 3p.

APPENDIX A

Tree and Shrub Mitigation Specifications

Case No. PU-11-606

Tree and Shrub Mitigation Specifications

Inventory

1. Trees and shrubs anticipated to be cleared, including those that are considered invasive species or noxious weeds (e.g., *Caragana arborescens*, *Elaeagnus angustifolia*, *Rhamnus cathartica*, *Tamarix chinensis*, *T. parviflora*, *T. ramosissima*, *Ulmus pumila*), shall be inventoried before cutting. The inventory shall record the location, number, and species of trees and shrubs.
2. In windbreaks, shelterbelts and other planted areas, trees or shrubs anticipated to be cleared, regardless of size, shall be inventoried for replacement.
3. In native growth areas, trees anticipated to be cleared that are 1-inch diameter at breast height ("dbh") or greater shall be inventoried for replacement.
4. In native growth areas, shrubs anticipated to be cleared in the permanent right-of-way shall be inventoried for replacement.
5. In native growth areas outside the permanent right-of-way, shrubs shall be cut flush with the surface of the ground, taking care to leave the naturally occurring seed bank and root stock intact. If soil disturbance is necessary, the native topsoil shall be preserved and replaced after construction. Shrubs shall be allowed to regenerate naturally where native topsoil is preserved and replaced. Where native topsoil is not preserved and replaced, shrubs anticipated to be cleared shall be inventoried for replacement.
6. In native growth areas, trees and shrubs may be inventoried by actual count or by sampling method that will properly represent the woody vegetation population. A sampling plan developed by the company, filed with the North Dakota Public Service Commission (Commission) and approved prior to the start of construction shall define the sampling method to be used for trees, for tall shrubs and for low shrubs. The data from the sample plots shall be extrapolated to the total acreage of the wooded area to be cleared to determine the species and quantity of trees and shrubs to be replaced.

Clearing for Construction

7. Trees and shrubs shall be selectively cleared, leaving mature trees and shrubs intact where practical.
8. The width of clear cuts through windbreaks, shelterbelts and all other wooded areas shall be limited to 50 feet or less unless otherwise approved by the NDPSC.
9. If the area of trees or shrubs actually cleared differs from the area inventoried, the difference in number of trees and shrubs to be replaced shall be noted on the inventory.

Replacement

10. Prior to tree/shrub replacement, documentation identifying the number and variety of trees removed as well as the mitigation plan for the proposed number, variety, type, location and date of replacement plantings shall be filed with the NSPSC for approval.
11. Two 2-year-old saplings shall be planted for every one tree removed. Two shrubs (stem cuttings) shall be planted for every one shrub removed.
12. Except in the case of invasive or noxious species, trees and shrubs shall be replaced by the same species or similar species, suitable for North Dakota growing conditions as recommended by the North Dakota Forest Service. Invasive or noxious species shall be replaced by similar non-invasive or non-noxious species suitable for North Dakota growing conditions as recommended by the North Dakota Forest Service.
13. Landowners shall be given the option of having replacement trees/shrubs planted off the right-of-way on the landowner's property or waiving that requirement in writing and allowing those replacement trees/shrubs to be planted at alternative locations.
14. At the conclusion of the project, documentation identifying the actual number, variety, type, location, and date of the replacement plantings shall be filed with the NDPSC.
15. Tree/shrub replacements shall be inspected once a year for three years, on about the anniversary of the plantings, and, on or shortly before October 1 of each year, a report shall be submitted to the NDPSC documenting the condition of replacement planting and any woodlands work completed. If after three years from the anniversary of the plantings the survival rate is less than 75%, the NDPSC may order additional planting(s).

APPENDIX B

Tree and Shrub Inventory Plan

Tree and Shrub Inventory Plan

**Enbridge Pipelines (North Dakota) LLC
Little Muddy Station Connection Project**

Case No. PU-11-606

Prepared for:

Enbridge Pipelines (North Dakota) LLC

May 2012

Introduction

Enbridge Pipelines (North Dakota) LLC proposes to construct, own, and operate an approximate six-mile-long pipeline from the new Little Muddy Station to the existing Enbridge East Fork Station in Williams County, North Dakota. The case number for the Little Muddy Station Connection Project (Project) is PU-11-606. Enbridge Pipelines (North Dakota) LLC will comply with the tree and shrub mitigation specifications as outlined in the North Dakota Public Service Commission (Commission) Certification Relating to Order Provisions Transmission Facility Siting. Enbridge Pipelines (North Dakota) LLC proposes to contract Carlson McCain, Inc. for the tree and shrub inventory. The tree and shrub mitigation specifications are found in Appendix A of this Tree and Shrub Inventory Plan. Specifically, this Plan outlines the process for completing the tree and shrub inventory.

Windbreaks, Shelterbelts, and Other Planted Areas

In windbreaks, shelterbelts, and other planted areas, trees and shrubs anticipated to be cleared regardless of size will be counted by direct stem count. Trees that are one-inch or greater diameter at breast height (DBH) will be inventoried for replacement.

In windbreaks, shelterbelts, and other planted areas, shrubs that form colonies (such as buffalo currant, chokecherry, dogwood, plum, pussy willow, sandbar willow, western snowberry, and Woods rose) and that are cut flush with the ground surface and not cleared, so as to leave the naturally occurring seed bank and root stock intact will not be direct stem counted. Instead, the area will be delineated on an aerial photo and indicated on construction drawings to not be cleared or have the ground disturbed. If ground disturbance occurs, Enbridge Pipelines (North Dakota) LLC will conduct a direct stem count of the disturbance area or estimate the number of stems cleared using a Commission approved sampling estimate method (see Shrub Sampling Method, Appendix C).

Native Growth Areas

In native growth areas, trees that are one-inch or greater diameter at breast height (DBH) will be inventoried for replacement.

In high-density woodland areas, a Commission approved sampling method may be used in place of individual counting (see Tree Sampling Method, Appendix D).

In native growth areas, shrubs that form colonies (such as buffalo currant, chokecherry, dogwood, plum, pussy willow, sandbar willow, western snowberry, and Woods rose) and that are cut flush with the ground surface and not cleared, so as to leave the naturally occurring seed bank and root stock intact will not be direct stem counted. Instead, the area will be delineated on an aerial photo and indicated on construction drawings to not be cleared or have the ground disturbed. If ground disturbance occurs, Enbridge Pipelines (North Dakota) LLC will conduct a direct stem count of the disturbance area or estimate the number of stems cleared using a Commission approved sampling estimate method (see Shrub Sampling Method, Appendix C).

Tree Sampling Method

Per the Commission's Tree and Shrub Inventory Specifications (Inventory Specification No. 6 in Appendix A), in high-density woodland areas, Enbridge Pipelines (North Dakota) LLC proposes the following sampling method for the tree inventory. The dimensions of the entire woodland stand within the Project right-of-way (ROW) will be delineated to determine the area of the woodland. Tree and shrub counts will

be made in representative sample site areas within the woodland. Transects will be developed and the circular sample sites placed along the transect. The number of sample sites within a woodland stand will be dependent on woodland size and uniformity. A smaller, more uniform woodland stand would require fewer sample sites than a larger, less uniform woodland stand.

The sample sites will be 0.10 acre (37.42-foot radius circle). A rope 37.42 feet in length will be attached to a central stake and rotated in a circle (Appendix D). Trees and shrubs within the circle will be counted. Tree and shrub density for the entire woodland area within the ROW will be calculated based on the average density from all of the sample locations within the woodland, weighted against the woodland size.

Shrub Sampling Method

Per the Commission's Tree and Shrub Inventory Specifications (Inventory Specification No. 6 in Appendix A), in high-density woodland areas, Enbridge Pipelines (North Dakota) LLC proposes the following sampling method for the shrub inventory. The dimensions of the entire woodland stand within the ROW will be delineated to determine the area of the woodland. Shrub counts will be made in representative sample site areas within the woodland. Transects will be developed and the circular sample sites placed along the transect. The number of sample sites within a woodland stand will be dependent on woodland size and uniformity. A smaller, more uniform woodland stand would require fewer sample sites than a larger, less uniform woodland stand.

The sample sites will be 0.01 acre (3.72-foot radius circle). A rope 3.72 feet in length will be attached to a central stake and rotated in a circle (Appendix C). Shrubs within the circle will be counted. Tree and shrub density for the entire woodland area within the ROW will be calculated based on the average density from all of the sample locations within the woodland, weighted against the woodland size.

Appendix A

Case No. PU-11-606

Tree and Shrub Mitigation Specifications

Inventory

1. Trees and shrubs anticipated to be cleared, including those that are considered invasive species or noxious weeds (*e.g.*, *Caragana arborescens*, *Elaeagnus angustifolia*, *Rhamnus cathartica*, *Tamarix chinensis*, *T. parviflora*, *T. ramosissima*, *Ulmus pumila*), shall be inventoried before cutting. The inventory shall record the location, number, and species of trees and shrubs.
2. In windbreaks, shelterbelts and other planted areas, trees or shrubs anticipated to be cleared, regardless of size, shall be inventoried for replacement.
3. In native growth areas, trees anticipated to be cleared that are 1-inch diameter at breast height ("dbh") or greater shall be inventoried for replacement.
4. In native growth areas, shrubs anticipated to be cleared in the permanent right-of-way shall be inventoried for replacement.
5. In native growth areas outside the permanent right-of-way, shrubs shall be cut flush with the surface of the ground, taking care to leave the naturally occurring seed bank and root stock intact. If soil disturbance is necessary, the native topsoil shall be preserved and replaced after construction. Shrubs shall be allowed to regenerate naturally where native topsoil is preserved and replaced. Where native topsoil is not preserved and replaced, shrubs anticipated to be cleared shall be inventoried for replacement.
6. In native growth areas, trees and shrubs may be inventoried by actual count or by sampling method that will properly represent the woody vegetation population. A sampling plan developed by the company, filed with the North Dakota Public Service Commission (Commission) and approved prior to the start of construction shall define the sampling method to be used for trees, for tall shrubs and for low shrubs. The data from the sample plots shall be extrapolated to the total acreage of the wooded area to be cleared to determine the species and quantity of trees and shrubs to be replaced.

Clearing for Construction

7. Trees and shrubs shall be selectively cleared, leaving mature trees and shrubs intact where practical.
8. The width of clear cuts through windbreaks, shelterbelts and all other wooded areas shall be limited to 50 feet or less unless otherwise approved by the NDPSC.
9. If the area of trees or shrubs actually cleared differs from the area inventoried, the difference in number of trees and shrubs to be replaced shall be noted on the inventory.

Replacement

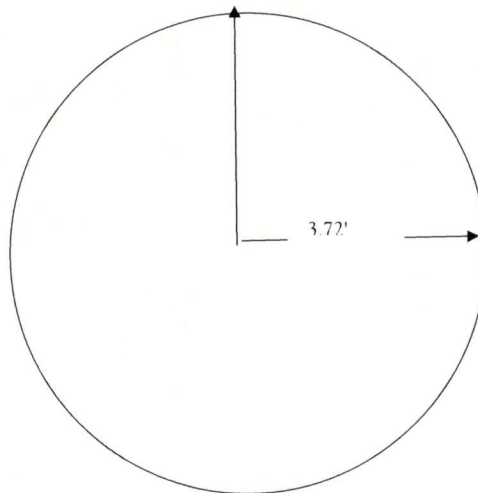
10. Prior to tree/shrub replacement, documentation identifying the number and variety of trees removed as well as the mitigation plan for the proposed number, variety, type, location and date of replacement plantings shall be filed with the NSPSC for approval.
11. Two 2-year-old saplings shall be planted for every one tree removed. Two shrubs (stem cuttings) shall be planted for every one shrub removed.
12. Except in the case of invasive or noxious species, trees and shrubs shall be replaced by the same species or similar species, suitable for North Dakota growing conditions as recommended by the North Dakota Forest Service. Invasive or noxious species shall be replaced by similar non-invasive or non-noxious species suitable for North Dakota growing conditions as recommended by the North Dakota Forest Service.
13. Landowners shall be given the option of having replacement trees/shrubs planted off the right-of-way on the landowner's property or waiving that requirement in writing and allowing those replacement trees/shrubs to be planted at alternative locations.
14. At the conclusion of the project, documentation identifying the actual number, variety, type, location, and date of the replacement plantings shall be filed with the NDPSC.
15. Tree/shrub replacements shall be inspected once a year for three years, on about the anniversary of the plantings, and, on or shortly before October 1 of each year, a report shall be submitted to the NDPSC documenting the condition of replacement planting and any woodlands work completed. If after three years from the anniversary of the plantings the survival rate is less than 75%, the NDPSC may order additional planting(s).

Appendix C

Shrub Sampling Method

Sample Plot

- Circular sample plots with a radius of 3.72 feet, or area equivalent to 0.01 acres created with a central stake and rope.
- The rope, 3.72 feet in length, anchored to the central stake and rotated in a circle



Shrub Counts

- Direct stem counts from each plot
- Talled on work sheet by species

Woodland size

- GPS points taken in the field around boundary
- GIS used to calculate acreage

Calculations

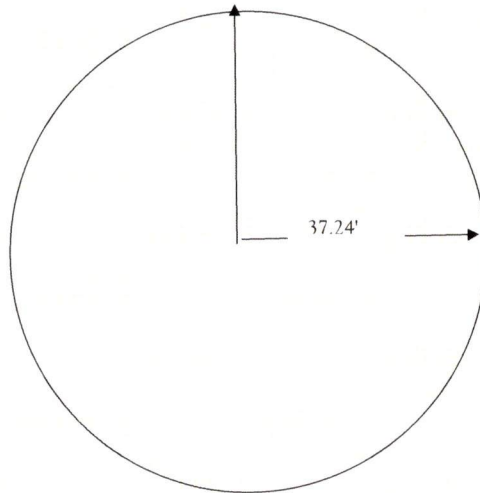
- Average determined from all plots sampled in a woodland area or area is equivalent to stems/0.01 acre
- Converted to a per acre basis (average times 100)
- Total number per woodland determined by multiplying average number per acre with woodland size

Appendix D

Tree Sampling Method

Sample Plot

- Circular sample plots with a radius of 37.24 feet, or area equivalent to 0.10 acres created with a central stake and rope.
- The rope, 37.24 feet in length, anchored to the central stake and rotated in a circle



Tree Counts

- Direct stem counts from each sample site
- Talled on work sheet by species

Woodland size

- GPS points taken in the field around boundary
- GIS used to calculate acreage

Calculations

- Average determined from all plots sampled in a woodland area or area is equivalent to stems/0.10 acre
- Converted to a per acre basis (average times 10)
- Total number per woodland determined by multiplying average number per acre with woodland size

APPENDIX C

Tree and Shrub Count Forms

TREE/SHRUB INVENTORY

Project Name: *Little Muddy*

Sampled by: *CT / mmj*

Date: *4/16/12*

Location / Site ID:

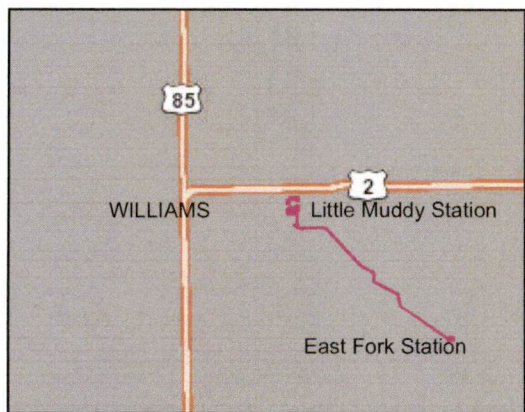
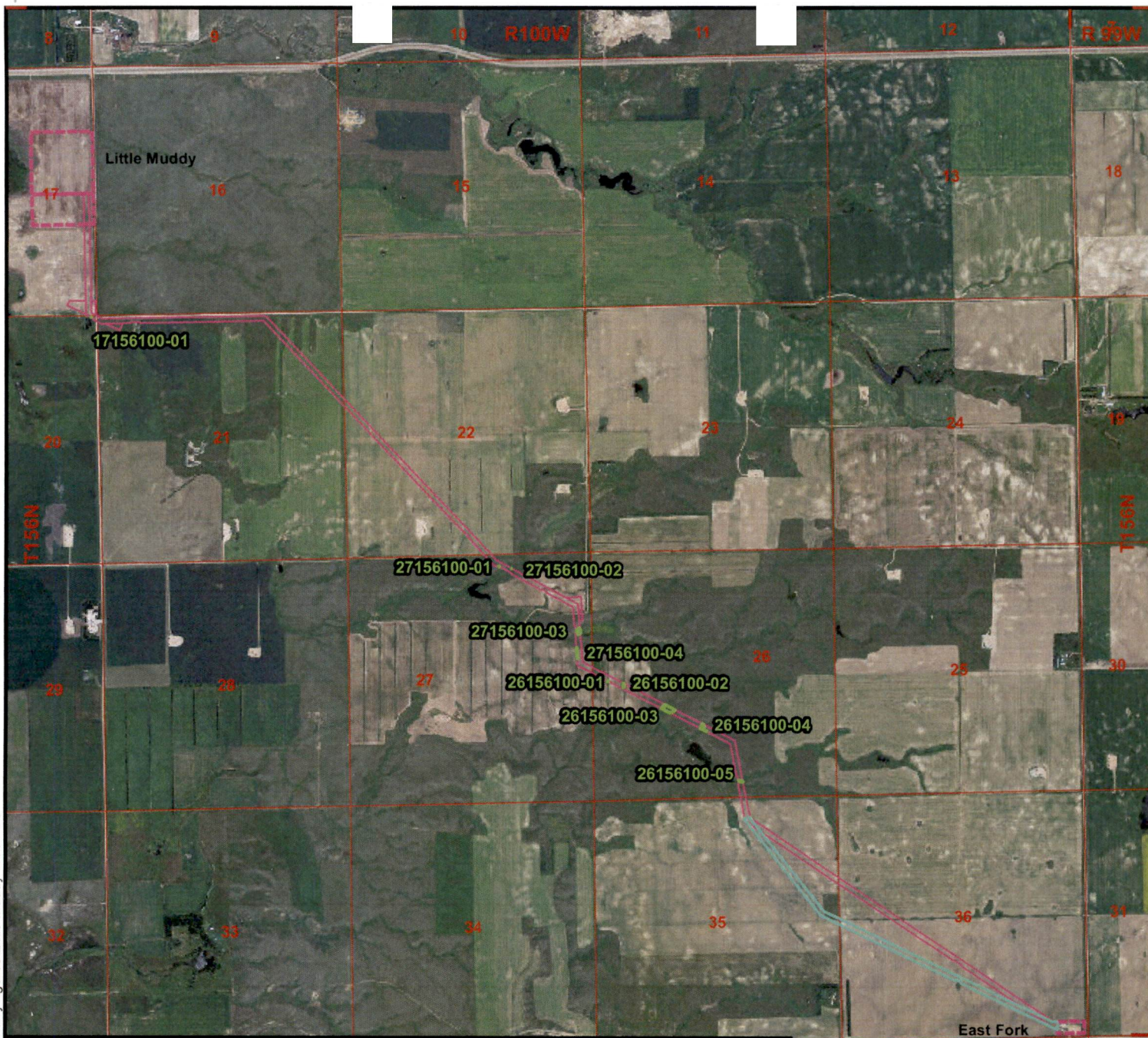
Woodland Type (circle): Native Planted

Plot Size (circle): 3.72 ft 37.2 ft

SPECIES	Planted	Native		TOTAL
	All trees shrubs	Trees >1"	All shrubs	
<i>17156100-01</i>				
<i>POPDEL</i>		<i>1</i>		<i>1</i>
<i>27156100-01</i>				
<i>CRAROT</i>			<i>1</i>	<i>1</i>
<i>27156100-02</i>				
<i>FRUVIR</i>			<i>51</i>	<i>51</i>
<i>SYMOCC</i>			<i>120</i>	<i>120</i>
<i>27156100-03</i>				
<i>SYMOCC (3.72' plot)</i>			<i>22</i>	<i>3997</i>
<i>27156100-04</i>				
<i>FRAPEN</i>	<i>12</i>			<i>12</i>
<i>26156100-01</i>				
<i>ULMPUM</i>	<i>1</i>			<i>1</i>
<i>FRAPEN</i>	<i>1</i>			<i>1</i>
<i>26156100-02</i>				
<i>CARARB</i>	<i>6</i>			<i>6</i>

APPENDIX D

Figure



Legend

- Little Muddy Construction ROW
- McCauley Reroute
- Enbridge Stations
- Little Muddy Trees
- Section

1:38,016

1 inch = 0.6 miles

0 0.15 0.3 0.6 Miles

Basemap: NAIP Orthophoto 2010
Williams County, North Dakota



**Carlson
McCain**

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www.carlsonmccain.com

Figure 1
Tree / Shrub Locations
Little Muddy Project
Enbridge Pipelines (North Dakota)
LLC



May 29, 2012

Mr. Paul Hartzheim
Merjent
TractorWorks Building
800 Washington Avenue N., Suite 315
Minneapolis, MN 55401

Re: **Little Muddy Station Connection Project Noxious Weed Report**

Dear Mr. Hartzheim,

Carlson McCain, Inc. is pleased to submit the Little Muddy Station Connection Project (Project) Noxious Weed Report for your review. The field evaluation was conducted April 16th and 17th and May 24, 2012 by Carlson McCain, Inc. Biologists, Miranda Meehan and Chad Tucker.

Numerous noxious weed patches were identified and delineated along the Project's construction right of way (ROW) (Appendix A, Figure 1). Leafy spurge (*Euphorbia esula*) was the primary noxious weed documented within the ROW. A small patch of Canada thistle (*Cirsium arvense*) was also documented during the field evaluation. An agriculture field located in Section 35, T156N, R100W, along the McCauley reroute was not cultivated in 2012 and so contains a mixture of leafy spurge and Canada thistle. Normal farming practices will eliminate this patch. The ROW was traversed on foot. The spatial locations of the noxious weed patches were collected with a Trimble GeoXT GPS.

Noxious weeds documented within the ROW were found in native prairie areas, were commonly associated with wetlands and drainages, and within an uncultivated agricultural field.

Table 1. Noxious Weed Totals in Project Area.

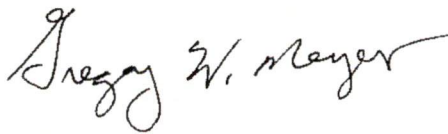
Weed Name	Genus species	Acreage
Canada thistle	<i>Cirsium arvense</i>	0.090
Leafy spurge	<i>Euphorbia esula</i>	0.494
C. thistle / L. spurge	<i>C. arvense</i> / <i>E. esula</i>	7.718

Table 2. Noxious Weed Summary in Project Area.

ID	Section	Township	Range	County	Name	Genus species	Acreage
21126100-01	21	126	100	Williams	Canada Thistle	Cirsium arvense	0.0903
27156100-01	27	156	100	Williams	Leafy Spurge	Euphorbia esula	0.0535
26156100-01	26	156	100	Williams	Leafy Spurge	Euphorbia esula	0.0060
26156100-02	26	156	100	Williams	Leafy Spurge	Euphorbia esula	0.0625
26156100-03	26	156	100	Williams	Leafy Spurge	Euphorbia esula	0.0470
26156100-04	26	156	100	Williams	Leafy Spurge	Euphorbia esula	0.2427
26156100-05	26	156	100	Williams	Leafy Spurge	Euphorbia esula	0.0826
35156100-01	35	156	100	Williams	C. thistle / L. spurge	C. arvense / E. esula	7.718

Please call me at 701-255-1475 if you have any questions or need additional informational.

Sincerely,



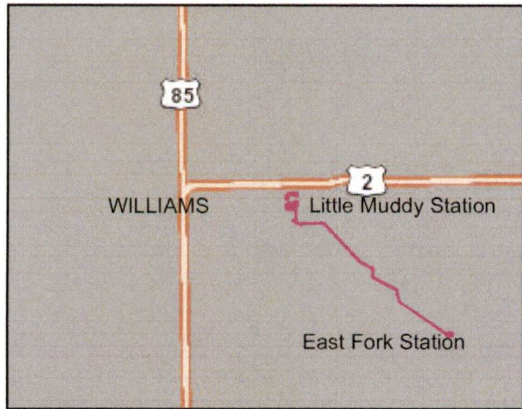
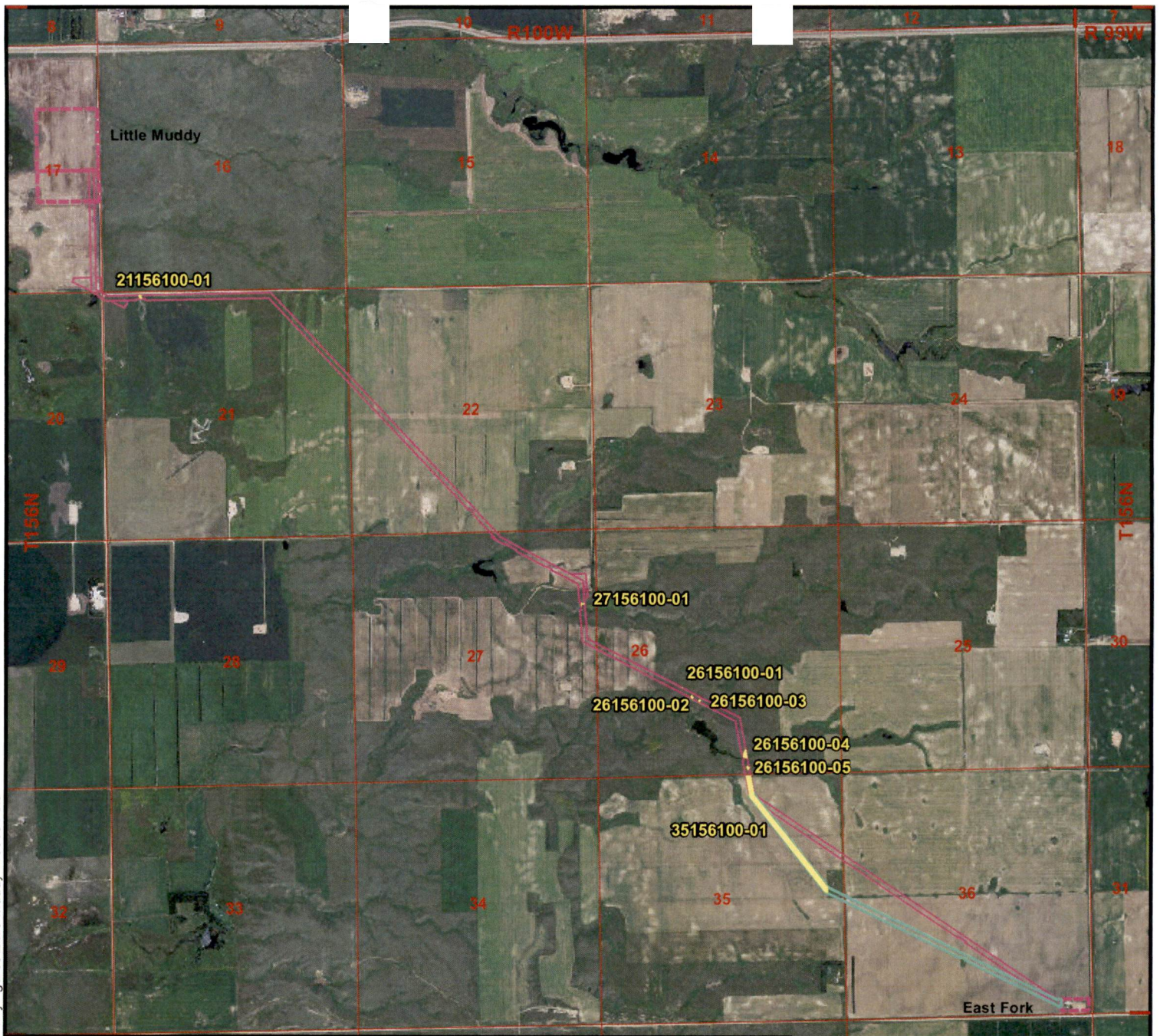
Greg Meyer, MS
Ecologist

Attachment - Appendix A, Figure.

APPENDIX A

Figure

E:\Projects\ENB\3882 - Little Muddy Tree-Shrub-Weed Inventory\figures\Little Muddy Weeds.mxd



Legend

- Little Muddy Construction ROW
- McCauley Reroute
- Enbridge Stations
- Inventoried Weeds
- Section

1:38,016
 1 inch = 0.6 miles
 0 0.15 0.3 0.6 Miles
 Basemap: NAIP Orthophoto 2010
 Williams County, North Dakota




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Figure 1
Weed Locations
Little Muddy Project
Enbridge Pipelines (North Dakota)
LLC