



# Public Service Commission

## State of North Dakota

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COMMISSIONERS

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June 29, 2021

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Mr. Jeff Fleischman, Chief  
Denver Field Division  
Office of Surface Mining  
P.O. Box 11018  
Casper WY 82602-5004

**RE: Request for Authorization to Proceed for 2021 Emergency De Pue Coal Refuse Fire, Remote Backfilling at the 2021 Belfield Exploratory Drilling Site and 2021 North and South Sinkhole Filling Projects.**

Dear Mr. Fleischman:

Enclosed is the documentation to support our Request for Authorization to Proceed with the **2021 Emergency De Pue Coal Refuse Fire, Remote Backfilling at the Belfield Exploratory Drilling Site and 2021 North and South Sinkhole Filling Projects**. Environmental assessments for the Belfield Site and Sinkhole Filling are attached as is the categorical exclusion for the De Pue Refuse Fire.

We have requested concurrence for our proposed 2021 Projects from the State Historical Society of North Dakota, U.S. Fish and Wildlife Service, North Dakota Parks and Recreation Department and the North Dakota Department of Environmental Quality. Copies of our letters and the responses we have received are attached.

All affected property owners for these proposed 2020 AML Projects have been or will be contacted, and consents for right-of-entry will be executed before any work begins.

A list of eAMLIS Problem Area Description numbers for the proposed sites is included below. We have posted priority documentation for each of the 2021 sites in the documents section of their respective eAMLIS Problems within their Problem Area Descriptions (PADs). If you need more information or have any questions, please call Joan Breiner at 701-328-2412 or me at 701-328-4099.

Sincerely,

Dean K. Moos  
Director, Reclamation and AML Divisions

Enclosures

## List of Attachments

Brief narratives about the proposed projects and project location maps.

Standardized environmental assessments for the proposed Remote Backfilling at the 2021 Belfield Exploratory Drilling Site and 2021 North and South Sinkhole Filling Projects. Categorical Exclusion for proposed 2021 Emergency De Pue Coal Refuse Fire.

Requests for concurrence for 2021 proposed AML Projects and the responses received to date:

ND State Historical Society (response not received).

ND Department of Environmental Quality (response not received).

ND Parks & Recreation Department (response not received).

U.S. Fish and Wildlife Service (response not received).

Eligibility determinations for proposed projects.

AMLIS PAD Numbers for proposed project sites:

<b>PAD No.</b>	<b>Name</b>	<b>Project</b>
ND000004	Buechler/Knorr	Buechler/Velva Phase 2
ND000016	Zenith	Exploratory Drilling – Belfield Site
ND000004	Buechler/Knorr	North Sinkhole Filling
ND000019	Garrison	North Sinkhole Filling
ND000001	Wilton	North Sinkhole Filling
ND000090	Parshall	North Sinkhole Filling
ND000029	Noonan	North Sinkhole Filling
ND000046	West Williston A	North Sinkhole Filling
ND000147	Hanks	North Sinkhole Filling
ND000014	Beulah/Zap	South Sinkhole Filling
ND000124	Haynes	South Sinkhole Filling
ND000528	Scranton	South Sinkhole Filling

**STANDARDIZED ENVIRONMENTAL ASSESSMENT**

**2017-2021 Sinkhole Filling Abandoned Mine Lands Projects  
Various Problem Areas and Locations in North Dakota**

**Prepared by**

**North Dakota Public Service Commission**

**In Cooperation with**

**United States Department of the Interior Office of Surface Mining Reclamation  
and Enforcement Casper Field Office  
Casper Field Office**

**(Revised 2021)**

## Table of Contents

<b>Chapter 1: Introduction</b> .....	3
A.    Need for the Action .....	3
B.    Project Background .....	3
<b>Chapter 2: Description of the Proposed Project and Alternatives</b> .....	6
A.    No Action Alternative .....	6
B.    Proposed Action .....	6
C.    Other Reasonable Alternatives .....	7
<b>Chapter 3: Environmental Impacts</b> .....	8
A.    Cultural or historic resource values .....	8
B.    Water quality values .....	8
C.    Wetlands values .....	8
D.    Floodplain values .....	8
E.    Wildlife .....	8
F.    Prime and unique farmland values .....	9
G.    Recreational resource values .....	9
H.    Air quality .....	9
I.    Socioeconomic factors .....	9
J.    Political factors .....	9
K.    Existing Vegetative Cover .....	9
L.    Threatened and Endangered Plant Species .....	10
M.    Anticipated dates of Reclamation .....	10
N.    Estimated Construction Cost .....	10
O.    Off-site Borrow and Disposal Areas .....	10
P.    Noise Pollution .....	11
Q.    Environmental Justice Policy .....	11
<b>Chapter 4: Consultation and Coordination</b> .....	12
Preparers .....	12

## Chapter 1: Introduction

### A. Need for the Action

The principal objective of the Abandoned Mine Lands (AML) Division of the Public Service Commission (PSC) is to reclaim hazardous abandoned surface and underground coal mines.

Some of the most hazardous, widespread and frequent mine-related problems in North Dakota are deep sinkholes caused by underground mine collapse. The AML Division has received reports of personal injury, loss of livestock and property damage caused by underground mine collapse sinkholes. Since 2005, nearly 2,500 dangerous sinkholes have been filled in western North Dakota. Most of these were reported by property owners and renters, state and local government agents and the public. Sinkholes are a serious hazard to landowners and the public. This environmental assessment is for sinkhole filling projects that are expected to be conducted in the five year period between 2017 and 2021.

### B. Project Background

Most of western North Dakota is underlain by lignite coal and it has been estimated that North Dakota contains 25 billion tons of strippable lignite reserves. At the current rate of mining, it would take more than 800 years to exhaust North Dakota's supply of economically recoverable lignite. (from Strippable Lignite Deposits of North Dakota, Murphy, E. 2001, North Dakota Geological Survey, Miscellaneous Map #34)

Lignite mining was an important part of the settlement of western North Dakota. The earliest documented commercial underground lignite mine opened near Sims, about 30 miles west of Bismarck, in 1873. By 1910, more than 80 commercial mines were in operation producing over 400,000 tons annually. Production from North Dakota underground coal mines peaked in the 1930s, as the steam shovel made strip mines more efficient and cheaper. The last commercial underground coal mine in North Dakota closed in the 1960s. The AML Division estimates there are at least 500 abandoned underground coal mines in twenty-three counties in western North Dakota.

Mined lignite seams in North Dakota are thick, from 6-40 feet, usually overlain with less than 100 feet of soft overburden soils. Underground mining leaves large subsurface voids. As these mine voids collapse, they create large and deep sinkholes that often may occur suddenly and can be a serious hazard to landowners and the public.

The AML Division has been conducting projects to fill sinkholes since the AML program began. One of the earliest projects was conducted near Scranton, ND, from 1982-87 (see Photo 1).



**Photo 1: Sinkholes near Scranton, ND, circa 1980**

Since the early 1990s, the AML Division has used a two-pronged approach for underground mine reclamation. On high-use areas that are undermined, such as residential and commercial developments and public roads, drilling and grouting projects are conducted in order to prevent mine subsidence. Holes are drilled into the underground mine voids and cementitious grout is pumped to fill them and prevent collapse.

Sinkhole filling projects are conducted on areas where mine collapse has already occurred and dangerous sinkholes are present. In these projects, topsoil is removed and saved from within and around the sinkholes. Then the sinkholes are excavated and filled, and compacted usually with soil materials. Topsoil is replaced and the areas are tilled and seeded. In 2020, approximately 180 dangerous sinkholes were filled by the Public Service Commission AML Division at locations near Beulah, Bowman, Dickinson, Haynes, Havelock, SW Tioga, White Earth, Williston and Wilton. Table 1 is a summary of sinkhole filling projects conducted between 2011 and 2020.

Occasionally, as needed, emergency and maintenance AML work is included with sinkhole filling projects. In 2015, emergency coal refuse fires were extinguished near Haynes and Williston. Also in 2015, minor maintenance work was conducted at the Richter Mine near Glen Ullin. This surface coal mine was reclaimed in a 2013 AML project, but there were a few barren spots where vegetation was not successful. Maintenance included salvaging and respreading topsoil and seeding eight barren spots comprising about 1 acre of this 55-acre mine site.

**Table 1: North Dakota Sinkhole Filling Projects 2011-2020**

<b>Year</b>	<b>Locations (Nearest Cities)</b>	<b>Sinkholes</b>	<b>Cost</b>
2011	Burlington, Noonan, Hanks, Beach, Haynes, Dickinson, Richardton, New Salem, Parshall, Garrison, Wilton, Washburn	172	\$153,250.50
2012	Haynes Dickinson, Wilton, Velva, Baldwin	41	\$61,772.75
2013	Beulah, Zap, Richardton, Dickinson, Williston, Hanks, Noonan, Velva, Washburn, Wilton, Haynes, Scranton	180	\$128,709.00
2014	Haynes, Dickinson, Richardton, New Salem, Beulah, Garrison, Wilton	174	\$81,487.00
2015	Beulah, Zap, Glen Ullin (Surface), New Leipzig, Scranton, Dickinson, Wilton	207	\$77,224.00
2016	Velva, Noonan, Dickinson, Haynes, Bowman, Wilton, Baldwin, Beulah	138	\$87,892.96
2017	Beulah, Bowman, Garrison, Hanks, New Salem, Noonan, Velva, Williston and Wilton	163	\$103,990.50
2018	Beulah, Bowman, Garrison, Hanks, Heil, New Leipzig, New Salem, Noonan, Richardton, Velva, Williston, Wilton and Zenith	177	\$105,723.50
2019	Beulah, Williston, Wilton	104	\$72,081.16
2020	Potential Sites: Beulah, Bowman, Dickinson, Haynes, Havelock, SW Tioga, White Earth, Williston, Wilton	180	\$116,210.06
2021	Potential Sites: Beulah, Garrison, Hanks, Haynes, Noonan, Parshall, Scranton, Velva, Williston, Wilton, Zap		
	<b>Totals</b>	<b>1,536</b>	<b>\$988,341.43</b>

## **Chapter 2: Description of the Proposed Project and Alternatives**

### **A. No Action Alternative**

The no action option does not solve the potentially hazardous conditions AML conditions at the site.

### **B. Proposed Action**

The current standard requirements for sinkhole filling projects are as follows.

1. Remove and stockpile topsoil or other suitable plant growth material from around/within sinkhole and borrow areas.
2. Excavate the sinkhole (as directed) with a backhoe or excavator.
3. Backfill sinkhole with approved fill material; if trucks are used, compaction with backhoe bucket and wheels is required between dumps. If a scraper is used, holes shall be ramped into and filled in such a way to get maximum compaction.
4. Grade area to blend with adjacent topography and re-establish drainage.
5. Respread topsoil evenly over disturbed areas and finish-grade.
6. Seed disturbed areas with the required mixture of locally adapted native grasses.

Sinkhole filling projects have been conducted annually since the early 1990s. These projects are usually conducted in the fall, after harvest, at locations where dangerous sinkholes have been observed or reported. The sinkholes are usually filled with soil materials taken from nearby borrow areas. In special cases where the sinkhole extends underneath a building foundation or roads, cementitious grout may be used injected into the voids.

Borrow areas, where fill dirt is taken, must be approved in advance by the Commission's project manager. These borrow areas will be located as near as possible to the sinkholes. Usually, these borrow areas are spoil piles from a nearby abandoned surface mine or come from "over-excavating" a large sinkhole(s) on a hillside and grading it into a shallow swale consistent with the surrounding topography.

It is impossible to predict exactly where sinkholes will occur during the period from 2021. However, it is expected that nearly all of them will occur in areas where sinkhole filling has been conducted previously. Maps of areas where sinkhole filling projects have been conducted between 2005 and 2020 are included as attachments to this document as well as potential sites for 2021.

The total areas of disturbance for sinkhole filling projects vary, but are restricted to the immediate area of the sinkholes and borrow area(s). The total area disturbed by the 2020 Sinkhole Filling AML Project was approximately 8 acres. Considering that 180

sinkholes were filled, the average area disturbed for each sinkhole was less than 0.04 acres.

Sinkhole filling projects are a relatively low-cost means of eliminating immediate hazards of abandoned underground mines that directly affect the public. These projects are a benefit to farmers, ranchers, property owners and the public. The main drawback is that sinkhole filling only addresses the immediate problem of existing sinkholes and does not prevent subsequent occurrences.

### **C. Other Reasonable Alternatives**

Other reclamation options may include complete excavation (daylighting), drilling and grouting, blasting, fencing, property buyout or condemnation. Complete excavation (daylighting), drilling and grouting and blasting are cost-prohibitive. Fencing is not considered a long-term viable option. Property buyout or condemnation does not address the AML problems at these sites.

## Chapter 3: Environmental Impacts

**A. Cultural or historic resource values (the Archaeological Resources Protection Act of 1979; the Archaeological and Historic Preservation Act of 1974; the National Historic Preservation Act of 1986, as amended; the Antiquities Act of 1906, Executive Order 11593, concerning the protection and enhancement of the cultural environment; the American Indian Religious Freedom Act of 1978; the Historic Sites Act of 1935; and OMB Circular A-102).**

Reclamation activities will be conducted in a manner that should have no significant effect on cultural or historic resources. This will include minimizing disturbances and restricting them to the immediate area of the sinkholes and borrow area(s).

**B. Water quality values (Clean Water Act, as amended)**

Reclamation activities will be conducted in a manner that should have no significant effect on surface or groundwater quality or quantity. This will include minimizing disturbances and restricting them to the immediate area of the sinkholes and borrow area(s). If necessary, erosion may be controlled with best management practices including mulching, installation of wattles, rip-rap, flexamat, and others.

**C. Wetlands values (Clean Water Act, Executive Order 11990, and Army/EPA Memorandum of Agreement (MOA) Concerning the Determination of Mitigation under Section 404(b) (1) Guidelines)**

Reclamation activities will be designed in a way that will not diminish the size or function of any wetlands. Reclamation activities should not affect any wetland areas.

**D. Floodplain values (Executive Order 11988)**

No planned activities will adversely affect an identified floodplain.

**E. Wildlife (Endangered Species Act and Fish and Wildlife Coordination Act)**

Reclamation activities will be conducted in a manner that should have no significant effect on wildlife. Threatened, Endangered or Candidate species in North Dakota identified by the U.S. Fish and Wildlife Service include Interior Least Tern (*Sterna antillarum*), Whooping Crane (*Grus Americana*), Pallid Sturgeon (*Scaphirhynchus albus*), Gray Wolf (*Canis lupus*), Piping Plover (*Charadrius melodus*), Northern Long-Eared Bat (*Myotis septentrionalis*), Sprague's Pipit (*Anthus spragueii*), Black-footed Ferret (*Mustela nigripes*), Poweshiek Skipperling (*Oarisma Poweshiek*), Rusty Patched Bumble Bee (*Bombus affinis*), Dakota skipper (*Hesperia dacotae*), and Rufus Red Knot (*Calidris canutus rufa*). None of these species are likely to be found or disturbed by the 2020-2021 Sinkhole Filling AML Project.

**F. Prime and unique farmland values (Farmland Protection Policy Act)**

Reclamation activities will be designed in a way that will not diminish the integrity or utility of prime farmland.

**G. Recreational resource values (Wild and Scenic Rivers Act, Clean Air Act)**

There are no lands in this area classified as wilderness areas or lands to be studied for wilderness designation.

There are no lands in this area identified as areas of critical environmental concern.

There are no lands in this area included in the Wild and Scenic Rivers category.

There are no parks or areas of critical ecological or aesthetic concern in this area.

**H. Air quality (Clean Air Act)**

These areas are not in or near a Class I Air Quality Region. Watering of construction areas could be required if needed to control fugitive dust, but most sites will be so small that it will not be necessary.

**I. Socioeconomic factors**

Sinkhole filling is expected to be conducted mainly on undeveloped agricultural lands and impacts on minority or low-income populations are expected to be minimal.

Work contracted for sinkhole filling may result in slightly higher local employment and revenues. Sinkhole filling should also make the lands safer and more useful, and this will be a benefit to the property owners and the public.

**J. Political factors**

Zoning jurisdictions for these areas are generally held by County and local township authorities. Property is privately and publicly owned and used mainly for agricultural activities and wildlife habitat. Consent for right-of-entry is obtained prior to any reclamation activities and property owners or managers are usually notified before work begins.

**K. Existing Vegetative Cover**

Existing vegetation varies with land use on areas affected by sinkholes. This may include cropland, tame grass and legume pastures, native grasslands, wildlife habitat, road ditches, shelterbelts and farmstead areas. Topsoil will be saved to the extent

possible on all affected areas and respread evenly after the sinkholes are filled. All affected hay land and grassland areas will be reseeded with locally adapted grass species native to western North Dakota.

#### **L. Threatened and Endangered Plant Species**

Reclamation activities will be conducted in a manner that should have no significant effect on threatened or endangered plant species, species of concern or significant ecological communities. This will include minimizing disturbances and restricting them to the immediate area of the sinkholes and borrow area(s). The only federally-listed threatened or endangered plant species known to exist in North Dakota is the Western Prairie Fringed Orchid (*Platanthera praeclar*). Known locations of this plant are within moist, tall grass prairie and sedge meadows of the Sheyenne National Grasslands in the southeastern corner of the state.

#### **M. Anticipated dates of Reclamation**

Sinkhole filling activities are expected to be conducted every year in the period from 2017-2021. It is expected that most of the non-emergency sinkhole filling work will be conducted in between late summer and fall, after harvest.

#### **N. Estimated Construction Cost**

The AML Division had divided the sinkhole work into two contracts based on location. The total yearly estimate of the combined contracts is \$90,000 for 2021. The estimated total cost for all sinkhole filling projects from 2017-2021 is \$500,000.

#### **O. Off-site Borrow and Disposal Areas**

Borrow areas, where fill dirt is taken, must be approved in advance by the Commission's project manager. These borrow areas will be located as near as possible to the sinkholes. Usually, these borrow areas are spoil piles from a nearby abandoned surface mine or come from "over-excavating" a large sinkhole and grading it into a shallow swale consistent with the surrounding topography. If off-site borrow or disposal issues arise, they will be addressed through consultation with the North Dakota Department of Environmental Qualities.

**P. Noise Pollution**

Noise pollution problems are not anticipated; however, if problems arise, remedial action measures could be addressed in consultation with the North Dakota Department of Environmental Quality.

**Q. Environmental Justice Policy**

Construction work may result in a slight increase in employment and revenues, but no significant direct or indirect on minority or low-income populations is expected.

## Chapter 4: Consultation and Coordination

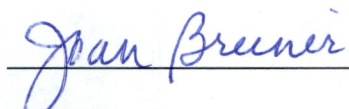
A letter was sent to the State Historical Society of North Dakota on June 21, 2021 requesting concurrence for the 202 Sinkhole Filling AML Project.

A letter was sent to the U.S. Fish and Wildlife Service on June 21, 2021 requesting concurrence for the 2021 Sinkhole Filling AML Project.

A letter was sent to the North Dakota Department of Environmental Quality on June 21, 2021 requesting concurrence for the 2021 Sinkhole Filling AML Project.

A letter was sent to the Natural Heritage Program of the North Dakota Parks and Recreation Department on June 21, 2021 requesting concurrence for 2021 Sinkhole Filling AML Project.

### Preparer

 6/28/2021

Joan Breiner  
Assistant Director - AML Division  
ND Public Service Commission

# **STANDARDIZED ENVIRONMENTAL ASSESSMENT**

## **Attachment 1, Sinkhole Location Maps 2005-2019**

Prepared by

North Dakota Public Service Commission

In Cooperation with

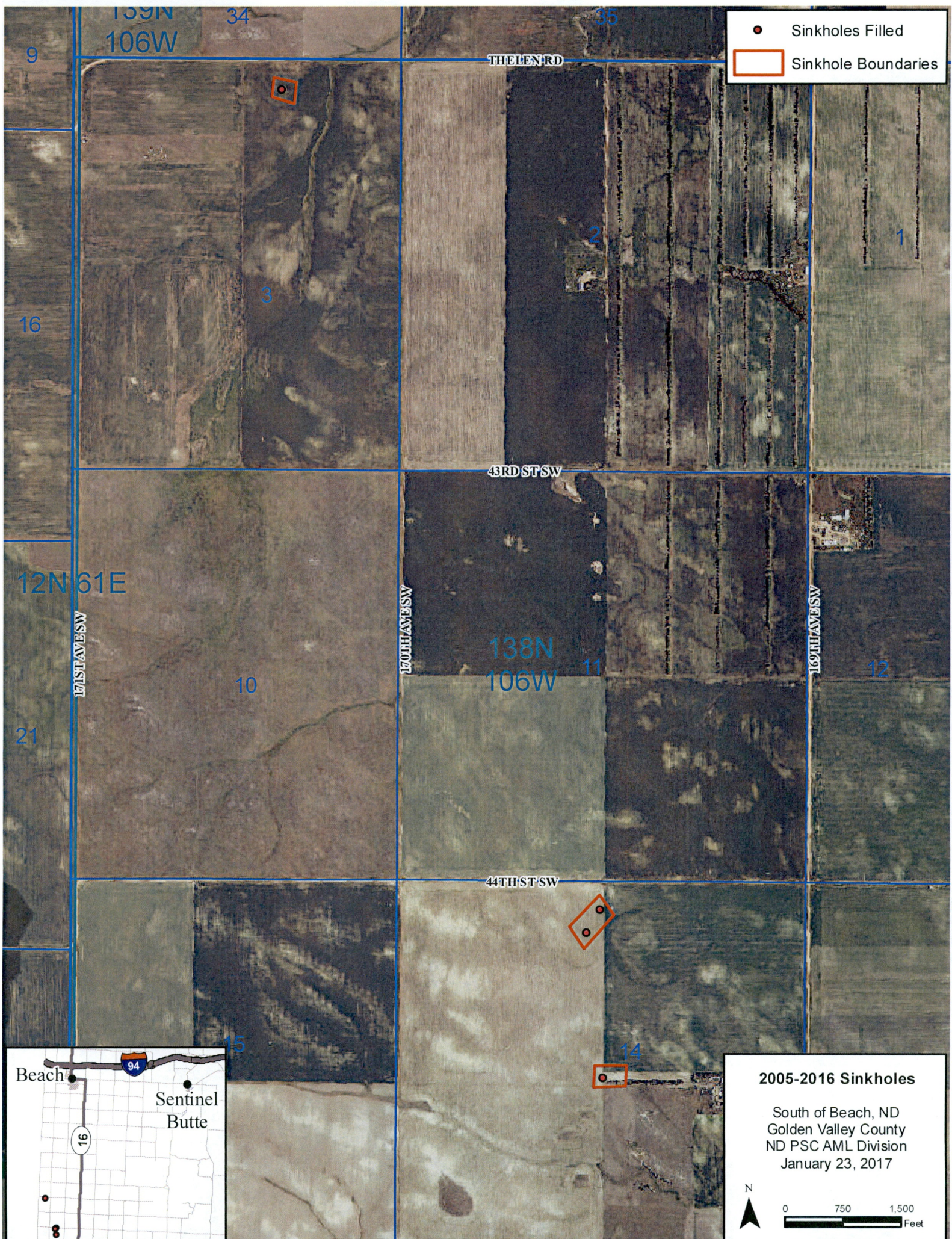
United States Department of the Interior  
Office of Surface Mining Reclamation and Enforcement  
Casper Field Office

September 2016 (Revised December 2019)

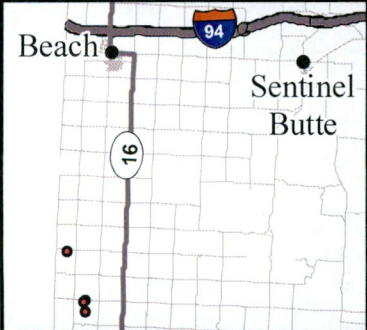
Note to users:

It is impossible to predict where mining-related sinkholes will occur during the period from 2017 to 2021. This appendix contains maps of locations where sinkhole filling projects have been conducted in the past fourteen years. We expect most sinkholes that occur between 2017 and 2021 will be at or near these locations.

North Dakota Sinkhole Filling Project Locations 2005-2019						
Location	PA Name	PA	County	Township	Range	Section(s)
Beach	Sokolski	ND009	Golden	138	106	3, 14
Beulah	Beulah	ND014	Mercer	144	87	6, 7, 18, 30
				144	88	12, 13, 15, 25
Bowman	Andrews	ND033	Bowman	132	102	14, 15, 22
Dickinson	Jablonsky	ND146	Dunn	141	95	1
Dickinson	Binek	ND024	Stark	139	95	5, 6, 7, 8, 17, 18
Garrison	Garrison	ND019	McLean	148	84	7, 8, 17, 18
Hanks	Hanks	ND147	William	159	101	17, 19
				159	102	12, 13, 24
Haynes	Haynes	ND124	Adams	129	94	6, 7, 8, 9, 15, 16, 17, 21,
				129	95	1
New	Ruck	ND026	Hettinger	134	91	24
New	New Leipzig	ND030	Grant	133	90	10
				134	90	26, 34
New Salem	Mad Dog	ND053	Morton	139	85	7
New Salem	New Salem	ND054	Morton	139	85	15, 21
Niobe	Niobe	ND938106	Ward	160	89	20
Noonan	Noonan	ND029	Divide	162	95	3, 9, 10
			Burke	162	94	7
Parshall	Parshall	ND090	Mountrail	152	89	19
				152	90	13
Regent	Havelock	ND023	Hettinger	134	95	10
Richardton	Abbey	ND025	Stark	139	92	4, 5
				140	92	32, 33
Scranton	Scranton	ND528	Bowman	131	100	24
	South	ND003	Bowman	131	100	25, 26
Velva	Buechler	ND004	Ward	152	81	28, 29
Washburn	Black	ND006	McLean	144	83	10, 11
Williston	Williams Co.	ND111	Williams	154	100	7, 8, 9, 17, 19, 20, 21, 22,
Williston	West	ND046	Williams	154	101	5, 6, 7, 8
				155	102	28
Wilton	Wilton	ND001	Burleigh	141	79	2
				142	79	4, 5, 6, 8, 9, 10, 11, 15, 28,
				142	80	1, 22, 27
			McLean	143	80	36
Zap	Beulah/Zap	ND014	Mercer	144	89	17, 20, 22, 23, 24, 25, 26
				144	88	4



- Sinkholes Filled
- ▭ Sinkhole Boundaries

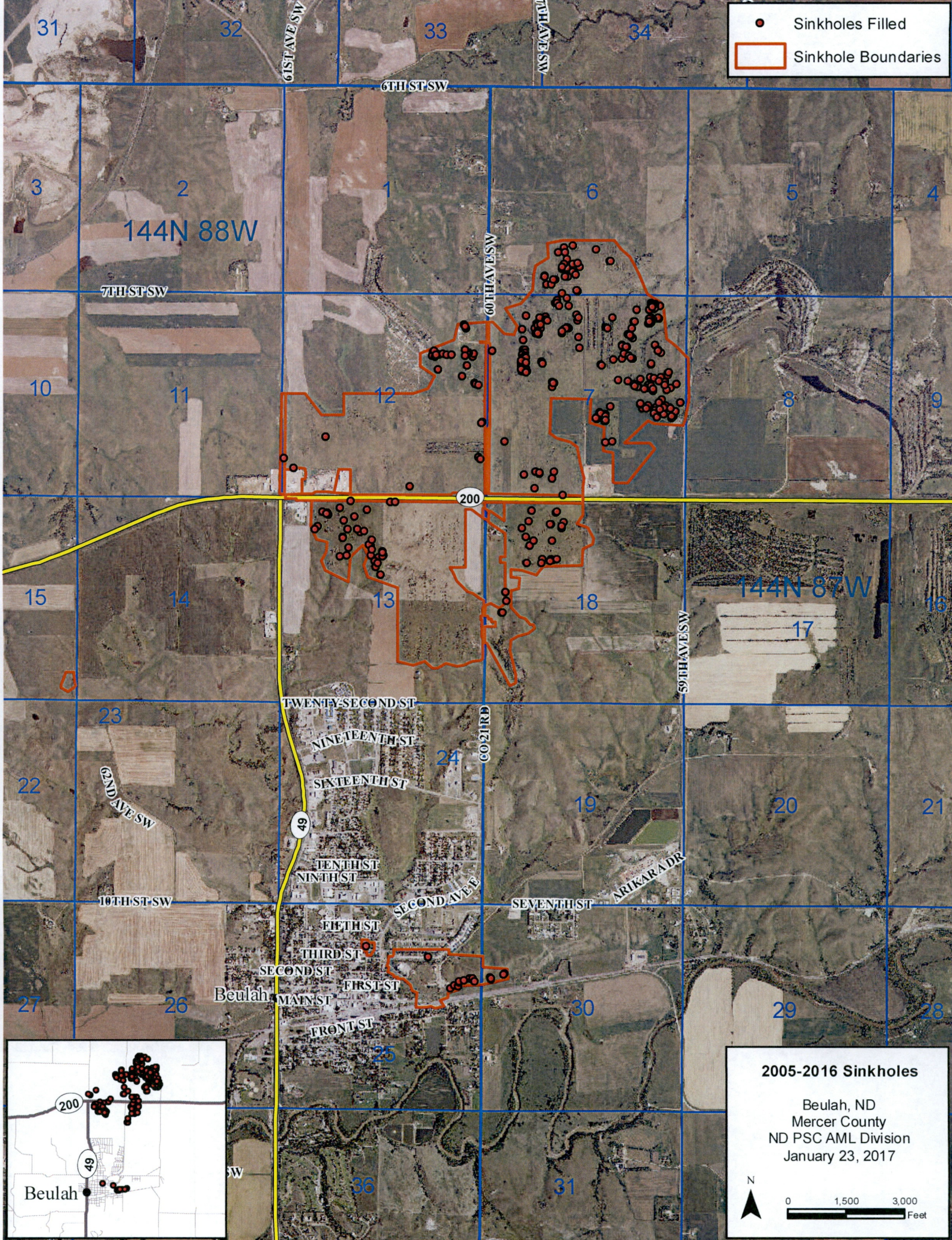


**2005-2016 Sinkholes**

South of Beach, ND  
Golden Valley County  
ND PSC AML Division  
January 23, 2017

N

0 750 1,500  
Feet



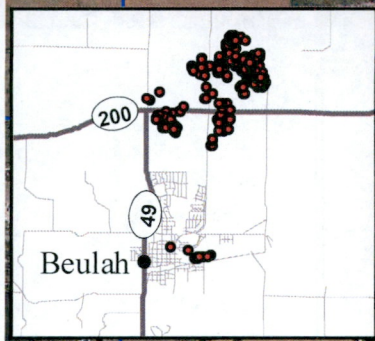
- Sinkholes Filled
- Sinkhole Boundaries

**2005-2016 Sinkholes**

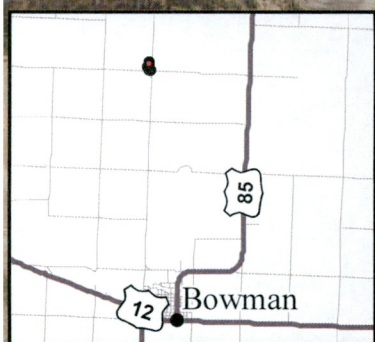
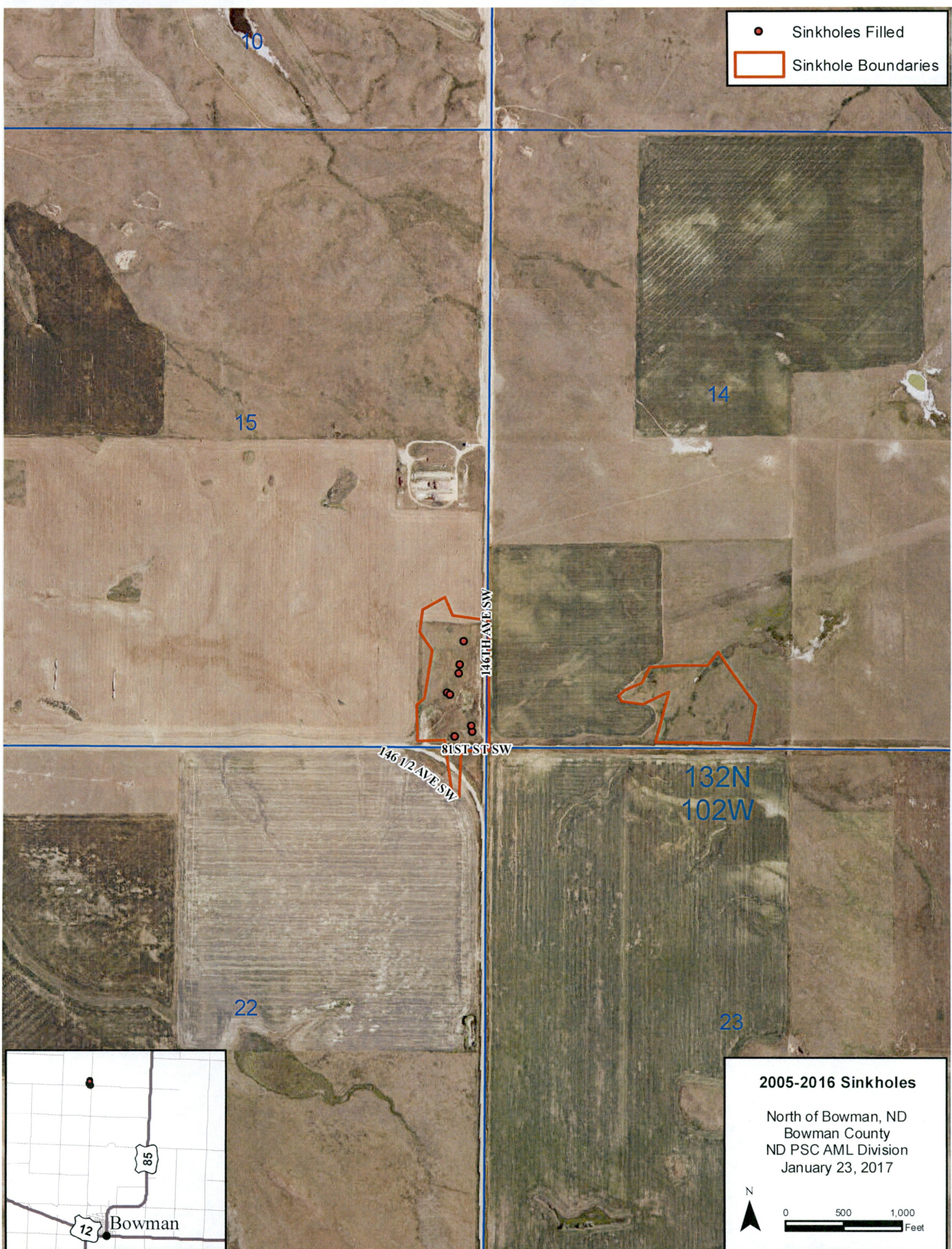
Beulah, ND  
Mercer County  
ND PSC AML Division  
January 23, 2017

N

0 1,500 3,000  
Feet



- Sinkholes Filled
- Sinkhole Boundaries



**2005-2016 Sinkholes**

North of Bowman, ND  
 Bowman County  
 ND PSC AML Division  
 January 23, 2017

N

0 500 1,000  
 Feet

142N 95W 36

- Sinkholes Filled
- Sinkhole Boundaries

24TH ST SW

142

1

6

141N 95W

141N 94W

25TH ST SW

102ND AVE SW

12

7



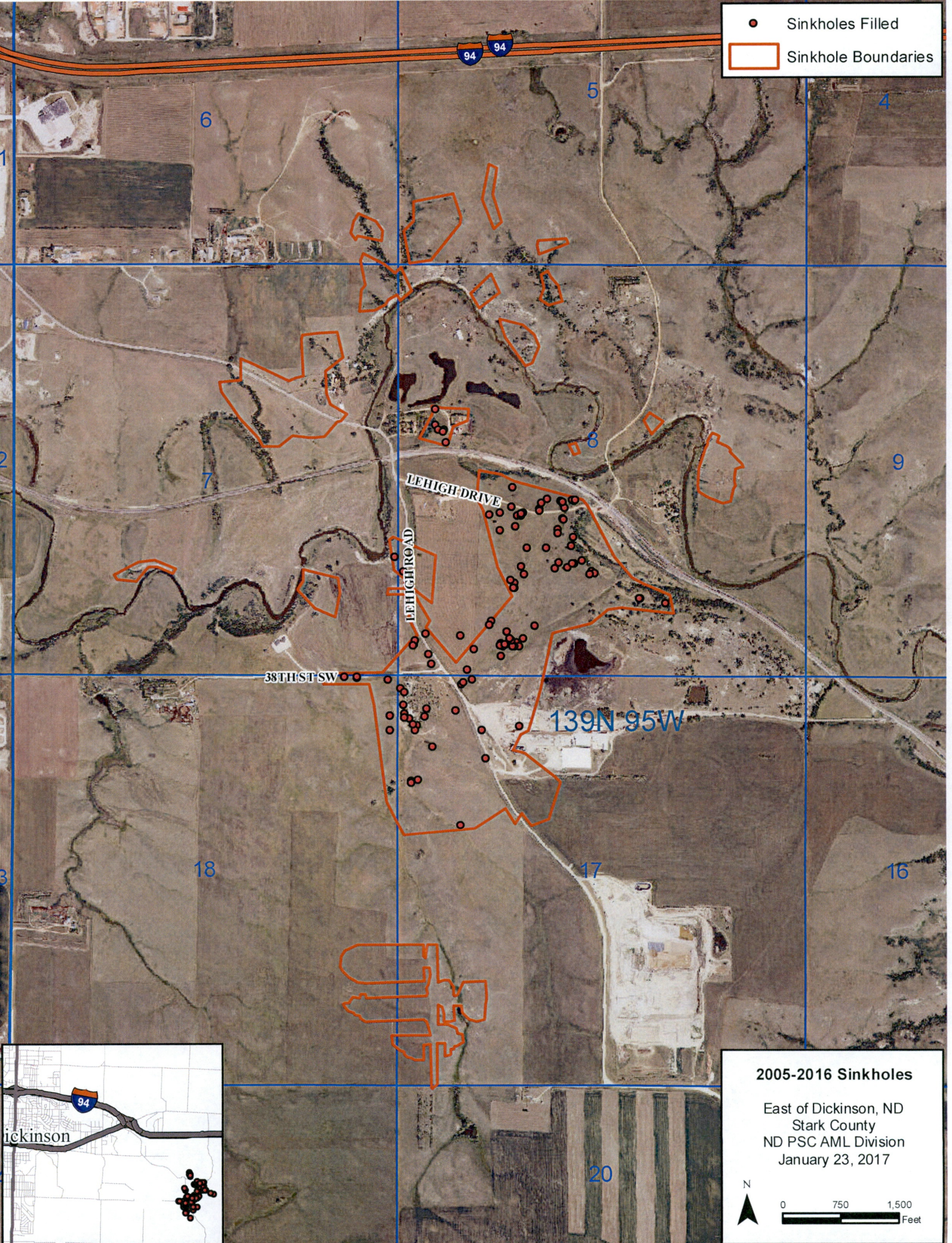
**2005-2016 Sinkholes**

NE of Dickinson, ND  
 Dunn County  
 ND PSC AML Division  
 January 23, 2017

N

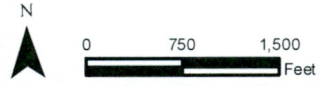
0 460 920 Feet

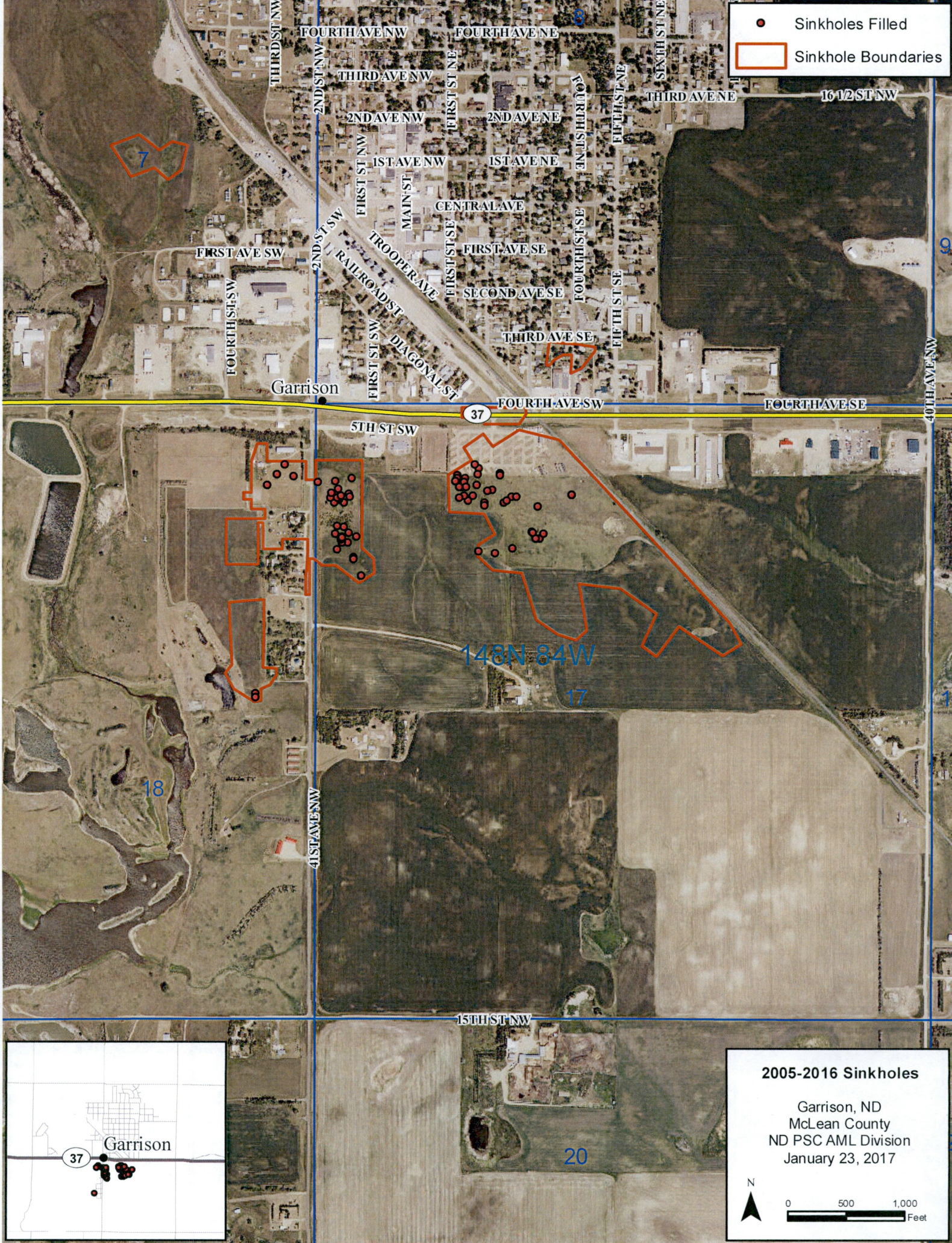
- Sinkholes Filled
- Sinkhole Boundaries



**2005-2016 Sinkholes**

East of Dickinson, ND  
 Stark County  
 ND PSC AML Division  
 January 23, 2017

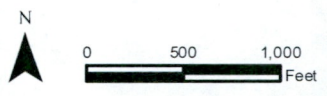




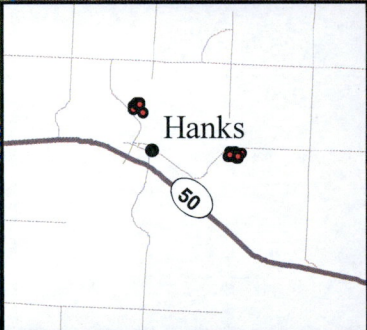
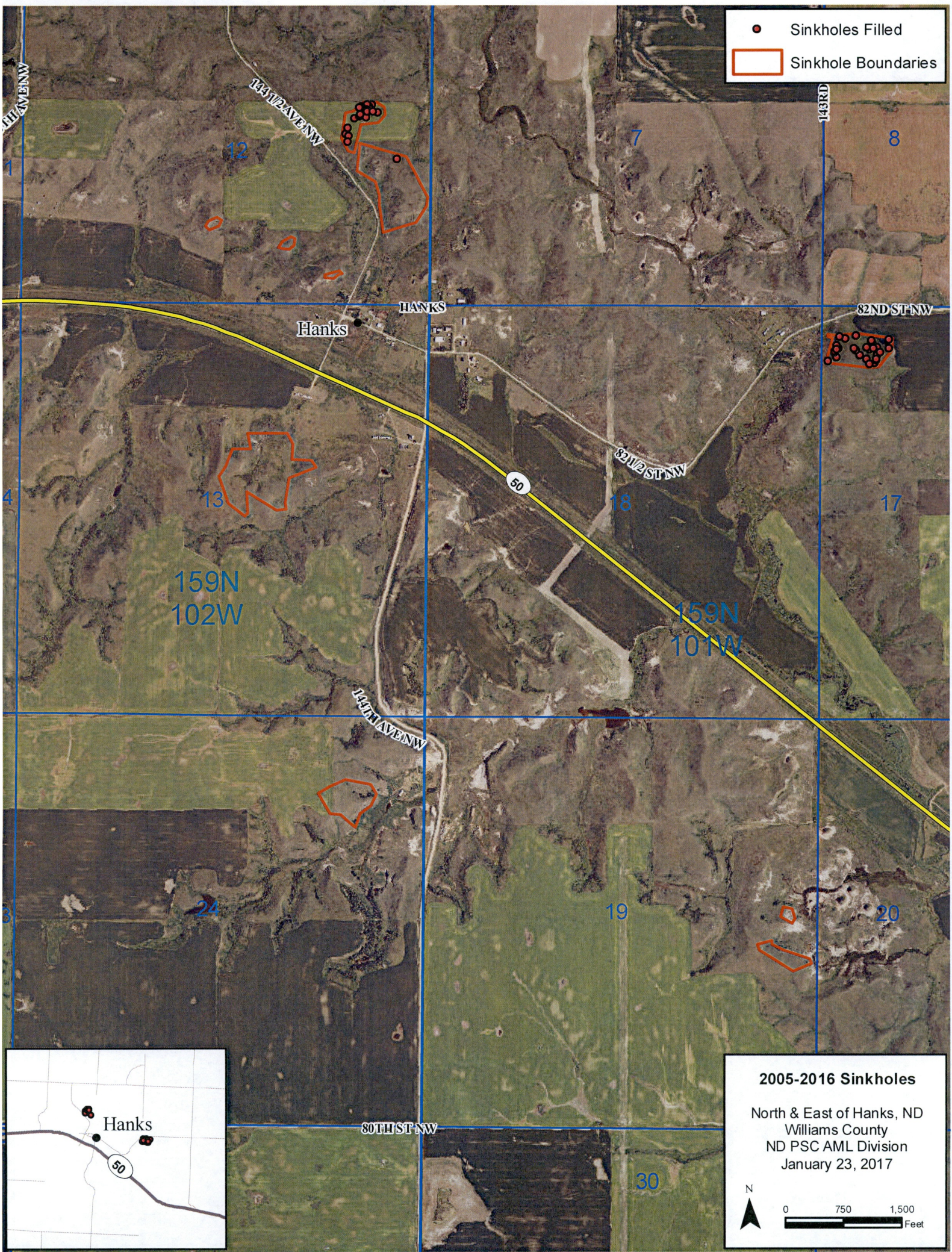
- Sinkholes Filled
- Sinkhole Boundaries

**2005-2016 Sinkholes**

Garrison, ND  
 McLean County  
 ND PSC AML Division  
 January 23, 2017



- Sinkholes Filled
- Sinkhole Boundaries



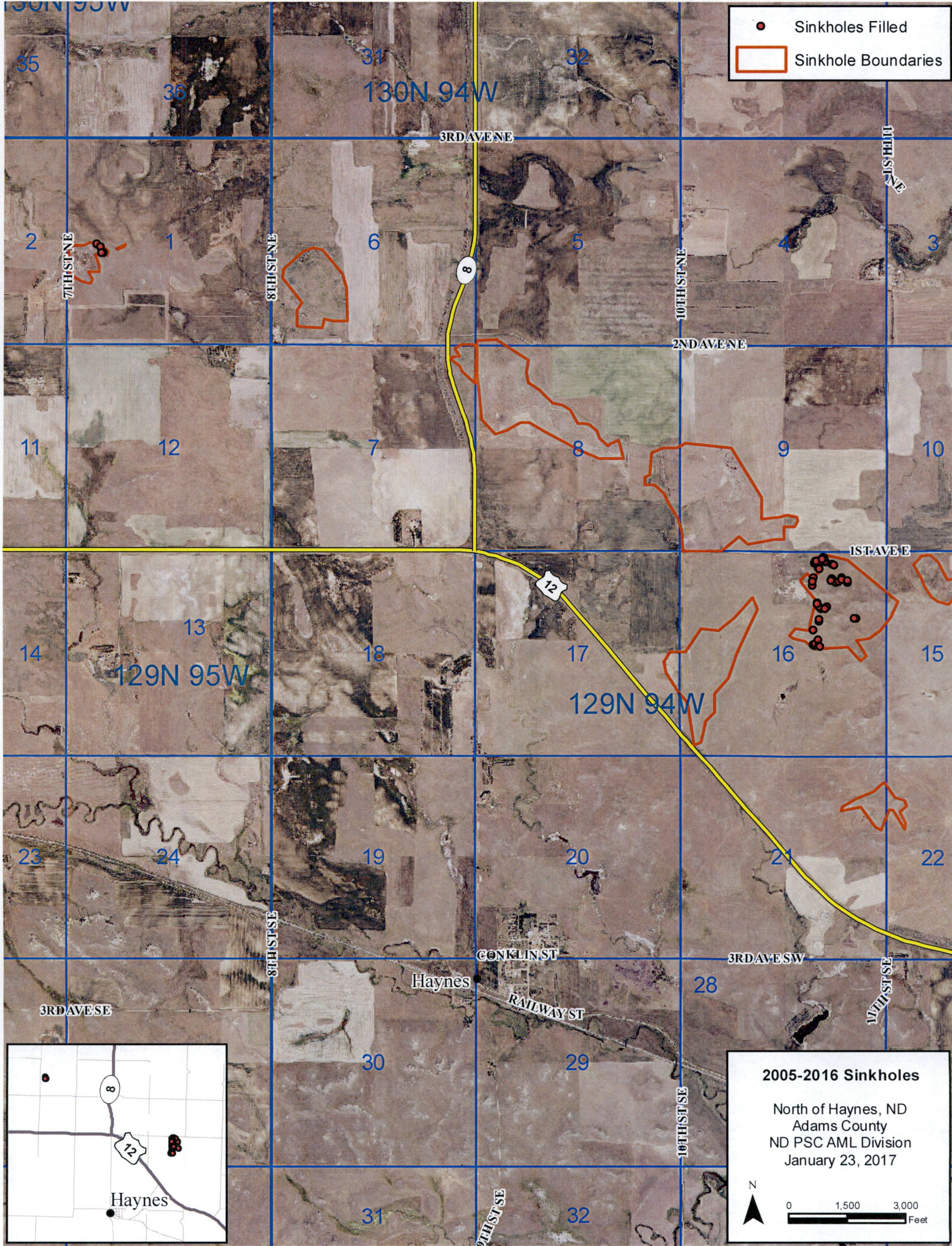
**2005-2016 Sinkholes**

North & East of Hanks, ND  
Williams County  
ND PSC AML Division  
January 23, 2017

N

0      750      1,500

Feet



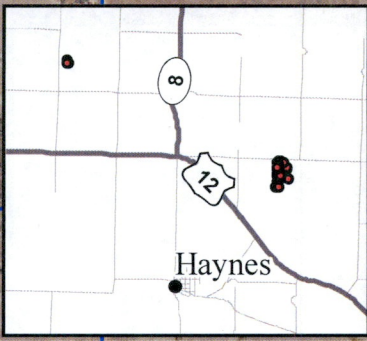
- Sinkholes Filled
- Sinkhole Boundaries

**2005-2016 Sinkholes**

North of Haynes, ND  
 Adams County  
 ND PSC AML Division  
 January 23, 2017

N

0      1,500      3,000  
 Feet





● Sinkholes Filled  
◻ Sinkhole Boundaries

**2005-2016 Sinkholes**  
NW of New Leipzig, ND  
Hettinger and Grant Counties  
ND PSC AML Division  
January 23, 2017

N  
0 1,500 3,000 Feet

New Leipzig  
21  
49

- Sinkholes Filled
- Sinkhole Boundaries



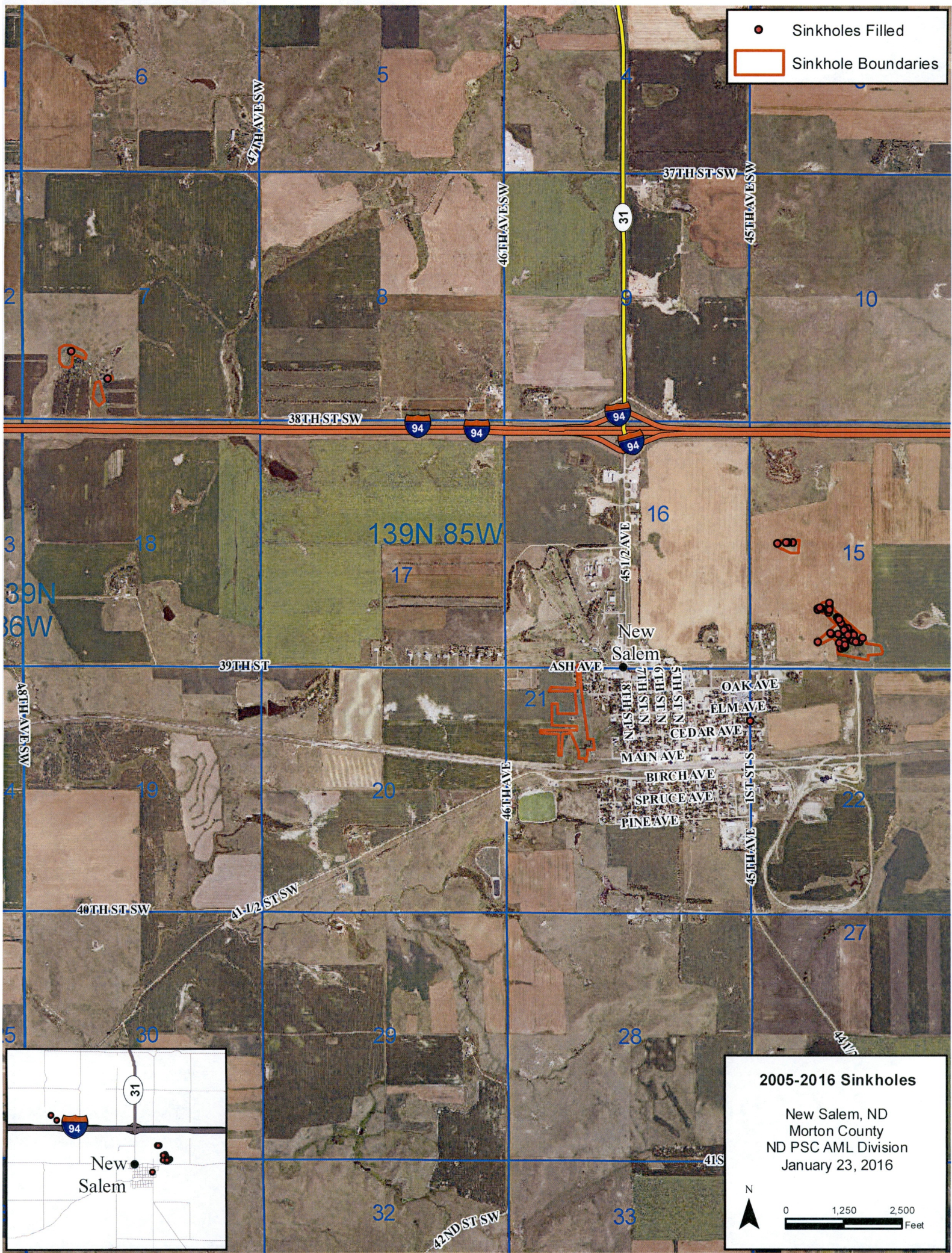
**2005-2016 Sinkholes**

South of New Leipzig, ND  
 Grant County  
 ND PSC AML Division  
 January 23, 2017

N

0      500      1,000  
 Feet

- Sinkholes Filled
- Sinkhole Boundaries



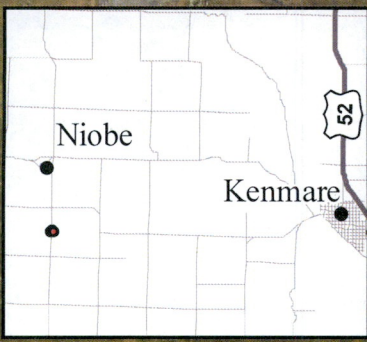
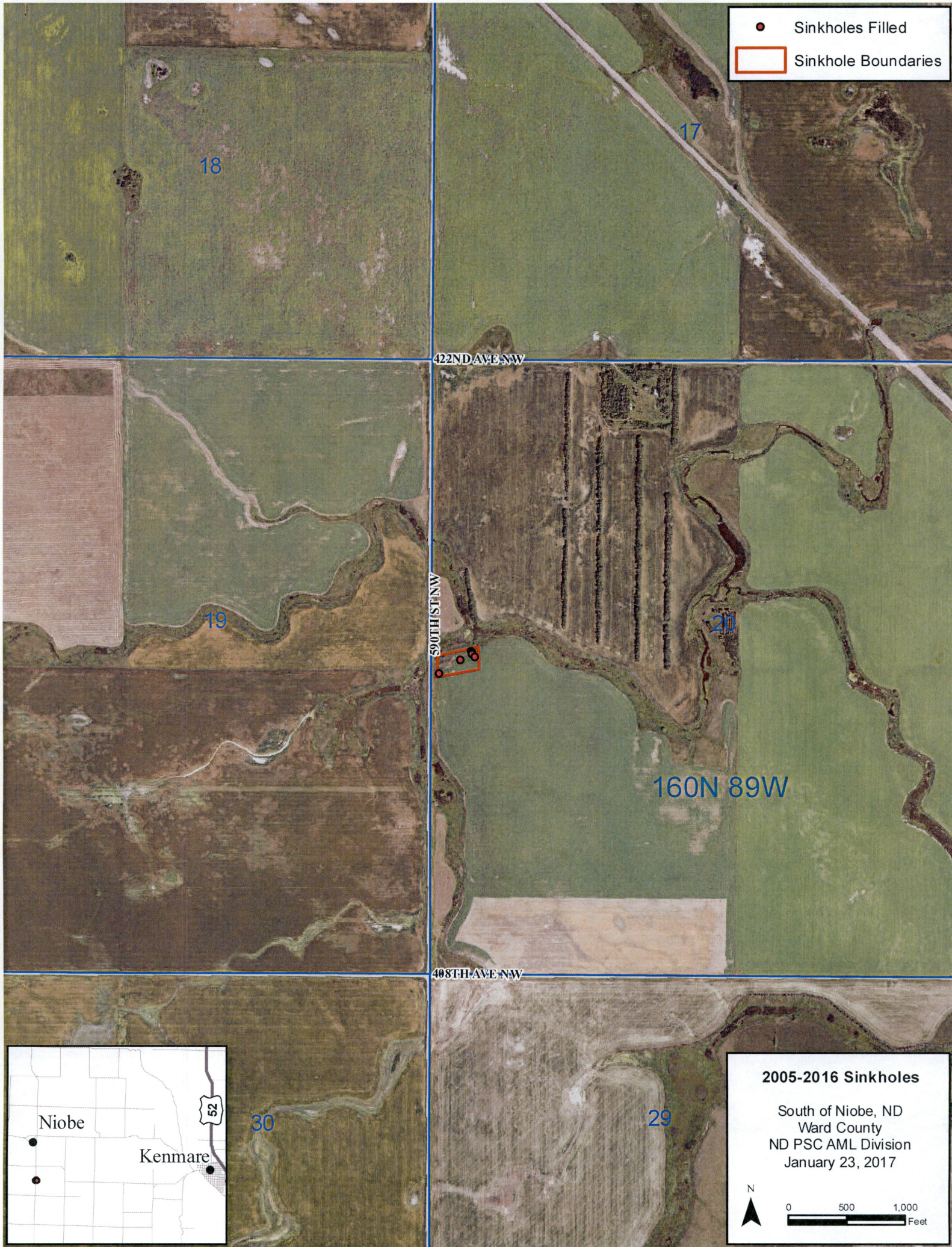
**2005-2016 Sinkholes**

New Salem, ND  
 Morton County  
 ND PSC AML Division  
 January 23, 2016

N

0      1,250      2,500  
 Feet

- Sinkholes Filled
- Sinkhole Boundaries

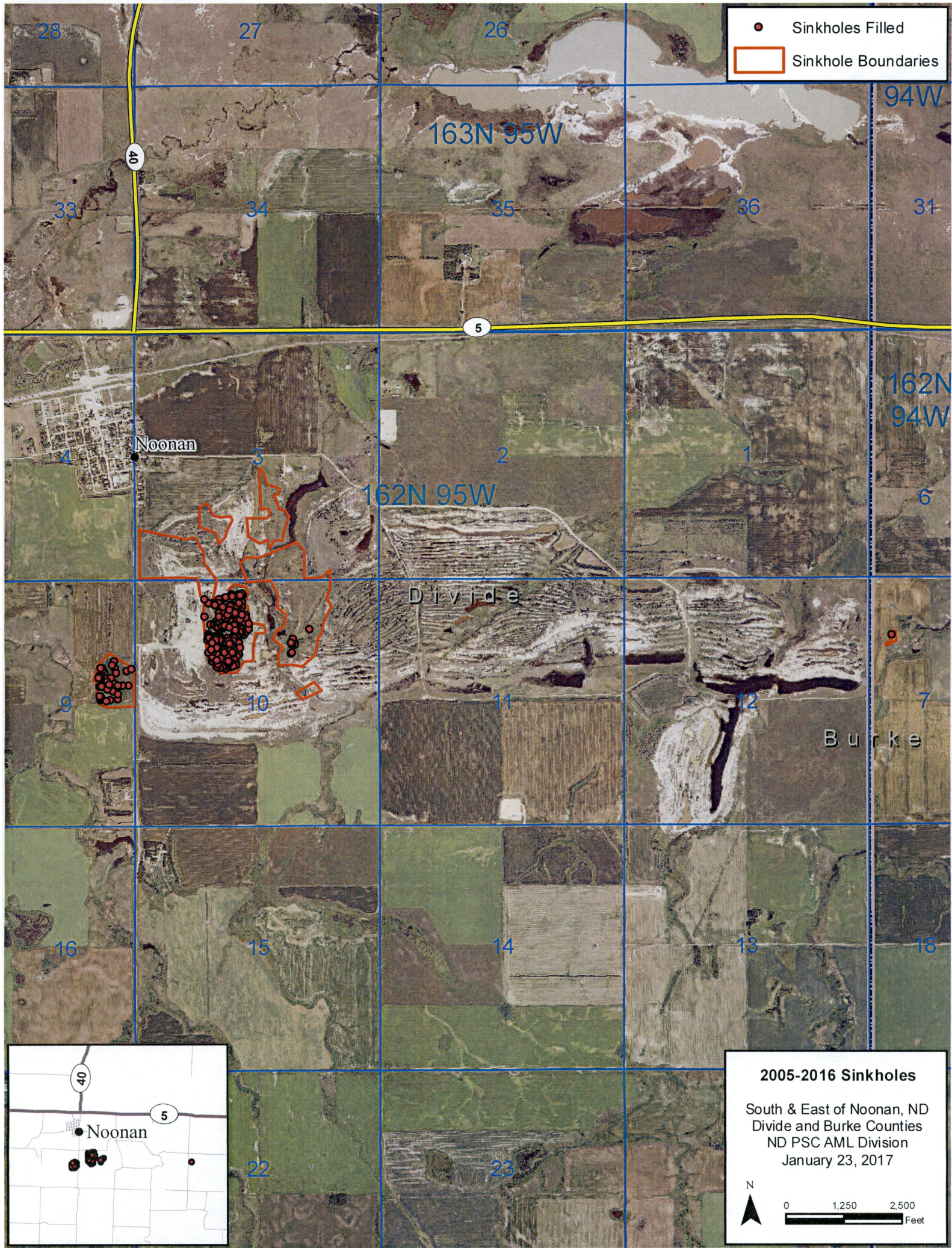


**2005-2016 Sinkholes**

South of Niobe, ND  
 Ward County  
 ND PSC AML Division  
 January 23, 2017

N

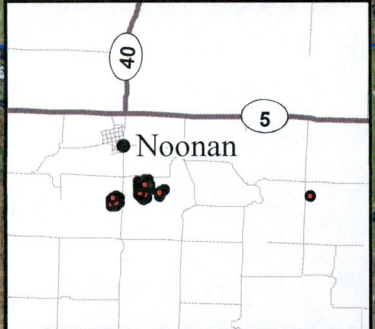
0      500      1,000  
 Feet



● Sinkholes Filled  
□ Sinkhole Boundaries

**2005-2016 Sinkholes**  
South & East of Noonan, ND  
Divide and Burke Counties  
ND PSC AML Division  
January 23, 2017

N  
0 1,250 2,500  
Feet



40TH ST NW

- Sinkholes Filled
- Sinkhole Boundaries

13

72ND AVENUE NW

18

152N 89W

152N 90W

23

Orange outline boundary containing several black dots representing sinkholes.

24

19

37

38TH ST NW

Parshall

**2005-2016 Sinkholes**

North of Parshall, ND  
Mountrail County  
ND PSC AML Division  
January 23, 2017

N

0 500 1,000  
Feet



- Sinkholes Filled
- Sinkhole Boundaries

104TH SW

4

3

104TH

9

10

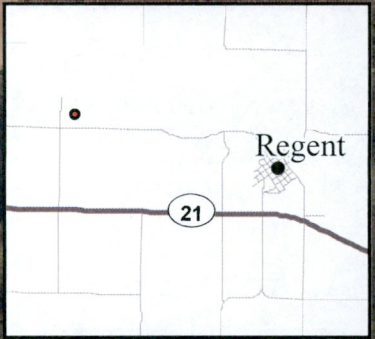
134N 95W

68TH ST SW

105TH AVE SW

16

15



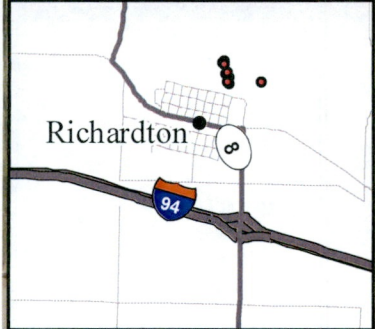
**2005-2016 Sinkholes**

West of Regent, ND  
 Hettinger County  
 ND PSC AML Division  
 January 23, 2017

N

0 500 1,000 Feet

- Sinkholes Filled
- Sinkhole Boundaries



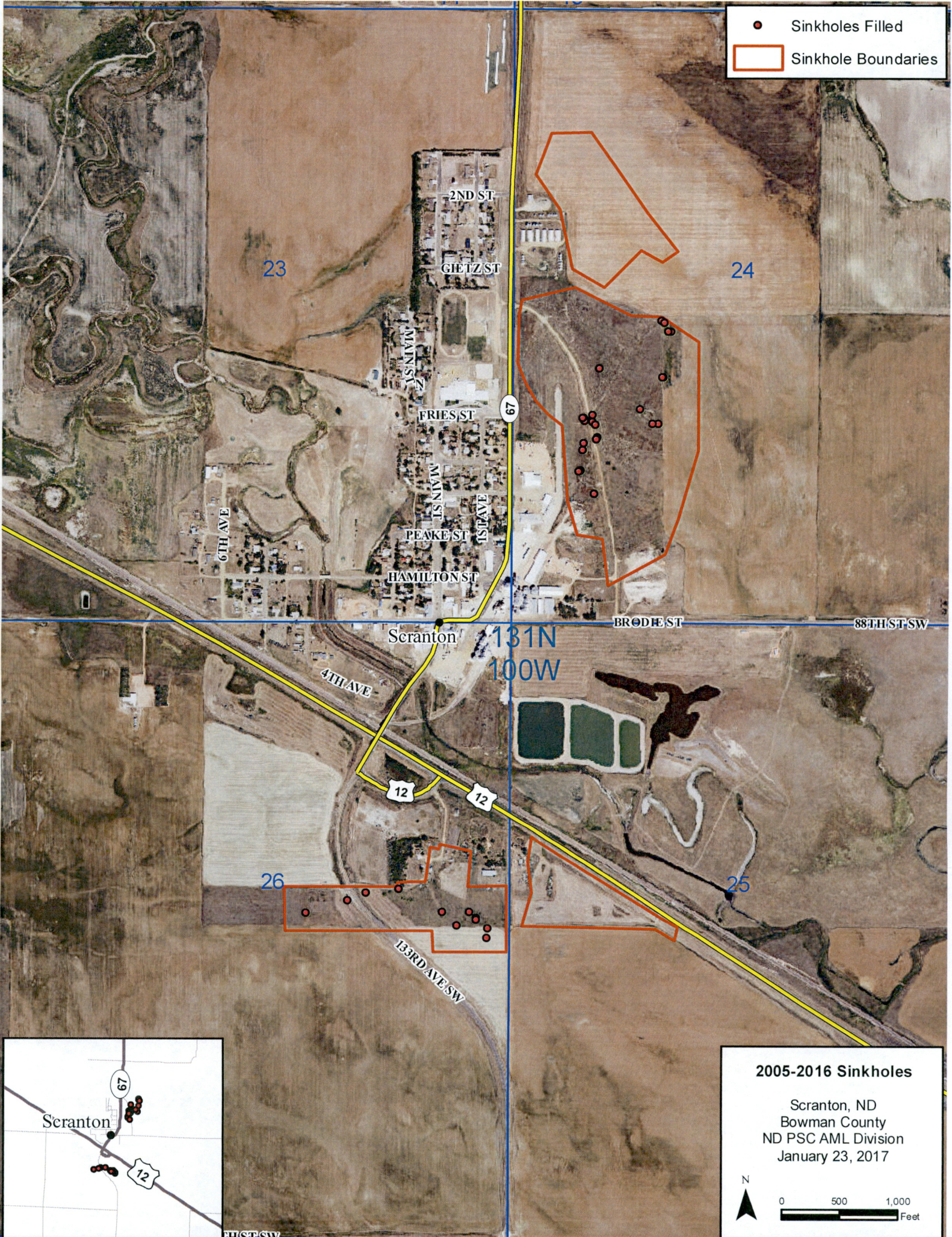
**2005-2016 Sinkholes**

North of Richardton, ND  
 Stark County  
 ND PSC AML Division  
 January 23, 2017

N

0 500 1,000  
 Feet

- Sinkholes Filled
- Sinkhole Boundaries

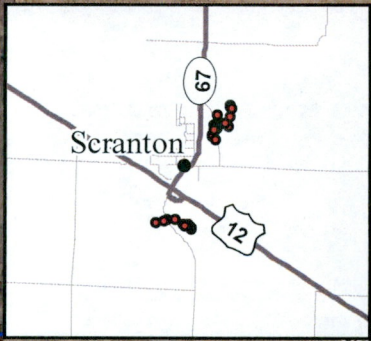


**2005-2016 Sinkholes**

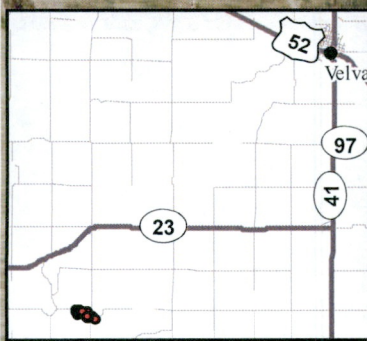
Scranton, ND  
Bowman County  
ND PSC AML Division  
January 23, 2017

N

0 500 1,000  
Feet



- Sinkholes Filled
- Sinkhole Boundaries

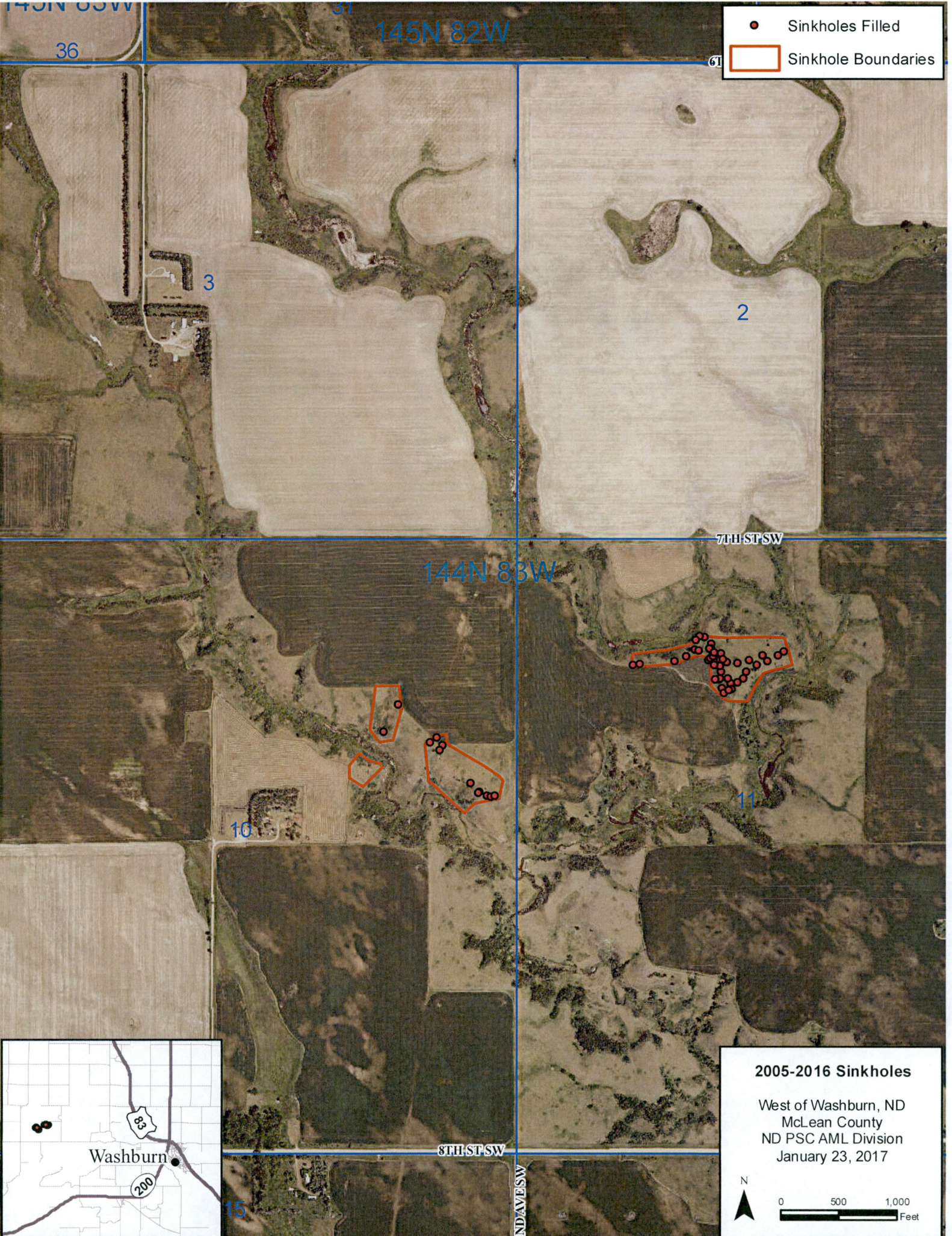


**2005-2016 Sinkholes**

Southwest of Velva, ND  
 Ward County  
 ND PSC AML Division  
 January 23, 2017

N

0      500      1,000  
 Feet



● Sinkholes Filled  
◻ Sinkhole Boundaries

7TH ST SW

144N 83W

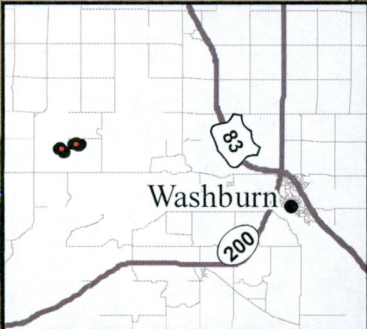
10

11

8TH ST SW

END AVES SW

15



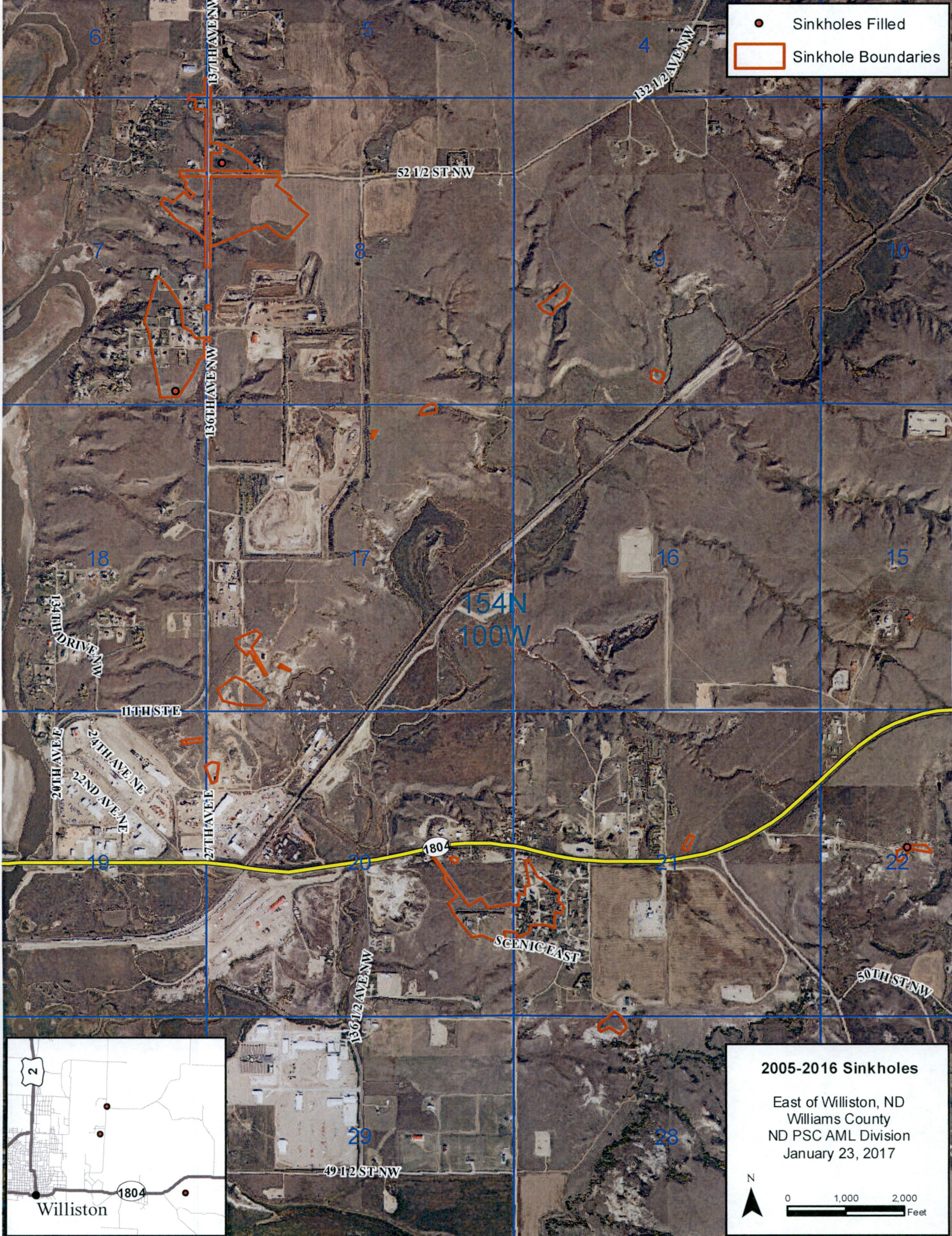
**2005-2016 Sinkholes**

West of Washburn, ND  
McLean County  
ND PSC AML Division  
January 23, 2017

N

0 500 1,000  
Feet

- Sinkholes Filled
- Sinkhole Boundaries

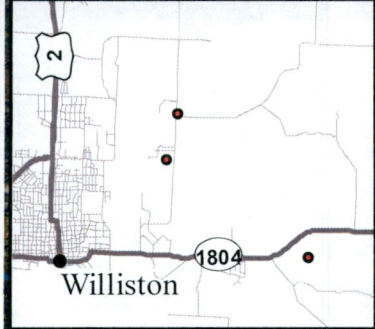


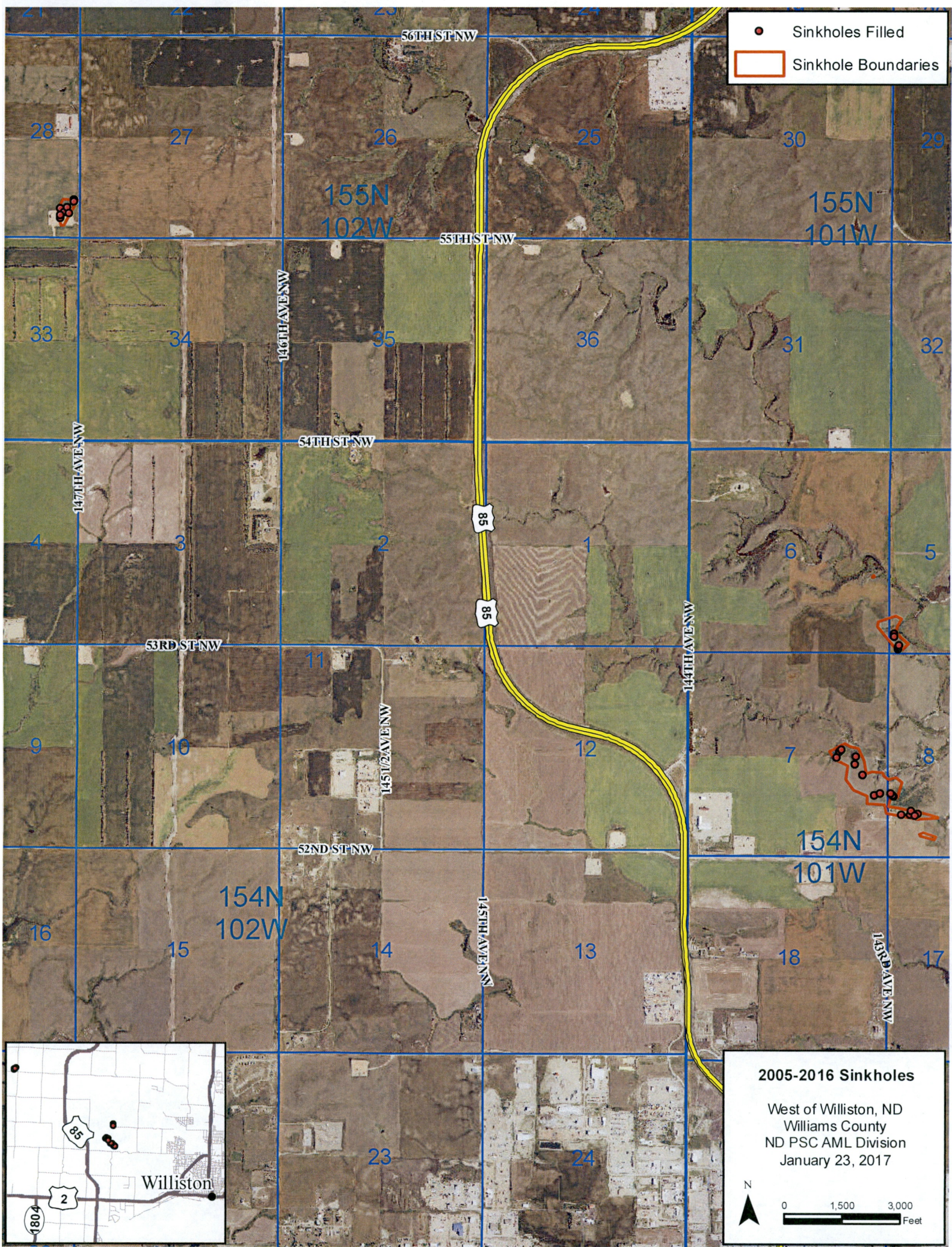
**2005-2016 Sinkholes**

East of Williston, ND  
 Williams County  
 ND PSC AML Division  
 January 23, 2017

N

0 1,000 2,000  
 Feet





- Sinkholes Filled
- ▭ Sinkhole Boundaries

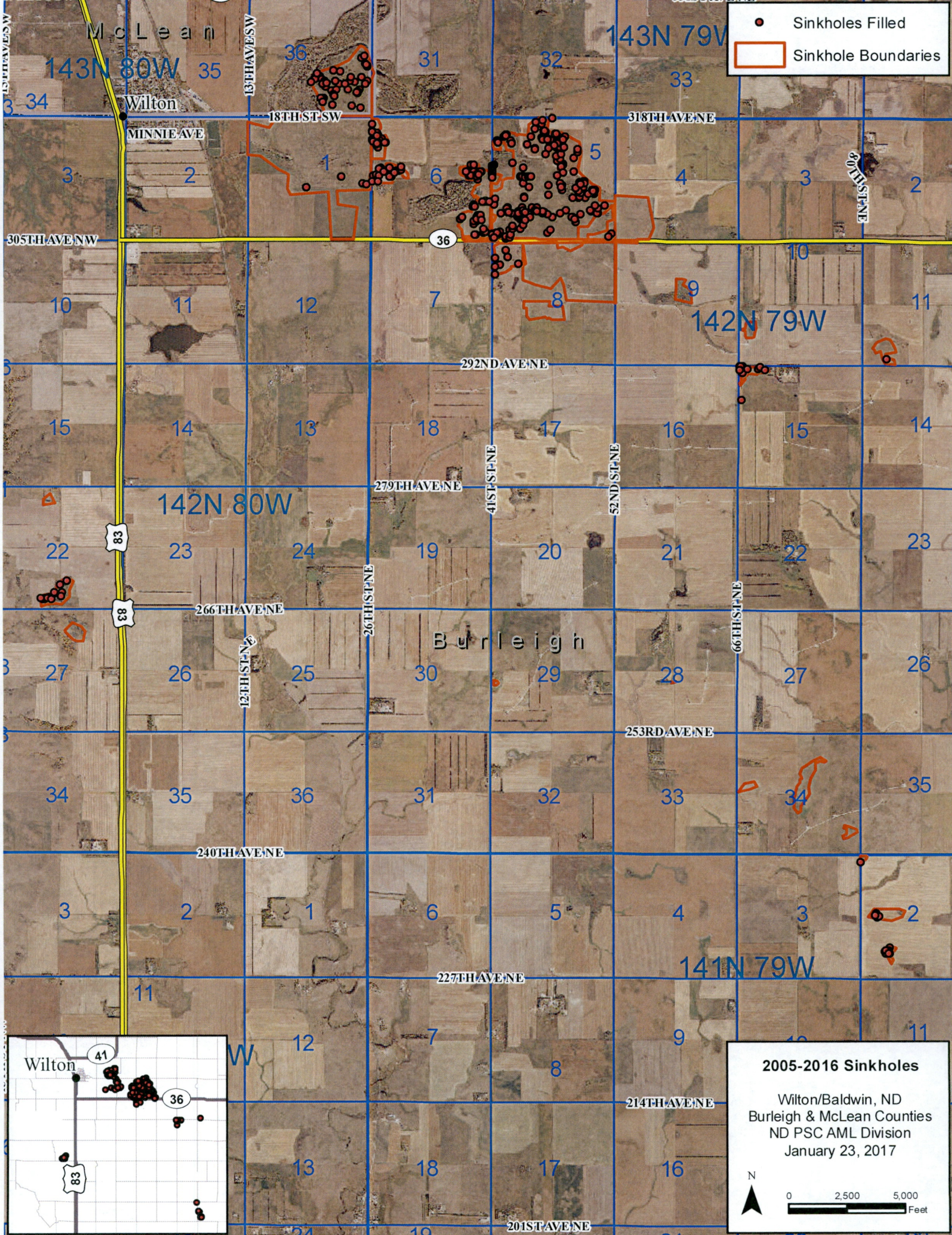
**2005-2016 Sinkholes**

West of Williston, ND  
Williams County  
ND PSC AML Division  
January 23, 2017

N

0 1,500 3,000 Feet





- Sinkholes Filled
- Sinkhole Boundaries

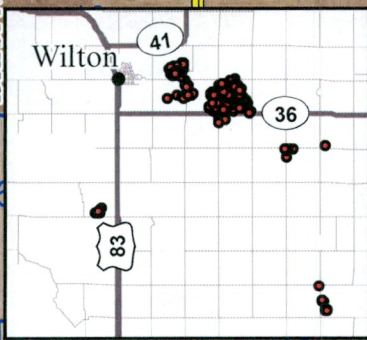
**2005-2016 Sinkholes**

Wilton/Baldwin, ND  
Burleigh & McLean Counties  
ND PSC AML Division  
January 23, 2017

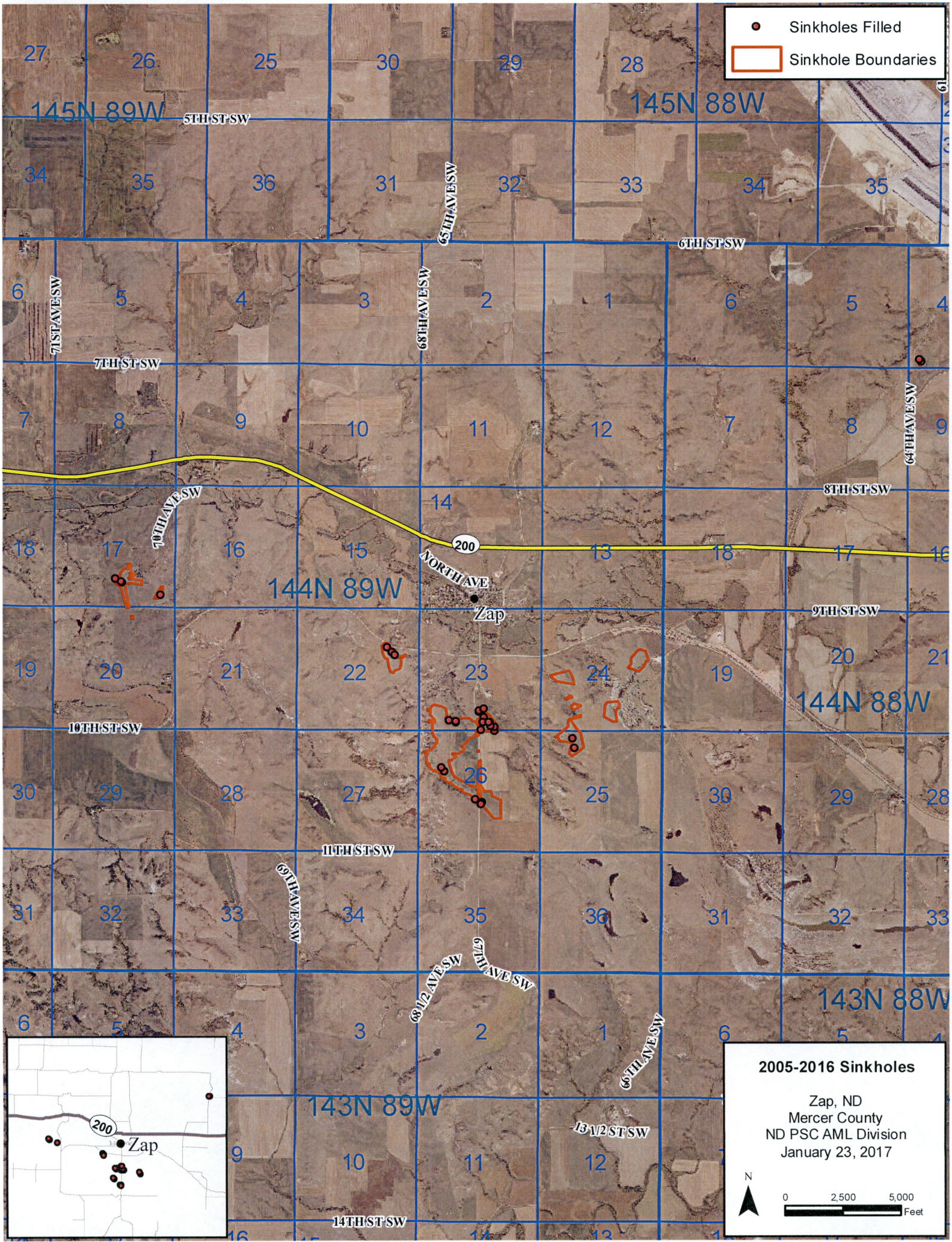
N

0      2,500      5,000

Feet



- Sinkholes Filled
- Sinkhole Boundaries

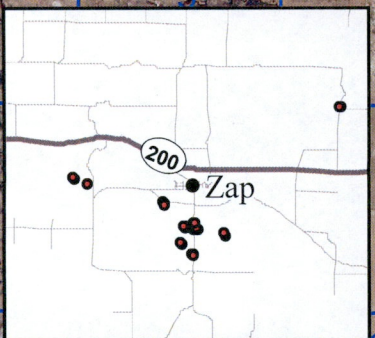


**2005-2016 Sinkholes**

Zap, ND  
 Mercer County  
 ND PSC AML Division  
 January 23, 2017

N

0 2,500 5,000  
 Feet



# **STANDARDIZED ENVIRONMENTAL ASSESSMENT**

## **Attachment 2, Potential Sinkhole Location Maps 2020**

Prepared by

North Dakota Public Service Commission

In Cooperation with

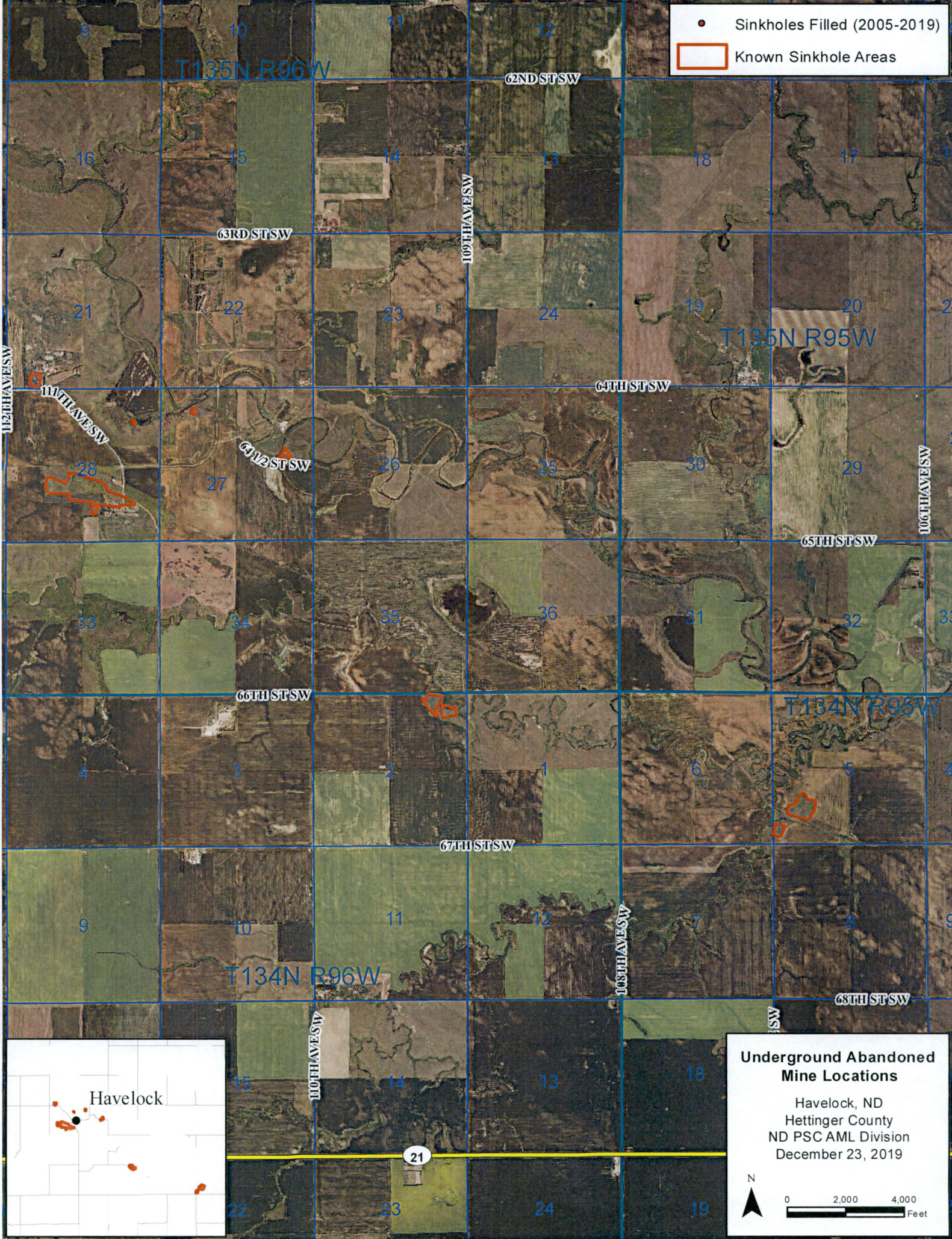
United States Department of the Interior  
Office of Surface Mining Reclamation and Enforcement  
Casper Field Office

(December 2019)

Note to users:

It is impossible to predict where mining-related sinkholes will occur during the period 2020. This appendix contains maps of locations where potential sinkhole filling projects may be conducted.

<b>Proposed North Dakota Sinkhole Filling Project Locations 2020</b>						
<b>Location</b>	<b>PA Name</b>	<b>PA</b>	<b>County</b>	<b>Township</b>	<b>Range</b>	<b>Section(s)</b>
SW of Tioga	SW Tioga	ND000142	Williams	155	96	29
White Earth	White Earth	ND000223	McKenzie	156	94	9,15,19,23
Havelock	Havelock	ND000023	Hettinger	134	96	2,5,27,28,33



- Sinkholes Filled (2005-2019)
- Known Sinkhole Areas

**Underground Abandoned Mine Locations**

Havelock, ND  
 Hettinger County  
 ND PSC AML Division  
 December 23, 2019

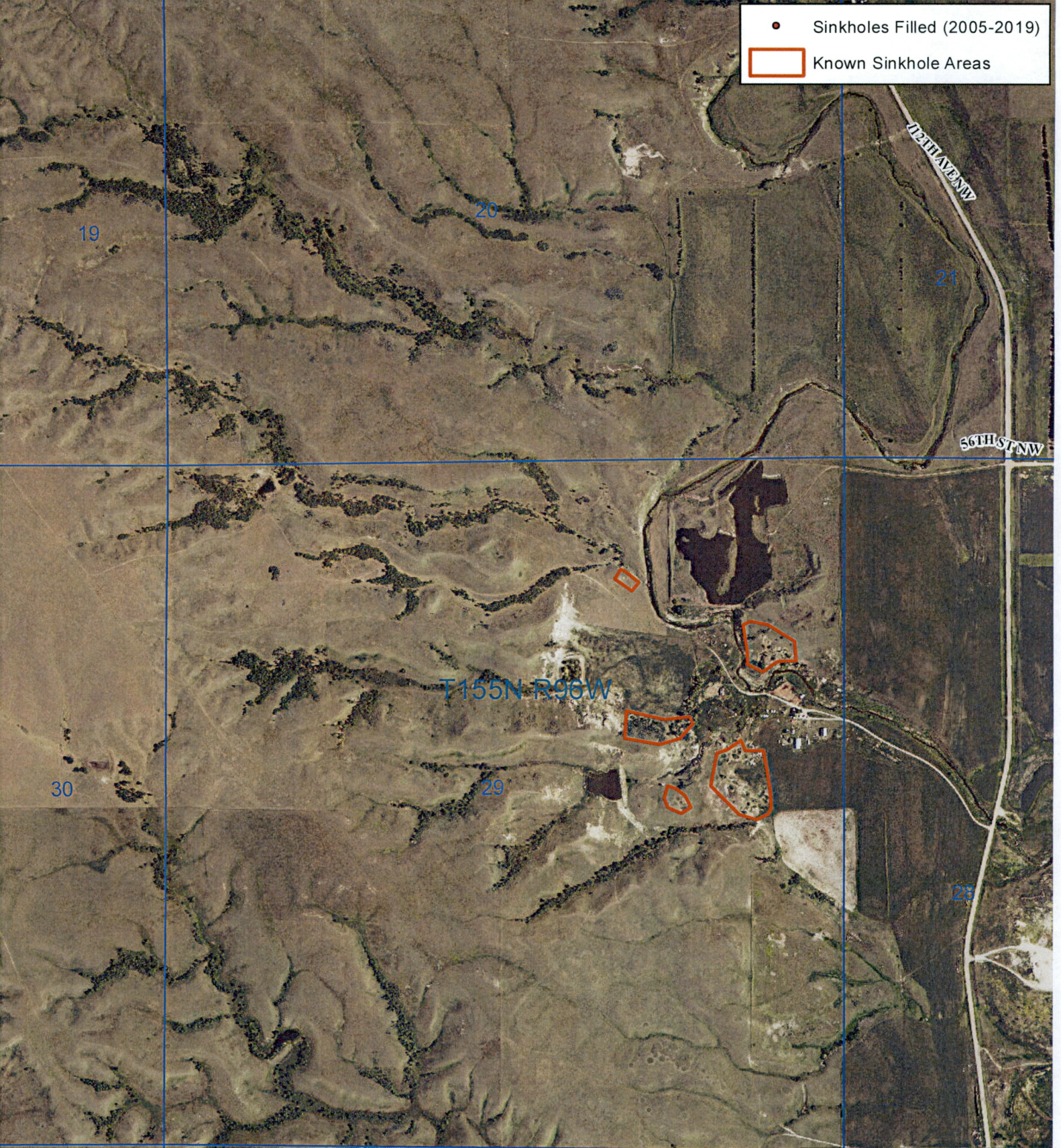
N

0 2,000 4,000  
 Feet

Havelock

21

- Sinkholes Filled (2005-2019)
- Known Sinkhole Areas



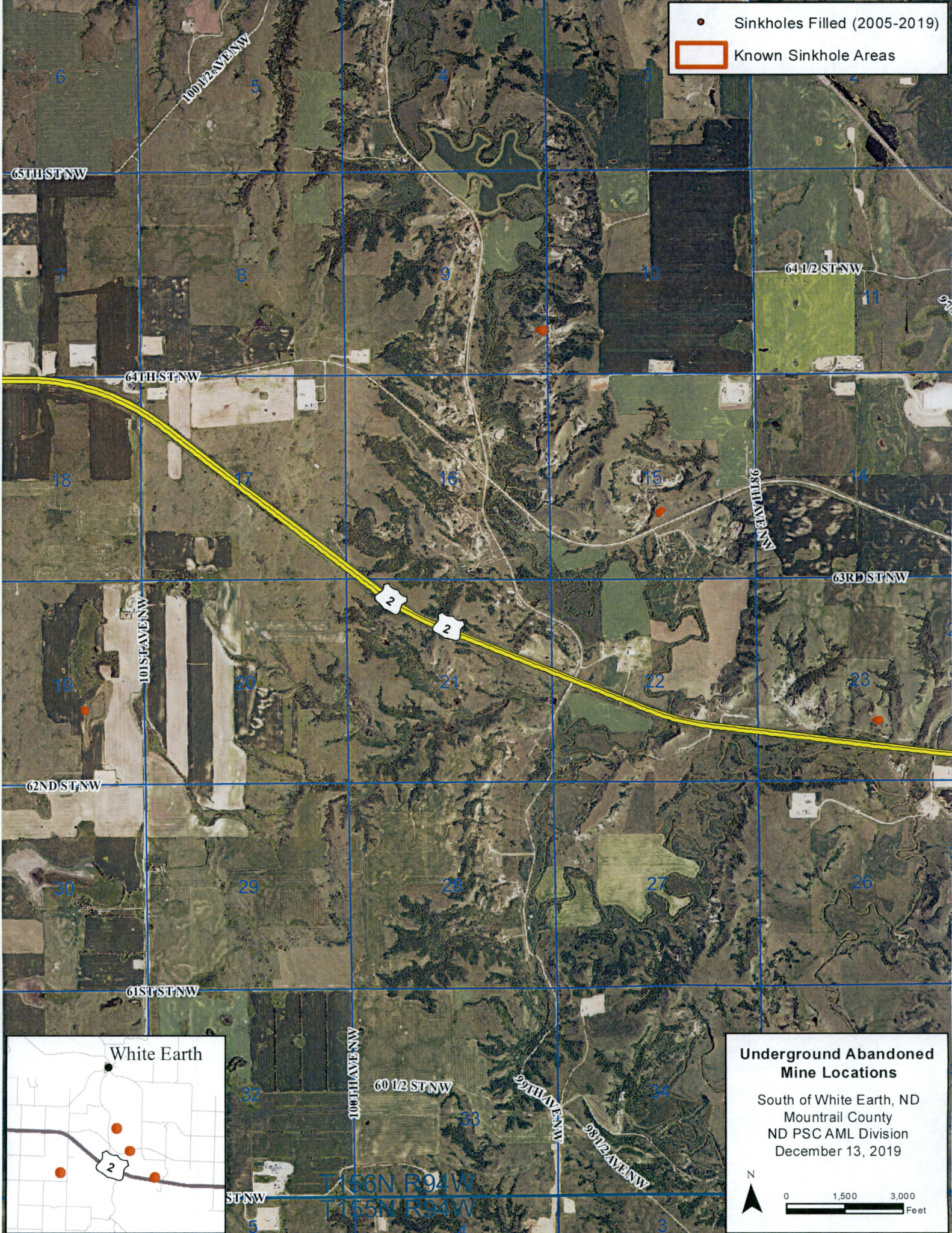
**Underground Abandoned Mine Locations**

SW of Tioga, ND  
 Williams County  
 ND PSC AML Division  
 December 13, 2019

N

0 500 1,000  
 Feet

- Sinkholes Filled (2005-2019)
- Known Sinkhole Areas



**Underground Abandoned Mine Locations**

South of White Earth, ND  
Mountrail County  
ND PSC AML Division  
December 13, 2019

N

0 1,500 3,000

Feet

# STANDARDIZED ENVIRONMENTAL ASSESSMENT

## Attachment 3, Potential Sinkhole Location Maps 2021

Prepared by

North Dakota Public Service Commission

In Cooperation with

United States Department of the Interior  
Office of Surface Mining Reclamation and Enforcement  
Casper Field Office

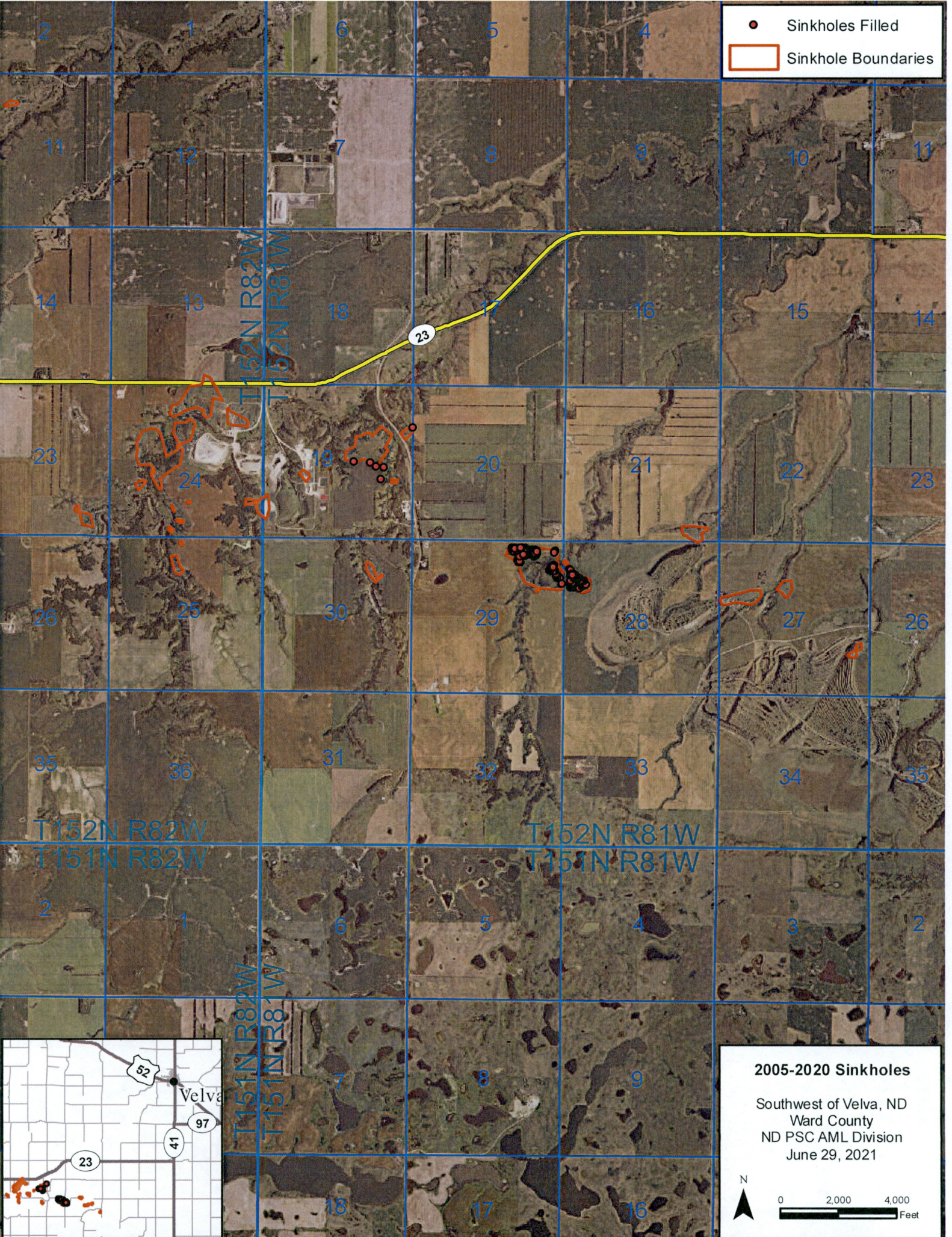
(Revised June 2021)

Note to users:

It is impossible to predict where mining-related sinkholes will occur during 2021. This appendix contains maps of locations where potential sinkhole filling projects may be conducted in 2021.

<b>Proposed North Dakota Sinkhole Filling Project Locations 2020</b>						
<b>Location</b>	<b>PA Name</b>	<b>PA</b>	<b>County</b>	<b>Township</b>	<b>Range</b>	<b>Section(s)</b>
Beulah	Beulah	ND014	Mercer	144	87	6, 7, 18, 30
			Mercer	144	88	12, 13, 15, 25
Garrison	Garrison	ND019	McLean	148	84	7, 8, 17, 18
Hanks	Hanks	ND147	William	159	101	17, 19
				159	102	12, 13, 24
Haynes	Haynes	ND124	Adams	129	94	6, 7, 8, 9, 15, 16, 17, 21
				129	95	1
Noonan	Noonan	ND029	Divide	162	95	3, 9, 10
			Burke	162	94	7
Parshall	Parshall	ND090	Mountrail	152	89	19
				152	90	13
Scranton	Scranton	ND528	Bowman	131	100	24
Velva	Buechler	ND004	Ward	152	81	13, 19, 20, 28, 29
Williston	Williams	ND111	Williams	154	100	7, 8, 9, 17, 19, 20, 21, 22,
Wilton	Wilton	ND001	Burleigh	141	79	2
		ND001	Burleigh	142	79	4, 5, 6, 8, 9, 10, 11, 15, 28
Zap	Beulah/Zap	ND014	Mercer	144	89	17, 20, 22, 23, 24, 25, 26
				144	88	4

- Sinkholes Filled
- Sinkhole Boundaries



**2005-2020 Sinkholes**

Southwest of Velva, ND  
 Ward County  
 ND PSC AML Division  
 June 29, 2021

N

0 2,000 4,000  
 Feet



# Public Service Commission

## State of North Dakota

AML\2021\Rvw\_Ltrs\_AML\_Activities\_2021\_6-28-21

### COMMISSIONERS

Julie Fedorchak  
Randy Christmann  
Brian Kroshus

600 East Boulevard, Dept. 408  
Bismarck, North Dakota 58505-0480  
Web: [www.psc.nd.gov](http://www.psc.nd.gov)  
E-mail: [ndpsc@nd.gov](mailto:ndpsc@nd.gov)  
Phone: 701-328-2400  
ND Toll Free: 1-877-245-6685  
Fax: 701-328-2410  
TDD: 800-366-6888 or 711

June 28, 2021

Kathy Duttenhefner  
Natural Resources Management Coordinator  
ND Parks & Recreation Department  
1600 East Century Ave. Suite 3  
Bismarck, ND 58503

Dear Ms. Duttenhefner:

The Public Service Commission is planning additional reclamation activities in 2021 at Abandoned Mine Land (AML) Sites near Belfield, an emergency coal refuse fire near Velva and sinkhole filling near Beulah, Garrison, Hanks, Haynes, Noonan, Parshall, Velva, Williston, Wilton, Zap and other areas as reported to us. Contractors selected through competitive bidding will conduct work on all projects.

As part of the project approval process, our office requests concurrence that the proposed reclamation work will not adversely affect any threatened, endangered or rare plant species. Please reply regarding these proposed projects **as soon as possible**.

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site in the SE ¼ SE1/4 Section 29, T140 N, R99W covering about 1.5 acres near a rural home. The property address is 12919 35<sup>th</sup> Street SW, Belfield, ND. Drilling encountered several areas of potential collapse. Either grout, foamed sand or a combination will be used to fill the voids and stabilize the surface. Surface disturbance will be minimal and will be confined to roads and road shoulders.

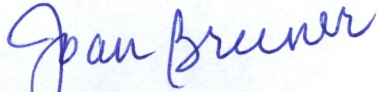
2021 Emergency De Pue Coal Refuse Fire: A coal refuse pile ignited sometime in 2017 by a lightning strike to a nearby tree. The fire is on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The continuing drought and death of surrounding trees in addition to a Ward County Emergency Management Agency designation of Fire Emergency and Restrictive Burn Ban for Ward County on March 16, 2021, has elevated the fire to emergency status. Reclamation includes excavation of a receiving trench and transfer of burning coal refuse into the trench and capping.

The 2021 North Sinkhole Filling AML Project and the 2021 South Sinkhole Filling AML Project will be conducted to fill dangerous sinkholes caused by mine collapse. Similar sinkhole projects have been conducted since the 1980s. Although we cannot predict where dangerous sinkholes will occur, maps and the updated environmental assessment for sinkhole filling projects covers all areas that have been filled since 2011. These are available at:

[https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA\\_2017\\_2021\\_Sinkhole\\_Final.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA_2017_2021_Sinkhole_Final.pdf)  
[https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA\\_2017\\_2021\\_Sinkhole\\_Maps12517.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA_2017_2021_Sinkhole_Maps12517.pdf)

We expect these projects to be completed during the 2021 construction season. Thank you for your assistance in this matter. If you have any questions or need more information, please contact me at [jobreiner@nd.gov](mailto:jobreiner@nd.gov) or 701.328.2412.

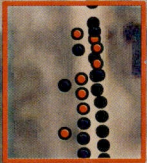
Sincerely,



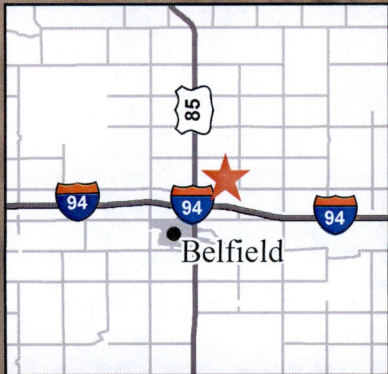
Joan Breiner, Ph.D.  
Assistant Director  
Abandoned Mine Lands Division

Enclosures

- Coal Drillhole
- Void Drillhole



Work area



**PSC Drillholes  
Belfield Site**

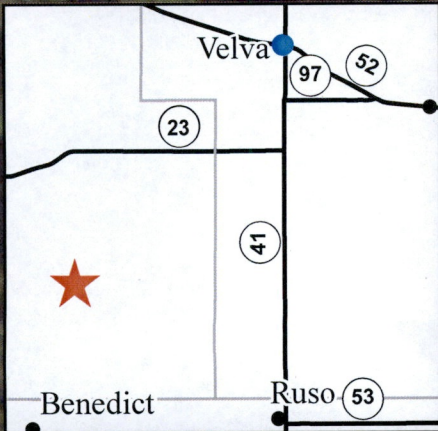
T140N R99W Sec 28  
Belfield, ND  
Stark County  
ND PSC AML Division  
June 22nd, 2021

N  
0 50 100  
Feet



Coal Refuse Fire

T152N R81W  
T151N R81W



**De Peu Mine  
Coal Refuse Fire**

Section 36, T152N, R81W  
Section 1, T151N, R81W  
Ward County, ND  
June 23, 2021

N  
0 50 100  
Feet



# Public Service Commission

## State of North Dakota

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### COMMISSIONERS

Julie Fedorchak  
Randy Christmann  
Brian Kroshus

600 East Boulevard, Dept. 408  
Bismarck, North Dakota 58505-0480  
Web: [www.psc.nd.gov](http://www.psc.nd.gov)  
E-mail: [ndpsc@nd.gov](mailto:ndpsc@nd.gov)  
Phone: 701-328-2400  
ND Toll Free: 1-877-245-6685  
Fax: 701-328-2410  
TDD: 800-366-6888 or 711

June 28, 2021

William Peterson, Ph.D.  
State Historic Preservation Officer  
State Historical Society of North Dakota  
612 East Boulevard Avenue  
Bismarck, ND 58505-0830

Dear Dr. Peterson:

The Public Service Commission is planning additional reclamation activities in 2021 at Abandoned Mine Land (AML) Sites near Belfield, an emergency coal refuse fire near Velva and sinkhole filling near Beulah, Garrison, Hanks, Haynes, Noonan, Parshall, Velva, Williston, Wilton, Zap and other areas as reported to us. Contractors selected through competitive bidding will conduct work on all projects.

As part of the project approval process, our office requests concurrence that our proposed reclamation work will not adversely affect any historical or archaeological resources. Please reply regarding these proposed projects **as soon as possible**.

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site in the SE ¼ SE1/4 Section 29, T140 N, R99W covering about 1.5 acres near a rural home. The property address is 12919 35<sup>th</sup> Street SW, Belfield, ND. Drilling encountered several areas of potential collapse. Either grout, foamed sand or a combination will be used to fill the voids and stabilize the surface. Surface disturbance will be minimal and will be confined to roads and road shoulders.

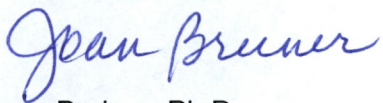
2021 Emergency De Pue Coal Refuse Fire: A coal refuse pile ignited sometime in 2017 by a lightning strike to a nearby tree. The fire is on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The continuing drought and death of surrounding trees in addition to a Ward County Emergency Management Agency designation of Fire Emergency and Restrictive Burn Ban for Ward County on March 16, 2021, has elevated the fire to emergency status. Reclamation includes excavation of a receiving trench and transfer of burning coal refuse into the trench and capping.

The 2021 North Sinkhole Filling AML Project and the 2021 South Sinkhole Filling AML Project will be conducted to fill dangerous sinkholes caused by mine collapse. Similar sinkhole projects have been conducted since the 1980s. Although we cannot predict where dangerous sinkholes will occur, maps and the updated environmental assessment for sinkhole filling projects covers all areas that have been filled since 2011. These are available at:

[https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA\\_2017\\_2021\\_Sinkhole\\_Final.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA_2017_2021_Sinkhole_Final.pdf)  
[https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA\\_2017\\_2021\\_Sinkhole\\_Maps12517.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA_2017_2021_Sinkhole_Maps12517.pdf)

We expect these projects to be completed during the 2021 construction season. Thank you for your assistance in this matter. If you have any questions or need more information, please contact me at [jobreiner@nd.gov](mailto:jobreiner@nd.gov) or 701.328.2412.

Sincerely,



Joan Breiner, Ph.D.  
Assistant Director  
Abandoned Mine Lands Division

Enclosures

- Coal Drillhole
- Void Drillhole

Work area



**PSC Drillholes  
Belfield Site**

T140N R99W Sec 28  
Belfield, ND  
Stark County  
ND PSC AML Division  
June 22nd, 2021

N

0 50 100  
Feet

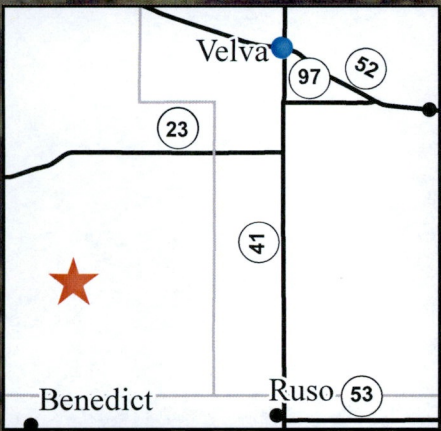


Coal Refuse Fire

T152N R81W  
T151N R81W

36

1



**De Peu Mine  
Coal Refuse Fire**

Section 36, T152N, R81W  
Section 1, T151N, R81W  
Ward County, ND  
June 23, 2021

N  
0 50 100  
Feet



# Public Service Commission

## State of North Dakota

---

### COMMISSIONERS

Julie Fedorchak  
Randy Christmann  
Brian Kroshus

600 East Boulevard, Dept. 408  
Bismarck, North Dakota 58505-0480  
Web: [www.psc.nd.gov](http://www.psc.nd.gov)  
E-mail: [ndpsc@nd.gov](mailto:ndpsc@nd.gov)  
Phone: 701-328-2400  
ND Toll Free: 1-877-245-6685  
Fax: 701-328-2410  
TDD: 800-366-6888 or 711

June 28, 2021

Jessica Johnson  
U.S. Fish and Wildlife Service  
Ecological Services  
3425 Miriam Avenue  
Bismarck, ND 58501-7926

Dear Ms. Johnson:

The Public Service Commission is planning additional reclamation activities in 2021 at Abandoned Mine Land (AML) Sites near Belfield, an emergency coal refuse fire near Velva and sinkhole filling near Beulah, Garrison, Hanks, Haynes, Noonan, Parshall, Velva, Williston, Wilton, Zap and other areas as reported to us. Contractors selected through competitive bidding will conduct work on all projects.

As part of the project approval process, our office requests concurrence that our proposed reclamation work will not adversely affect any threatened, endangered or rare animal or plant species. Please reply regarding these proposed projects **soon as possible**.

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site in the SE ¼ SE1/4 Section 29, T140 N, R99W covering about 1.5 acres near a rural home. The property address is 12919 35<sup>th</sup> Street SW, Belfield, ND. Drilling encountered several areas of potential collapse. Either grout, foamed sand or a combination will be used to fill the voids and stabilize the surface. Surface disturbance will be minimal and will be confined to roads and road shoulders.

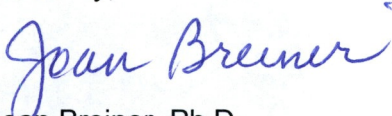
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[https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA\\_2017\\_2021\\_Sinkhole\\_Final.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA_2017_2021_Sinkhole_Final.pdf)  
[https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA\\_2017\\_2021\\_Sinkhole\\_Maps12517.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA_2017_2021_Sinkhole_Maps12517.pdf)

We expect these projects to be completed during the 2021 construction season. Thank you for your assistance in this matter. If you have any questions or need more information, please contact me at [jobreiner@nd.gov](mailto:jobreiner@nd.gov) or 701.328.2412.

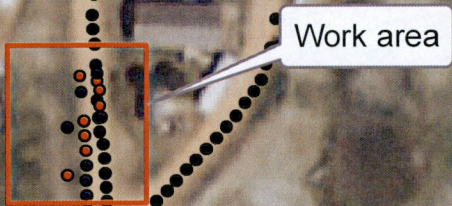
Sincerely,



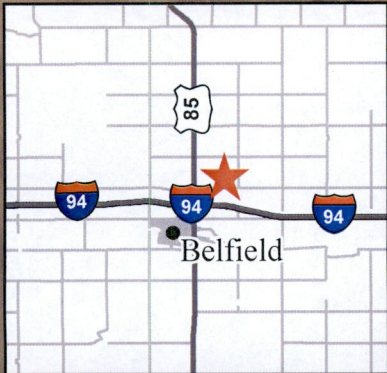
Joan Breiner, Ph.D.  
Assistant Director  
Abandoned Mine Lands Division

Enclosures

- Coal Drillhole
- Void Drillhole



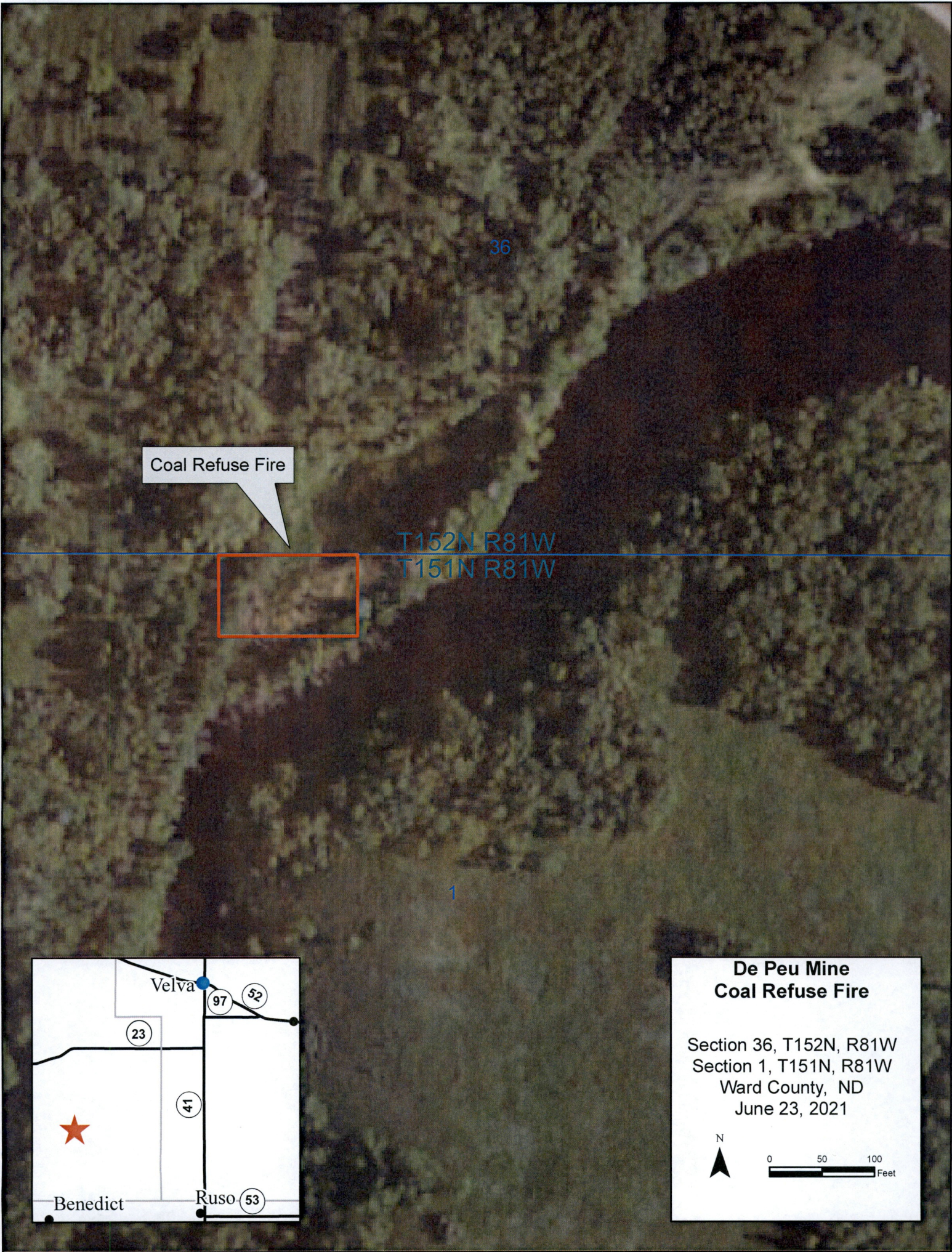
Work area



**PSC Drillholes  
Belfield Site**

T140N R99W Sec 28  
Belfield, ND  
Stark County  
ND PSC AML Division  
June 22nd, 2021

N  
0 50 100  
Feet

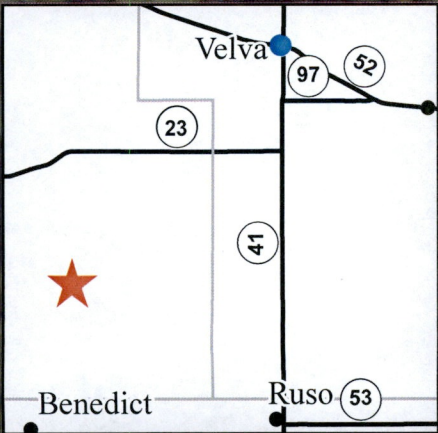


Coal Refuse Fire

T152N R81W  
T151N R81W

36

1



**De Peu Mine  
Coal Refuse Fire**

Section 36, T152N, R81W  
Section 1, T151N, R81W  
Ward County, ND  
June 23, 2021

N

0 50 100  
Feet



# Public Service Commission

## State of North Dakota

---

### COMMISSIONERS

Julie Fedorchak  
Randy Christmann  
Brian Kroshus

600 East Boulevard, Dept. 408  
Bismarck, North Dakota 58505-0480  
Web: [www.psc.nd.gov](http://www.psc.nd.gov)  
E-mail: [ndpsc@nd.gov](mailto:ndpsc@nd.gov)  
Phone: 701-328-2400  
ND Toll Free: 1-877-245-6685  
Fax: 701-328-2410  
TDD: 800-366-6888 or 711

June 28, 2021

Mr. Karl Rockeman, P.E.,  
Director, Division of Water Quality  
North Dakota Department of Environmental Quality  
918 East Divide Avenue  
Bismarck, ND 58501-1947

Dear Mr. Rockeman:

The Public Service Commission is planning additional reclamation activities in 2021 at Abandoned Mine Land (AML) Sites near Belfield, an emergency coal refuse fire near Velva and sinkhole filling near Beulah, Garrison, Hanks, Haynes, Noonan, Parshall, Velva, Williston, Wilton, Zap and other areas as reported to us. Contractors selected through competitive bidding will conduct work on all projects.

As part of the project approval process, our office requests concurrence that our proposed reclamation work will not adversely affect any surface or groundwater resources. Please reply regarding these proposed projects **as soon as possible**.

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site in the SE ¼ SE1/4 Section 29, T140 N, R99W covering about 1.5 acres near a rural home. The property address is 12919 35<sup>th</sup> Street SW, Belfield, ND. Drilling encountered several areas of potential collapse. Either grout, foamed sand or a combination will be used to fill the voids and stabilize the surface. Surface disturbance will be minimal and will be confined to roads and road shoulders.


2021 Emergency De Pue Coal Refuse Fire: A coal refuse pile ignited sometime in 2017 by a lightning strike to a nearby tree. The fire is on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The continuing drought and death of surrounding trees in addition to a Ward County Emergency Management Agency designation of Fire Emergency and Restrictive Burn Ban for Ward County on March 16, 2021, has elevated the fire to emergency status. Reclamation includes excavation of a receiving trench and transfer of burning coal refuse into the trench and capping.

The 2021 North Sinkhole Filling AML Project and the 2021 South Sinkhole Filling AML Project will be conducted to fill dangerous sinkholes caused by mine collapse. Similar sinkhole projects have been conducted since the 1980s. Although we cannot predict where dangerous sinkholes will occur, maps and the updated environmental assessment for sinkhole filling projects covers all areas that have been filled since 2011. These are available at:

[https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA\\_2017\\_2021\\_Sinkhole\\_Final.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2016/EA_2017_2021_Sinkhole_Final.pdf)  
[https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA\\_2017\\_2021\\_Sinkhole\\_Maps12517.pdf](https://www.psc.nd.gov/jurisdiction/aml/Docs/2017/EA_2017_2021_Sinkhole_Maps12517.pdf)

We expect these projects to be completed during the 2021 construction season. Thank you for your assistance in this matter. If you have any questions or need more information, please contact me at [jobreiner@nd.gov](mailto:jobreiner@nd.gov) or 701.328.2412.

Sincerely,



Joan Breiner, Ph.D.  
Assistant Director  
Abandoned Mine Lands Division

Enclosures

- Coal Drillhole
- Void Drillhole



Work area



**PSC Drillholes  
Belfield Site**

T140N R99W Sec 28  
Belfield, ND  
Stark County  
ND PSC AML Division  
June 22nd, 2021

N

0 50 100  
Feet

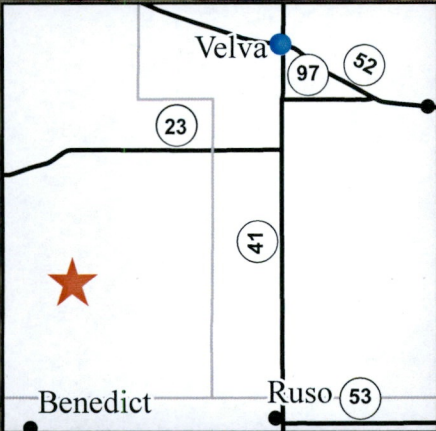


Coal Refuse Fire

T152N R81W  
T151N R81W

36

1



**De Peu Mine  
Coal Refuse Fire**

Section 36, T152N, R81W  
Section 1, T151N, R81W  
Ward County, ND  
June 23, 2021

N

0 50 100  
Feet

## Hamre, John G.

---

**From:** Breiner, Joan M.  
**Sent:** Wednesday, June 30, 2021 2:13 PM  
**To:** Sieving, John  
**Cc:** Moos, Dean K.; Hamre, John G.  
**Subject:** USF&W Concurrence Biological Assessments.  
**Attachments:** Remote Backfilling at Belfield Biological Assessment 2021-06-30-1.pdf; 2021 Coal Refuse Fire Biological Assessment 2021-06-30.pdf

John,

You will be receiving a request for authorization to proceed for the following projects:

2021 Sinkhole Filling  
2021 Emergency De Pue Coal Refuse Fire  
Remote Backfilling at the 2021 Belfield Exploratory Drilling Site.

Attached are the USF&W Biological Assessments for the fire and the remote backfilling.

I started one for sinkhole filling that encompasses most of the western part of North Dakota. That looks like it presents other issues, but we now have 9 sites. Do you want an assessment for each site? It takes about ½ hour for each because it's mostly redundant information between the sites.

Thanks.

Happy 4<sup>th</sup> of July!

**Joan Breiner, Ph.D.**  
Assistant Director

Abandoned Mine Lands Division  
North Dakota Public Service Commission  
600 E Boulevard Ave Dept 408  
Bismarck, ND 58505

[jobreiner@nd.gov](mailto:jobreiner@nd.gov) 701.328.2412

---

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# Remote Backfilling At The 2021 Belfield Exploratory Drilling Site

## Biological Assessment

Prepared using IPaC

Generated by Joan Breiner (jobreiner@nd.gov)

June 30, 2021

The purpose of this Biological Assessment (BA) is to assess the effects of the proposed project and determine whether the project may affect any Federally threatened, endangered, proposed or candidate species. This BA is prepared in accordance with legal requirements set forth under [Section 7 of the Endangered Species Act \(16 U.S.C. 1536 \(c\)\)](#).

In this document, any data provided by U.S. Fish and Wildlife Service is based on data as of June 30, 2021.

Prepared using IPaC version 5.61.0

# Remote Backfilling At The 2021 Belfield Exploratory Drilling Site Biological Assessment

## Table Of Contents

1 Description of the action	5
1.1 Project name	5
1.2 Executive summary	5
1.3 Project description	6
1.3.1 Location	6
1.3.2 Description of project habitat	7
1.3.3 Project proponent information	7
1.3.4 Project purpose	7
1.3.5 Project type and deconstruction	8
1.3.6 Anticipated environmental stressors	10
1.4 Action area	11
1.5 Conservation measures	12
1.6 Prior consultation history	12
1.7 Other agency partners and interested parties	12
1.8 Other reports and helpful information	12
2 Species effects analysis	13
2.1 Northern Long-eared Bat	13
Justification for exclusion	13
2.2 Whooping Crane	13
Justification for exclusion	13
3 Critical habitat effects analysis	14
4 Summary Discussion, Conclusion, and Effect Determinations	15
4.1 Effect determination summary	15
4.2 Summary discussion	15
4.3 Conclusion	15



# 1 Description Of The Action

## 1.1 Project Name

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site

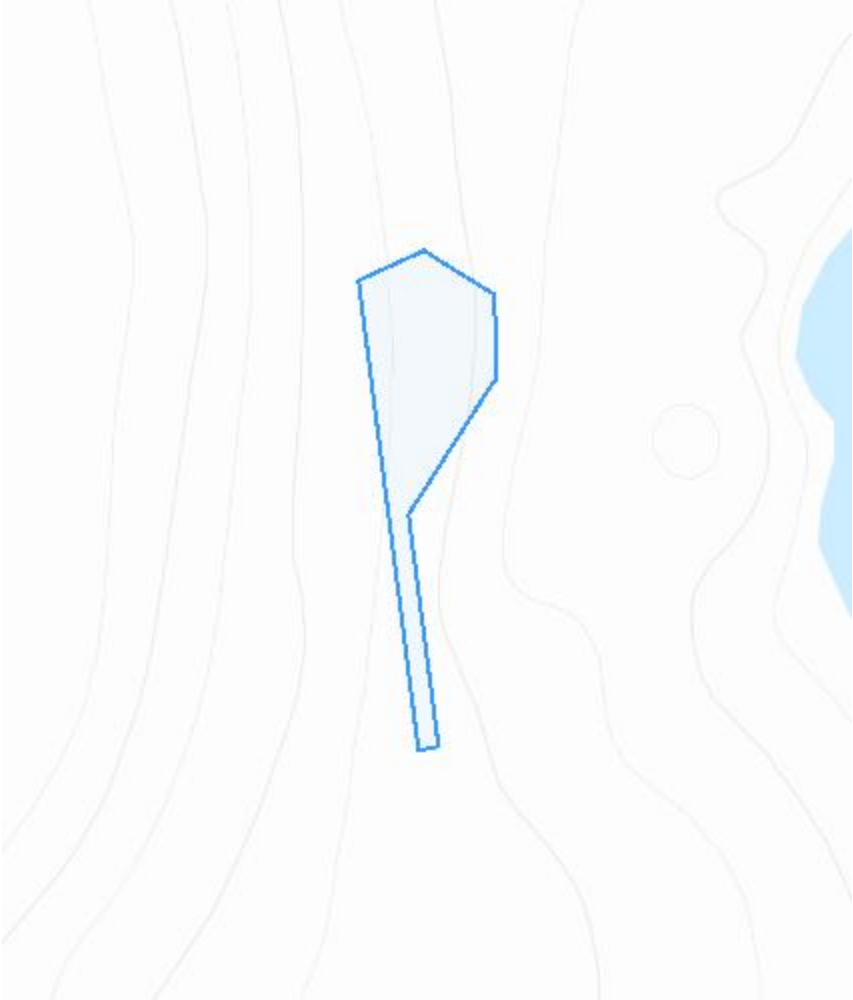
## 1.2 Executive Summary

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site: This remote backfilling project will stabilize underground coal mine workings near a homestead in SE ¼ SE ¼ Section 19, T140N, R99W, northeast of Belfield, Stark County. This project will use holes drilled and cased in the 2021 Exploratory Drilling AML Project. An estimated 50 cubic yards of grout or 50 tons of foamed sand will be pumped into mine voids. Work is expected to be conducted between August 1 and September 29, 2021. The estimated project cost is \$25,000.00.

[Effect determination summary](#)

# 1.3 Project Description

## 1.3.1 Location



**LOCATION**

Stark County, North Dakota

**1.3.2 Description of project habitat**

The work area will be restricted to roads.

**1.3.3 Project proponent information**

*Provide information regarding who is proposing to conduct the project, and their contact information. Please provide details on whether there is a Federal nexus.*

***Requesting Agency***

STATE OF NORTH DAKOTA (ND)

**FULL NAME**

Joan Breiner

**STREET ADDRESS**

600 East Boulevard Ave.

Department 408

**CITY**

Bismarck

**STATE**

ND

**ZIP**

58505-0408

**PHONE NUMBER**

(701) 328-2412

**E-MAIL ADDRESS**

jobreiner@nd.gov

***Lead agency***

Lead agency is the same as requesting agency

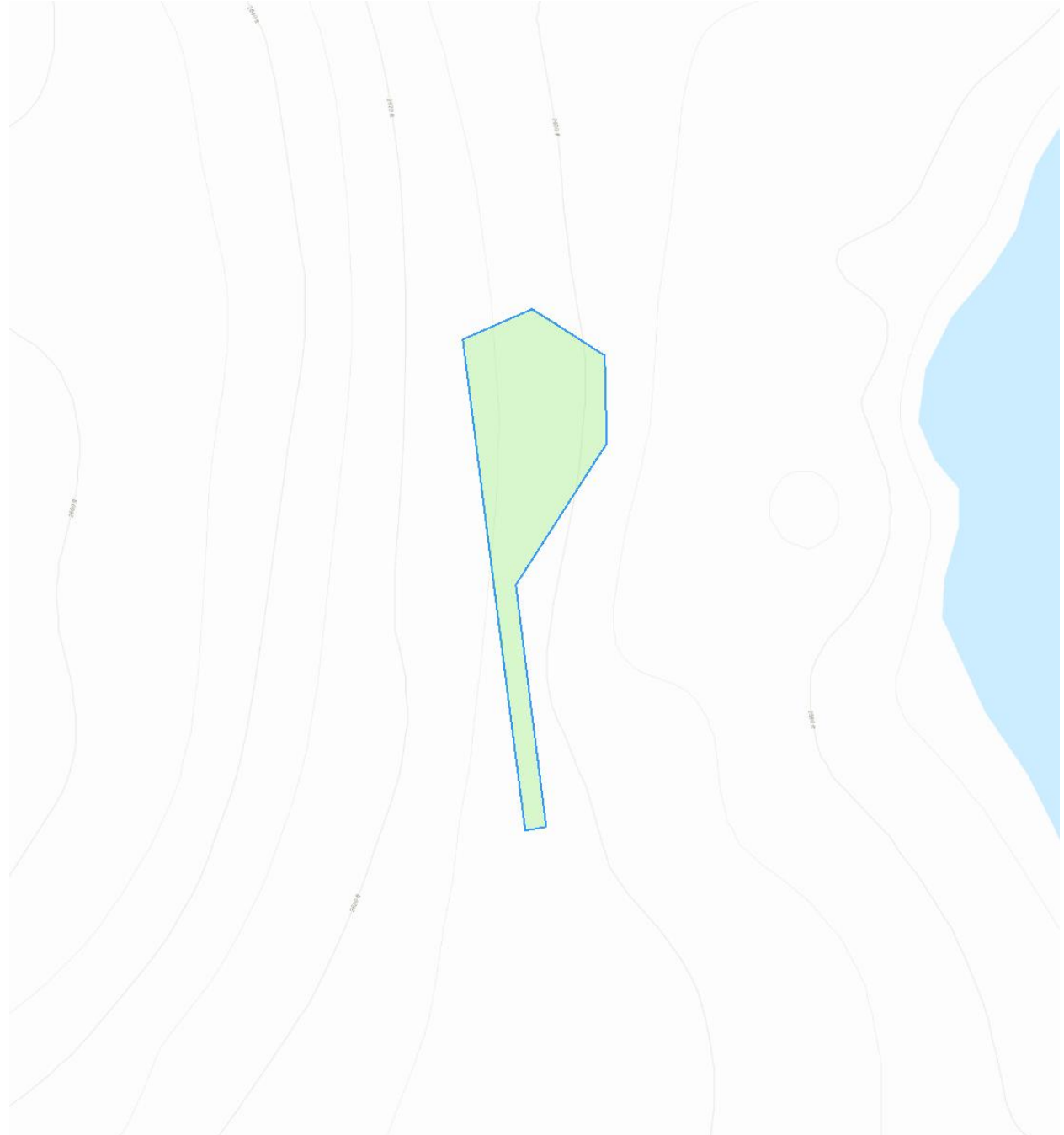
**1.3.4 Project purpose**

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site: This remote backfilling project will stabilize underground coal mine workings near a homestead in SE ¼ SE ¼ Section 19, T140N, R99W, northeast of Belfield, Stark County. This project will use holes drilled and cased in the 2021 Exploratory Drilling AML Project. An estimated 50 cubic yards of grout or 50 tons of foamed sand will be pumped into mine voids. Work is expected to be conducted between August 1 and September 29, 2021. The estimated project cost is \$25,000.00.

### 1.3.5 Project type and deconstruction

This project is a remote backfilling project.

#### 1.3.5.1 Project map



**LEGEND**



Project footprint



Work Area: Abandoned underground coal mine reclamation

### **1.3.5.2 abandoned underground coal mine reclamation**

***Activity start date***

July 14, 2021

***Activity end date***

August 26, 2021

***Stressors***

This activity is not expected to have any impact on the environment.

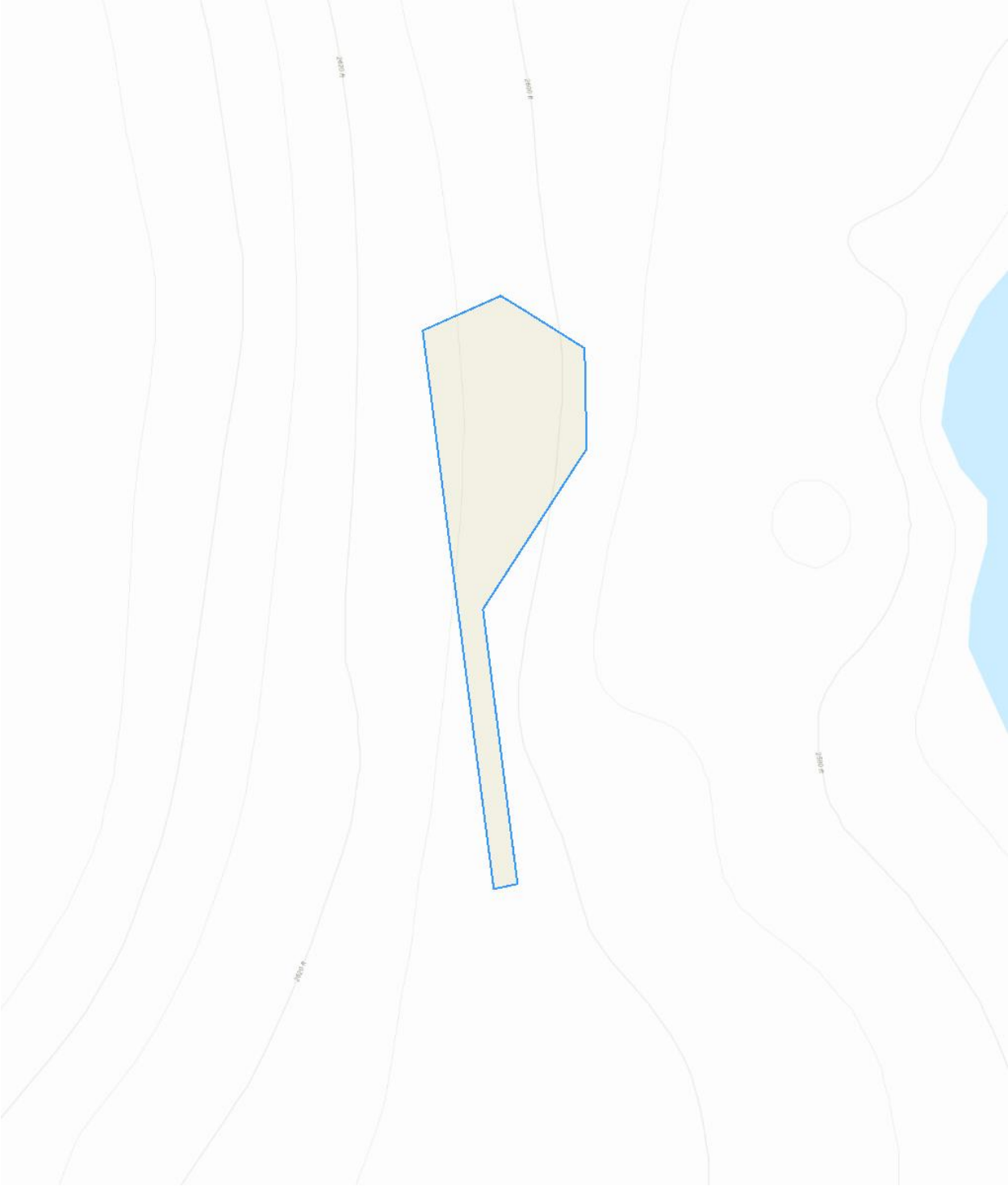
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### **1.3.6 Anticipated environmental stressors**

*Describe the anticipated effects of your proposed project on the aspects of the land, air and water that will occur due to the activities above. These should be based on the activity deconstructions done in the previous section and will be used to inform the action area.*

**1.4 Action Area**



## **1.5 Conservation Measures**

*Describe any proposed measures being implemented as part of the project that are designed to reduce the impacts to the environment and their resulting effects to listed species. To avoid extra verbiage, don't list measures that have no relevance to the species being analyzed.*

*No conservation measures have been selected for this project.*

## **1.6 Prior Consultation History**

None.

## **1.7 Other Agency Partners And Interested Parties**

No other agencies are involved.

## **1.8 Other Reports And Helpful Information**

The work site is a road to a farm home. Work will not disturb any endangered or threatened species.

## **2 Species Effects Analysis**

*This section describes, species by species, the effects of the proposed action on listed, proposed, and candidate species, and the habitat on which they depend. In this document, effects are broken down as direct interactions (something happening directly to the species) or indirect interactions (something happening to the environment on which a species depends that could then result in effects to the species).*

*These interactions encompass effects that occur both during project construction and those which could be ongoing after the project is finished. All effects, however, should be considered, including effects from direct and indirect interactions and cumulative effects.*

### **2.1 Northern Long-Eared Bat**

*This species has been excluded from analysis in this environmental review document.*

#### **Justification for exclusion**

The work will have no effect on Northern Long-eared Bat habitat.

### **2.2 Whooping Crane**

*This species has been excluded from analysis in this environmental review document.*

#### **Justification for exclusion**

The project work will have not effect on Whooping Crane habitat.

### **3 Critical Habitat Effects Analysis**

*No critical habitats intersect with the project action area.*

# 4 Summary Discussion, Conclusion, And Effect Determinations

## 4.1 Effect Determination Summary

SPECIES (COMMON NAME)	SCIENTIFIC NAME	LISTING STATUS	PRESENT IN ACTION AREA	EFFECT DETERMINATION
<a href="#">Northern Long-eared Bat</a>	Myotis septentrionalis	Threatened	No	NE
<a href="#">Whooping Crane</a>	Grus americana	Endangered	No	NE

## 4.2 Summary Discussion

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site: This remote backfilling project will stabilize underground coal mine workings near a homestead in SE ¼ SE ¼ Section 19, T140N, R99W, northeast of Belfield, Stark County. This project will use holes drilled and cased in the 2021 Exploratory Drilling AML Project. An estimated 50 cubic yards of grout or 50 tons of foamed sand will be pumped into mine voids. Work is expected to be conducted between August 1 and September 29, 2021. The estimated project cost is \$25,000.00.

## 4.3 Conclusion

Remote Backfilling at the 2021 Belfield Exploratory Drilling Site: This remote backfilling project will stabilize underground coal mine workings near a homestead in SE ¼ SE ¼ Section 19, T140N, R99W, northeast of Belfield, Stark County. This project will use holes drilled and cased in the 2021 Exploratory Drilling AML Project. An estimated 50 cubic yards of grout or 50 tons of foamed sand will be pumped into mine voids. Work is expected to be conducted between August 1 and September 29, 2021. The estimated project cost is \$25,000.00.

# 2021 Emergency De Pue Coal Refuse Fire

## Biological Assessment

Prepared using IPaC

Generated by Joan Breiner (jobreiner@nd.gov)

June 30, 2021

The purpose of this Biological Assessment (BA) is to assess the effects of the proposed project and determine whether the project may affect any Federally threatened, endangered, proposed or candidate species. This BA is prepared in accordance with legal requirements set forth under [Section 7 of the Endangered Species Act \(16 U.S.C. 1536 \(c\)\)](#).

In this document, any data provided by U.S. Fish and Wildlife Service is based on data as of June 30, 2021.

Prepared using IPaC version 5.61.0

# 2021 Emergency De Pue Coal Refuse Fire Biological Assessment

## Table Of Contents

1 Description of the action	5
1.1 Project name	5
1.2 Executive summary	5
1.3 Project description	6
1.3.1 Location	6
1.3.2 Description of project habitat	7
1.3.3 Project proponent information	7
1.3.4 Project purpose	8
1.3.5 Project type and deconstruction	8
1.3.6 Anticipated environmental stressors	11
1.4 Action area	14
1.5 Conservation measures	15
1.6 Prior consultation history	15
1.7 Other agency partners and interested parties	15
1.8 Other reports and helpful information	15
2 Species effects analysis	16
2.1 Dakota Skipper	16
Justification for exclusion	16
2.2 Northern Long-eared Bat	16
Justification for exclusion	16
2.3 Piping Plover	16
Justification for exclusion	16
2.4 Red Knot	17
Justification for exclusion	17
2.5 Whooping Crane	17
Justification for exclusion	17
3 Critical habitat effects analysis	18
4 Summary Discussion, Conclusion, and Effect Determinations	19
4.1 Effect determination summary	19
4.2 Summary discussion	19
4.3 Conclusion	19



# 1 Description Of The Action

## 1.1 Project Name

2021 Emergency De Pue Coal Refuse Fire

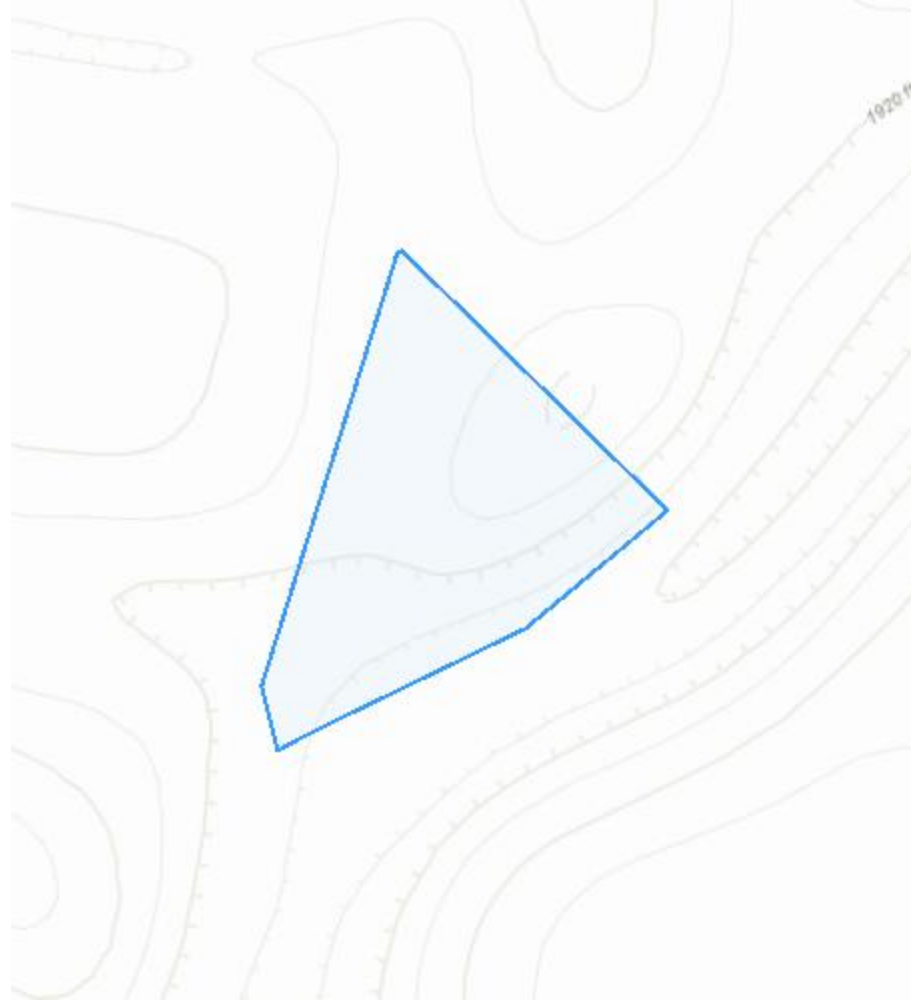
## 1.2 Executive Summary

2021 Emergency De Pue Coal Refuse Fire: A coal refuse fire is located on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The project plan includes removal and stock piling of topsoil, excavation of a receiving trench and transfer of approximately 500 linear feet of burning coal refuse into the trench. The burning coal fines will be mixed with excavated spoil and packed to extinguish the fire. The excavated area will be regraded to approximate original contour and topsoil respread. Approximately 100 feet of road/incline undermined by the burning coal refuse will be rebuilt. Work is expected to be completed by mid-July 2021 at an estimated cost of \$7,000.

[Effect determination summary](#)

## 1.3 Project Description

### 1.3.1 Location



**LOCATION**

Ward County, North Dakota

**1.3.2 Description of project habitat**

Abandoned Surface Coal Mine refuse pile near a mine pit with a berm between the pit and refuse on the north, east and south sides. The west side is an incline to the bottom of the mine. The area is vegetated with small trees (less than 4 inches in diameter), grasses and forbs. The area is used as a pasture for cattle.

**1.3.3 Project proponent information**

*Provide information regarding who is proposing to conduct the project, and their contact information. Please provide details on whether there is a Federal nexus.*

***Requesting Agency***

STATE OF NORTH DAKOTA (ND)

**FULL NAME**

Joan Breiner

**STREET ADDRESS**

600 East Boulevard Ave.

Department 408

**CITY**

Bismarck

**STATE**

ND

**ZIP**

58505-0408

**PHONE NUMBER**

(701) 328-2412

**E-MAIL ADDRESS**

jobreiner@nd.gov

***Lead agency***

Lead agency is the same as requesting agency

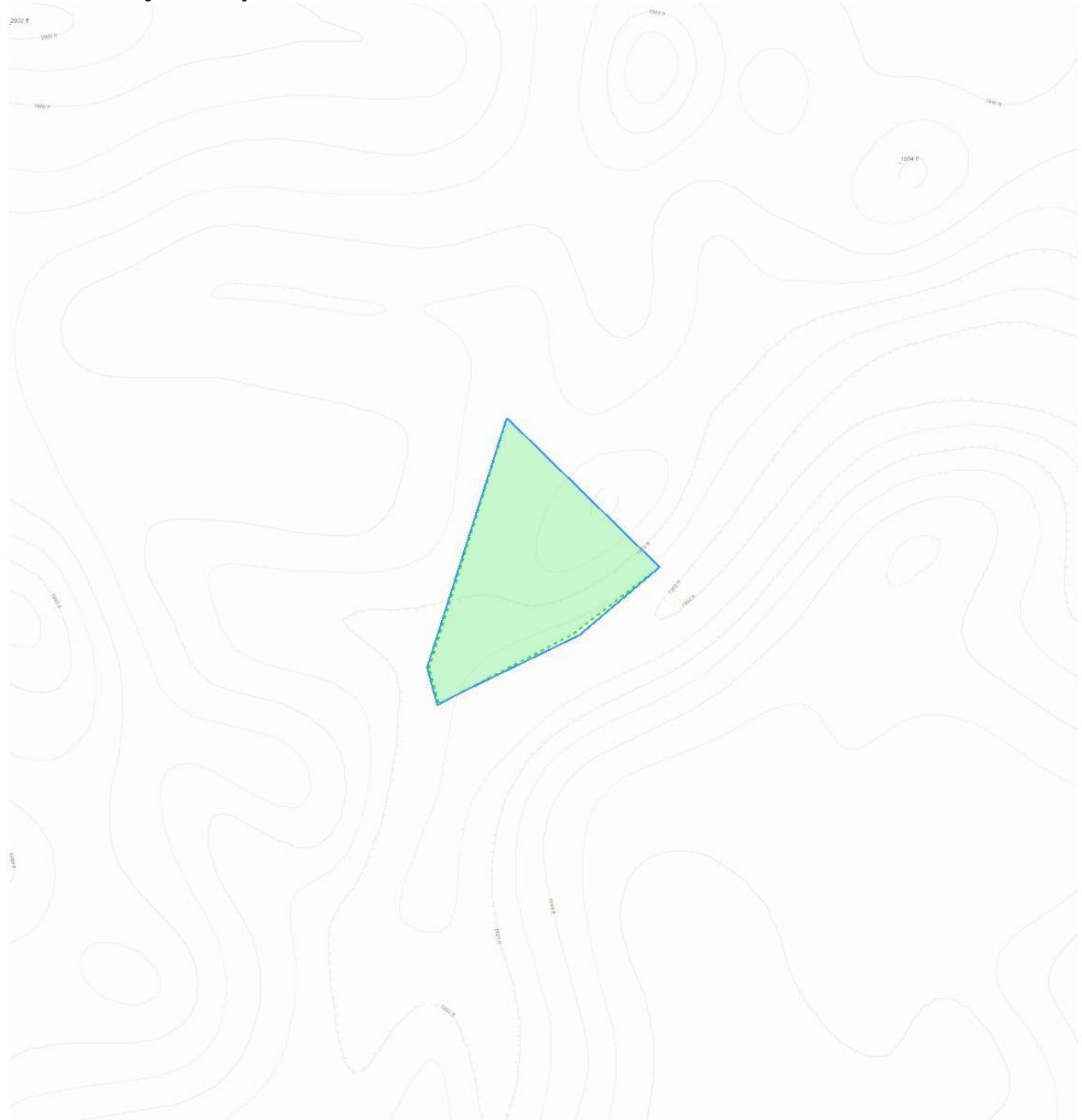
### **1.3.4 Project purpose**

2021 Emergency De Pue Coal Refuse Fire: A coal refuse fire is located on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The project plan includes removal and stock piling of topsoil, excavation of a receiving trench and transfer of approximately 500 linear feet of burning coal refuse into the trench. The burning coal fines will be mixed with excavated spoil and packed to extinguish the fire. The excavated area will be regraded to approximate original contour and topsoil respread. Approximately 100 feet of road/incline undermined by the burning coal refuse will be rebuilt. Work is expected to be completed by mid-July 2021 at an estimated cost of \$7,000.

### **1.3.5 Project type and deconstruction**

This project is a extinguish coal refuse fire project.

### 1.3.5.1 Project map



LEGEND



Project footprint



De Pue Mine Refuse Fire: Landscaping/restoration

### 1.3.5.2 landscaping/restoration

**Activity start date**

July 05, 2021

**Activity end date**

July 15, 2021

**Stressors**

HUMAN ACTIVITIES

- [Increase in soil disturbance](#)

**Description**

2021 Emergency De Pue Coal Refuse Fire: A coal refuse fire is located on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The project plan includes removal and stock piling of topsoil, excavation of a receiving trench and transfer of approximately 500 linear feet of burning coal refuse into the trench. The burning coal fines will be mixed with excavated spoil and packed to extinguish the fire. The excavated area will be regraded to approximate original contour and topsoil respread. Approximately 100 feet of road/incline undermined by the burning coal refuse will be rebuilt. Work is expected to be completed by mid-July 2021 at an estimated cost of \$7,000.

### 1.3.6 Anticipated environmental stressors

*Describe the anticipated effects of your proposed project on the aspects of the land, air and water that will occur due to the activities above. These should be based on the activity deconstructions done in the previous section and will be used to inform the action area.*

#### 1.3.6.1 Human Activities

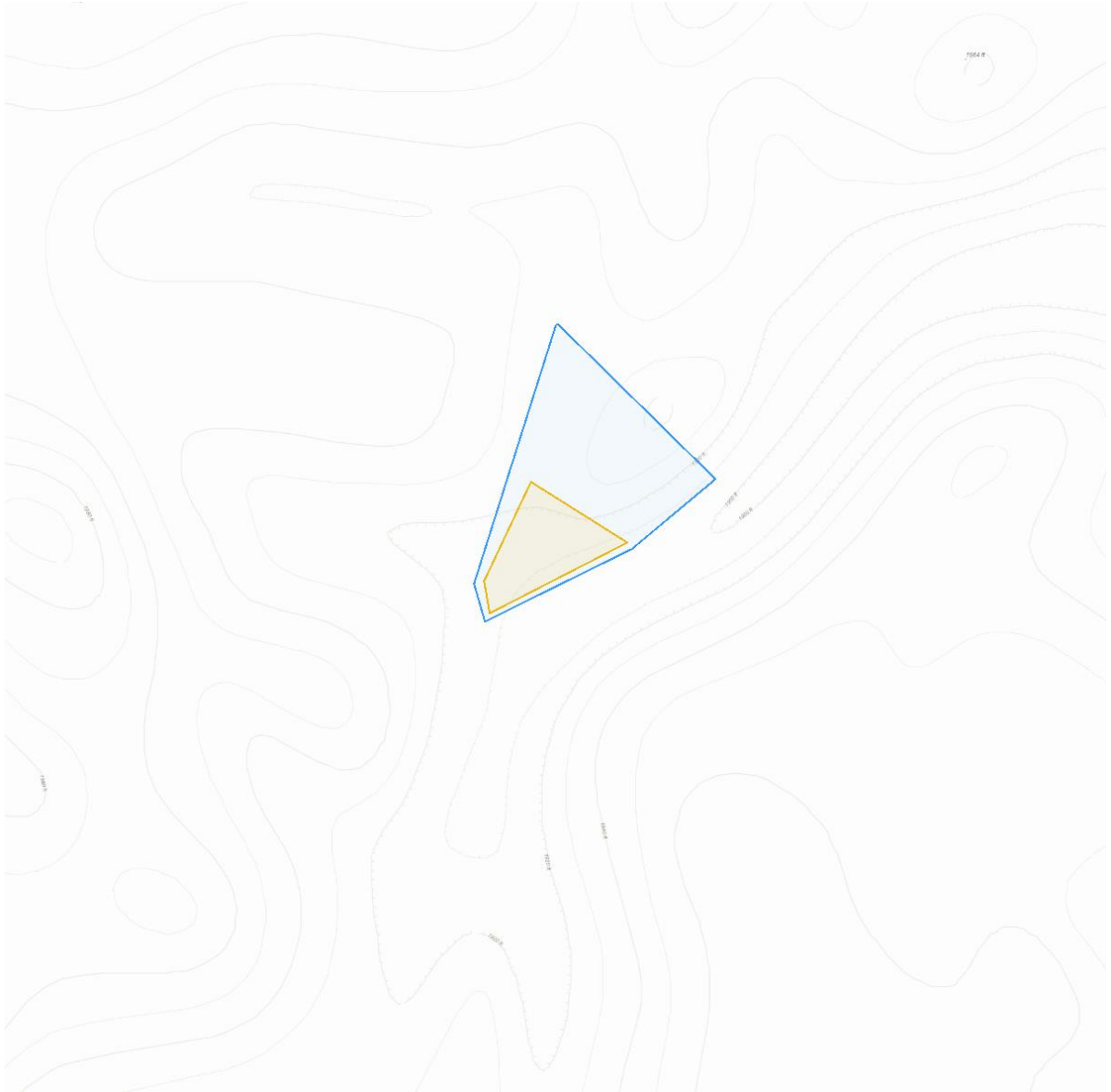
Human actions in the environment (e.g., fishing, hunting, farming, walking, etc.).

### 1.3.6.1.1 Increase in soil disturbance


#### ANTICIPATED MAGNITUDE


one-half acre of already burned material will be disturbed. Some surrounding soil may be put aside for topsoil respread.

#### STRESSOR LOCATION



LEGEND

 Project footprint

 Stressor location

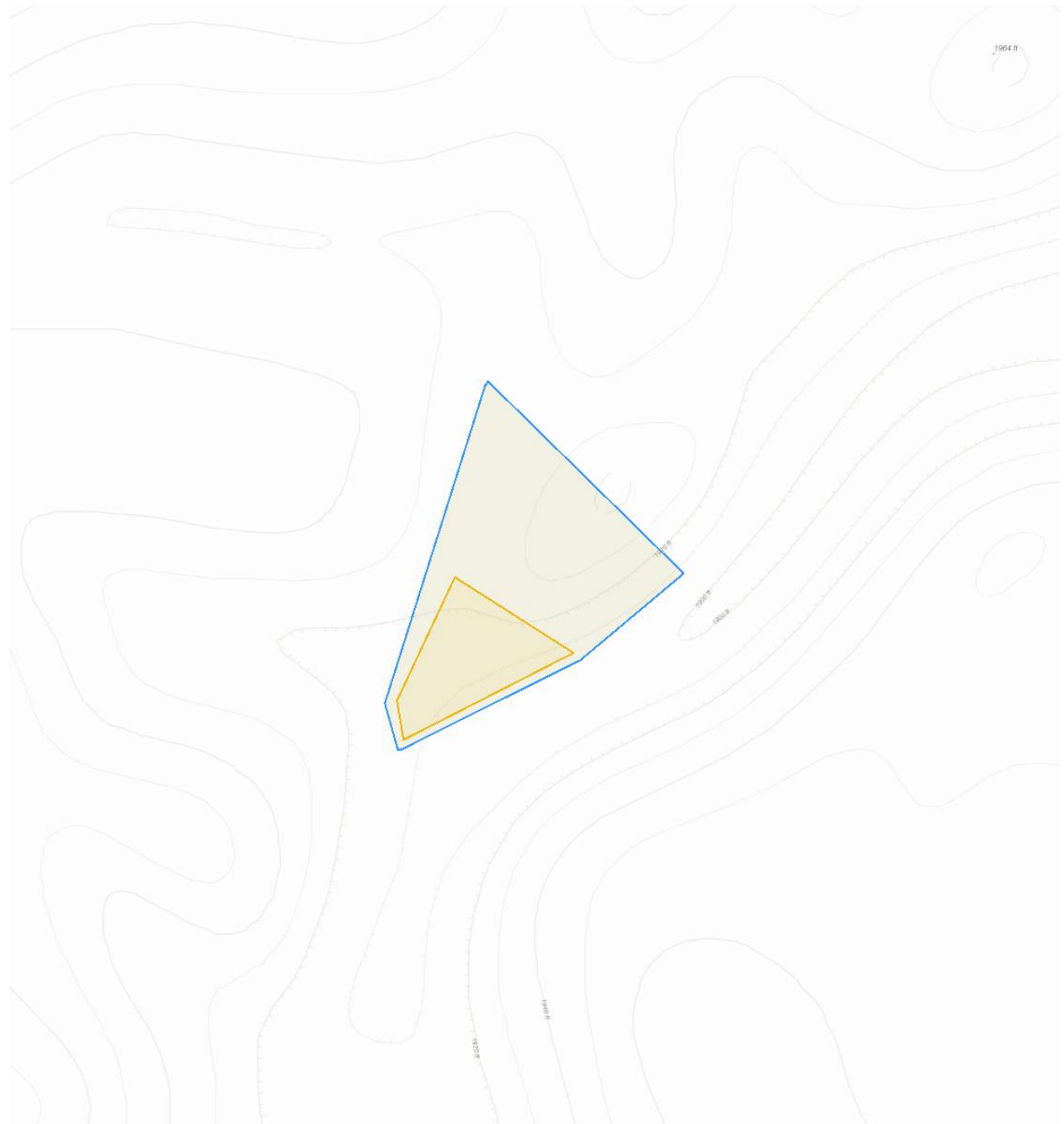
**CONSERVATION MEASURES**

*No conservation measures for this stressor*

**STRUCTURES AND ACTIVITIES**

- [Landscaping/restoration](#)

**1.4 Action Area**



## **1.5 Conservation Measures**

*Describe any proposed measures being implemented as part of the project that are designed to reduce the impacts to the environment and their resulting effects to listed species. To avoid extra verbiage, don't list measures that have no relevance to the species being analyzed.*

*No conservation measures have been selected for this project.*

## **1.6 Prior Consultation History**

None.

## **1.7 Other Agency Partners And Interested Parties**

No other agencies are involved.

## **1.8 Other Reports And Helpful Information**

None.

## **2 Species Effects Analysis**

*This section describes, species by species, the effects of the proposed action on listed, proposed, and candidate species, and the habitat on which they depend. In this document, effects are broken down as direct interactions (something happening directly to the species) or indirect interactions (something happening to the environment on which a species depends that could then result in effects to the species).*

*These interactions encompass effects that occur both during project construction and those which could be ongoing after the project is finished. All effects, however, should be considered, including effects from direct and indirect interactions and cumulative effects.*

### **2.1 Dakota Skipper**

*This species has been excluded from analysis in this environmental review document.*

#### **Justification for exclusion**

The work will have no effect on the Dakota Skipper habitat.

### **2.2 Northern Long-Eared Bat**

*This species has been excluded from analysis in this environmental review document.*

#### **Justification for exclusion**

The project work will have no effect on the Northern Long-eared Bat.

### **2.3 Piping Plover**

*This species has been excluded from analysis in this environmental review document.*

#### **Justification for exclusion**

The project will have no effect on the Piping Plover. The area does not provide ideal Piping Plover habitat.

## **2.4 Red Knot**

*This species has been excluded from analysis in this environmental review document.*

### **Justification for exclusion**

The project will have no impact on the Red Knot. The area is not ideal Red Knot habitat.

## **2.5 Whooping Crane**

*This species has been excluded from analysis in this environmental review document.*

### **Justification for exclusion**

The project will not impact Whooping Crane habitat. The area is not ideal Whooping Crane habitat.

### **3 Critical Habitat Effects Analysis**

*No critical habitats intersect with the project action area.*

# 4 Summary Discussion, Conclusion, And Effect Determinations

## 4.1 Effect Determination Summary

SPECIES (COMMON NAME)	SCIENTIFIC NAME	LISTING STATUS	PRESENT IN ACTION AREA	EFFECT DETERMINATION
<a href="#">Dakota Skipper</a>	Hesperia dactotae	Threatened	No	NE
<a href="#">Northern Long-eared Bat</a>	Myotis septentrionalis	Threatened	No	NE
<a href="#">Piping Plover</a>	Charadrius melodus	Threatened	No	NE
<a href="#">Red Knot</a>	Calidris canutus rufa	Threatened	No	NE
<a href="#">Whooping Crane</a>	Grus americana	Endangered	No	NE

## 4.2 Summary Discussion

2021 Emergency De Pue Coal Refuse Fire: A coal refuse fire is located on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The project plan includes removal and stock piling of topsoil, excavation of a receiving trench and transfer of approximately 500 linear feet of burning coal refuse into the trench. The burning coal fines will be mixed with excavated spoil and packed to extinguish the fire. The excavated area will be regraded to approximate original contour and topsoil respread. Approximately 100 feet of road/incline undermined by the burning coal refuse will be rebuilt. Work is expected to be completed by mid-July 2021 at an estimated cost of \$7,000.

## 4.3 Conclusion

2021 Emergency De Pue Coal Refuse Fire: A coal refuse fire is located on the section line between the NW ¼ of Section 1, T151N, R81W, and the SW ¼ of Section 36, T152N, R81W, southwest of Velva, Ward County. The project plan includes removal and stock piling of topsoil, excavation of a receiving trench and transfer of approximately 500 linear feet of burning coal refuse into the trench. The burning coal fines will be mixed with excavated spoil and packed to extinguish the fire. The excavated area will be regraded to approximate original contour and topsoil respread. Approximately 100 feet of road/incline undermined by the burning coal refuse will be rebuilt. Work is expected to be completed by mid-July 2021 at an estimated cost of \$7,000.

## Hamre, John G.

---

**From:** Sieving, John <jsieving@osmre.gov>  
**Sent:** Wednesday, June 30, 2021 2:54 PM  
**To:** Breiner, Joan M.  
**Cc:** Moos, Dean K.; Hamre, John G.  
**Subject:** Re: [EXTERNAL] USF&W Concurrence Biological Assessments.

**\*\*\*\*\* CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe. **\*\*\*\*\***

Hi Joan,

We just need NEPA to be done for every site - however you want to do that.

An EA for all ND historic mining districts will work. So will an EA for each site. So will CEs, as long as the sites meet the criteria. Whatever is easiest.

As for Sec 7 compliance, all we need is a "no effect" determination, which you can make. If a may effect determination goes so far as to require a BA, then we can go that route, but I image most sites shouldn't need that? But Sec 7 compliance needs to happen for each site.

John

---

**From:** Breiner, Joan M. <jobreiner@nd.gov>  
**Sent:** Wednesday, June 30, 2021 1:12 PM  
**To:** Sieving, John <jsieving@osmre.gov>  
**Cc:** Dean Moos <dmoos@nd.gov>; Hamre, John G. <jghamre@nd.gov>  
**Subject:** [EXTERNAL] USF&W Concurrence Biological Assessments.

**This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.**

John,

You will be receiving a request for authorization to proceed for the following projects:

2021 Sinkhole Filling  
2021 Emergency De Pue Coal Refuse Fire  
Remote Backfilling at the 2021 Belfield Exploratory Drilling Site.

Attached are the USF&W Biological Assessments for the fire and the remote backfilling.

I started one for sinkhole filling that encompasses most of the western part of North Dakota. That looks like it presents other issues, but we now have 9 sites. Do you want an assessment for each site? It takes about ½ hour for each because it's mostly redundant information between the sites.

Thanks.

Happy 4<sup>th</sup> of July!

**Joan Breiner, Ph.D.**

Assistant Director

Abandoned Mine Lands Division  
North Dakota Public Service Commission  
600 E Boulevard Ave Dept 408  
Bismarck, ND 58505

[jobreiner@nd.gov](mailto:jobreiner@nd.gov) 701.328.2412

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July 2, 2021

Dr. Joan Breiner  
Abandoned Mine Lands Division  
600 E Boulevard, Dept 408  
Bismarck, ND 58505-0480



**ND SHPO Ref.: 21-0447 2021 AML reclamation activities in portions of [T140N R99W Section 28, T151N R81W Section 1, T152N R81W Section 36] in Stark and Ward Counties, North Dakota**

Dear Dr. Breiner,

We reviewed ND SHPO Ref.: 21-0447 2021 AML reclamation activities in portions of [T140N R99W Section 28, T151N R81W Section 1, T152N R81W Section 36] in Stark and Ward Counties, North Dakota as well as yet unknown dangerous sinkholes and we concur with a determination of "No Historic Properties Affected" for this project provided it takes place in the location and in the manner described in the documentation.

Thank you for the opportunity to review this project. Please include the ND SHPO Reference number listed above in further correspondence for this specific project. If you have any questions, please contact Lorna Meidinger, Historic Preservation Specialist at (701) 328-2089 or [lbmeidinger@nd.gov](mailto:lbmeidinger@nd.gov)

Sincerely,

for William D. Peterson PhD  
State Historic Preservation Officer  
(North Dakota)

21-0447

July 12, 2021

Joan Breiner  
ND PSC  
600 East Blvd. Dept 408  
Bismarck, ND 58505-0480

**Re Abandoned Mine Land (AML) Sites for 2021**

Dear Ms. Breiner,

The North Dakota Parks and Recreation Department (NDPRD) has reviewed the above-referenced Hiland Crude Epping Delivery Pipeline Project in Williams County, North Dakota. NDPRD's scope of authority and expertise covers properties that NDPRD owns, leases, or manages; properties protected under Section 6(f) of the Land and Water Conservation Fund (LWCF); and rare plants and ecological communities established through the Natural Heritage Program.

The project does not appear to affect properties that NDPRD owns, leases, or manages.

The project does not appear to affect any properties protected under Section 6(f) of the LWCF.

The North Dakota Natural Heritage biological conservation database has reviewed the project to determine if any current or historical plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, we have no known rare species documented within or immediately adjacent to the project site. Because the Natural Heritage information is not based on a comprehensive inventory, there may be species of concern or otherwise significant ecological communities in the area that are not represented in the database. The absence of data may indicate that the project area has not been surveyed rather than confirm that it lacks natural heritage resources.

We appreciate your commitment to rare plant, animal, and ecological community conservation, management, and inter-agency cooperation to date. For additional information, please contact the Natural Resources Coordinator, Kathy Duttonhefner at, 701-328-5370, 701-220-3377 (cell), or [kgduttonhefner@nd.gov](mailto:kgduttonhefner@nd.gov).

Thank you for the opportunity to comment on the proposed project.



Kathy Duttonhefner  
Coordinator/Biologist II, Natural Resources



July 26, 2021

Joan Breiner, Ph.D.  
Assistant Director  
Abandoned Mines Division  
Public Service Commission  
600 East Boulevard  
Department 408  
Bismarck, ND 58505—0480

Ms. Breiner,

The North Dakota Department of Environmental Quality (NDDEQ) has reviewed the proposed mine reclamation projects summarized in your June 28, 2021, letter. The reclamation activities were mapped in relation to wellhead protection areas, glacial drift aquifers, and existing wells (maps attached).

Reclamation activities at all sites should be conducted in a manner that minimizes potential impacts to water supply located in the vicinity of the sites. In particular, proposed site PA – ND014 directly overlies the Knife River aquifer, which is a sensitive groundwater area. Care should be taken to avoid spills of any materials that may have an adverse effect on groundwater quality. All spills must be immediately reported to this Department and appropriate remedial actions performed.

Please feel free to give me a call at 328-5213 if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Carl Anderson".

Carl Anderson  
Groundwater Protection Program Manager  
NDDEQ – Division of Water Quality

Attachments: Reclamation Maps

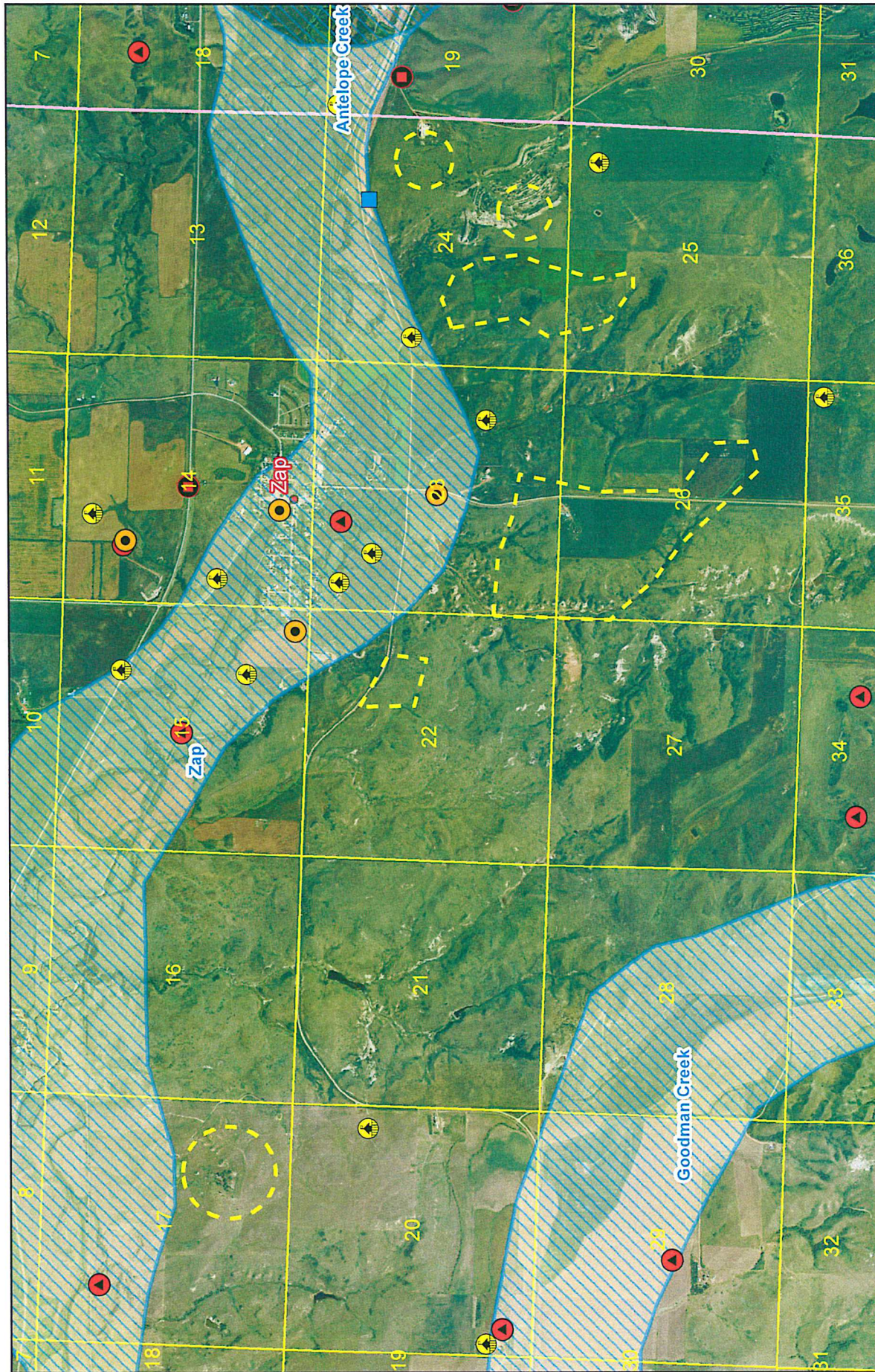


**2005-2020 Sinkholes**  
 Southwest of Velva, ND  
 Ward County  
 ND PSC AML Division  
 T152N R82W; T152N R81W



7/12/2021  
 C. Gleich

	Area of Interest		Industrial Well
	Township & Rng		Observation Well
	Section		Domestic Well



# 2005-2016 Sinkholes

Zap, ND  
 Mercer County  
 ND PSC AML Division

	Area of Interest		Domestic Well
	Aquifer		Industrial Well
	Sensitive GW Area		Stock Well
	Township & Rng		Municipal Well
	Section		Commercial





# De Peu Mine Coal Refuse Fire

TRS: T152N R81W Sec. 36; T151N R81W Sec. 1  
 Ward County  
 ND PSC AML Division



	Area of Interest
	Twnshp & Rng
	Section





## 2005-2016 Sinkholes

Wilton/Baldwin, ND  
 Burleigh & McLean Counties  
 ND PSC AML Division



	Area of Interest		Domestic Well
	Aquifer		Municipal Well
	Sensitive GW Area		Observation Well
	Twnshp & Rng		Stock Well



## 2005-2016 Sinkholes

Southwest of Velva, ND  
 Ward County  
 ND PSC AML Division

	Area of Interest
	Section
	Domestic Well
	Observation Well






# 2005-2016 Sinkholes

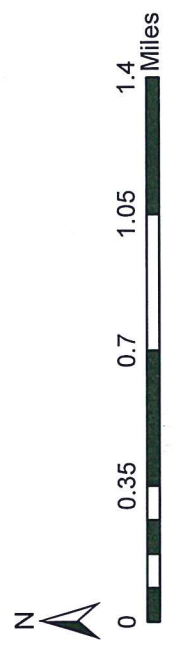
West of Washburn, ND  
 McLean County  
 ND PSC AML Division

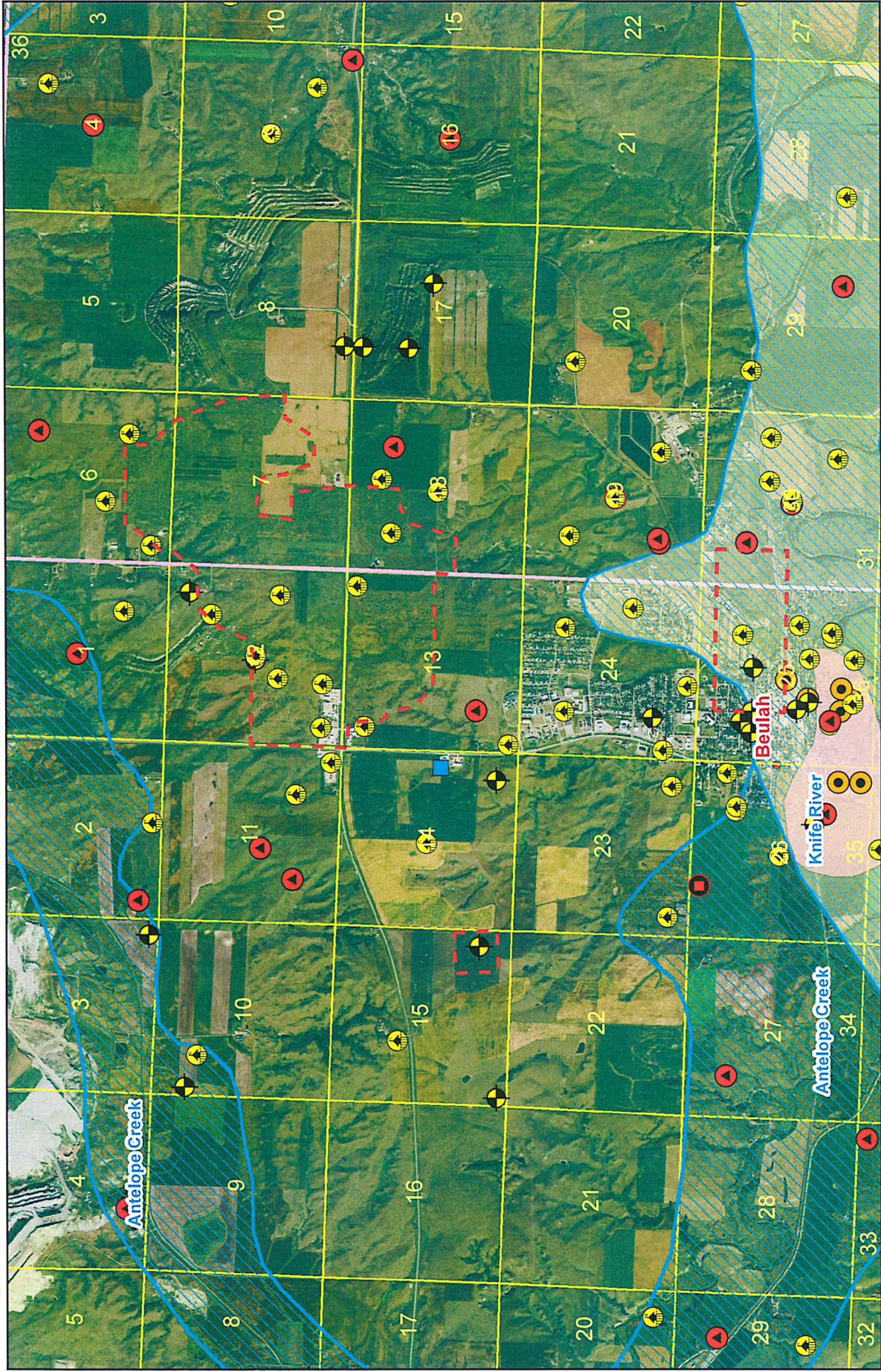




-  Area of Interest
-  Township & Rng
-  Section
-  Stock
-  Observation Well
-  Domestic Well

**2005-2016 Sinkholes**  
 South of Beach, ND  
 Golden Valley County  
 ND PSC AML Division  
 T138N R106W Sec. 14





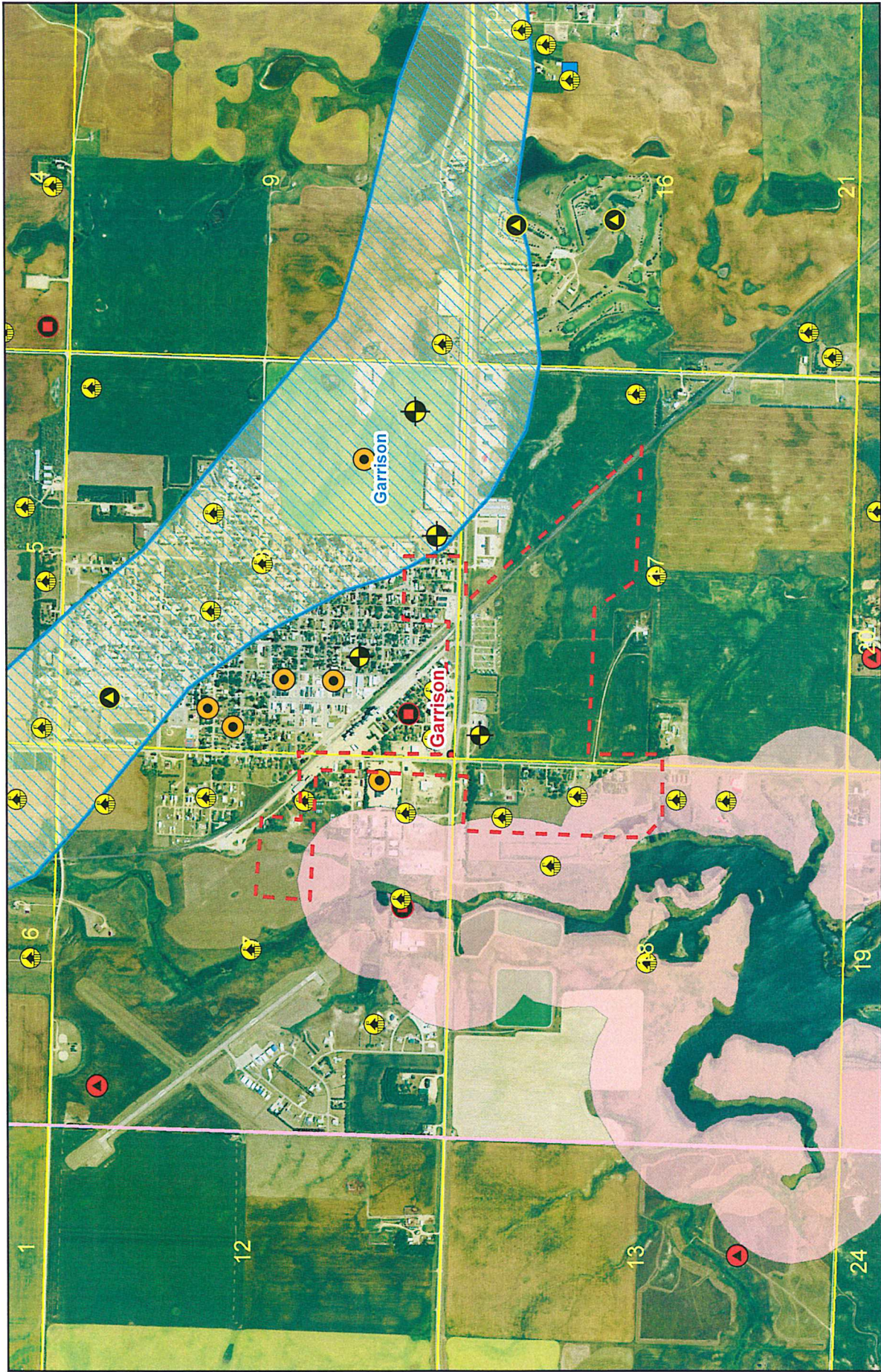
**2005-2016 Sinkholes**  
 Beulah, ND  
 Mercer County  
 ND PSC AML Division  
 T144N R87W, T144N R88W

7/12/2021  
 P. Olson

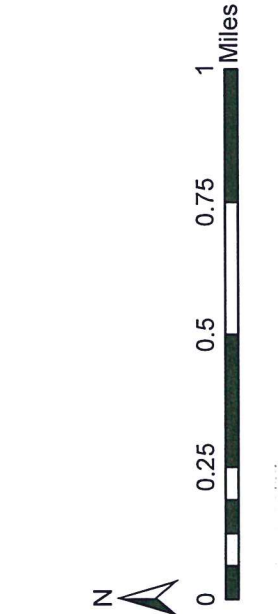
0 0.5 1 1.5 2 Miles

N

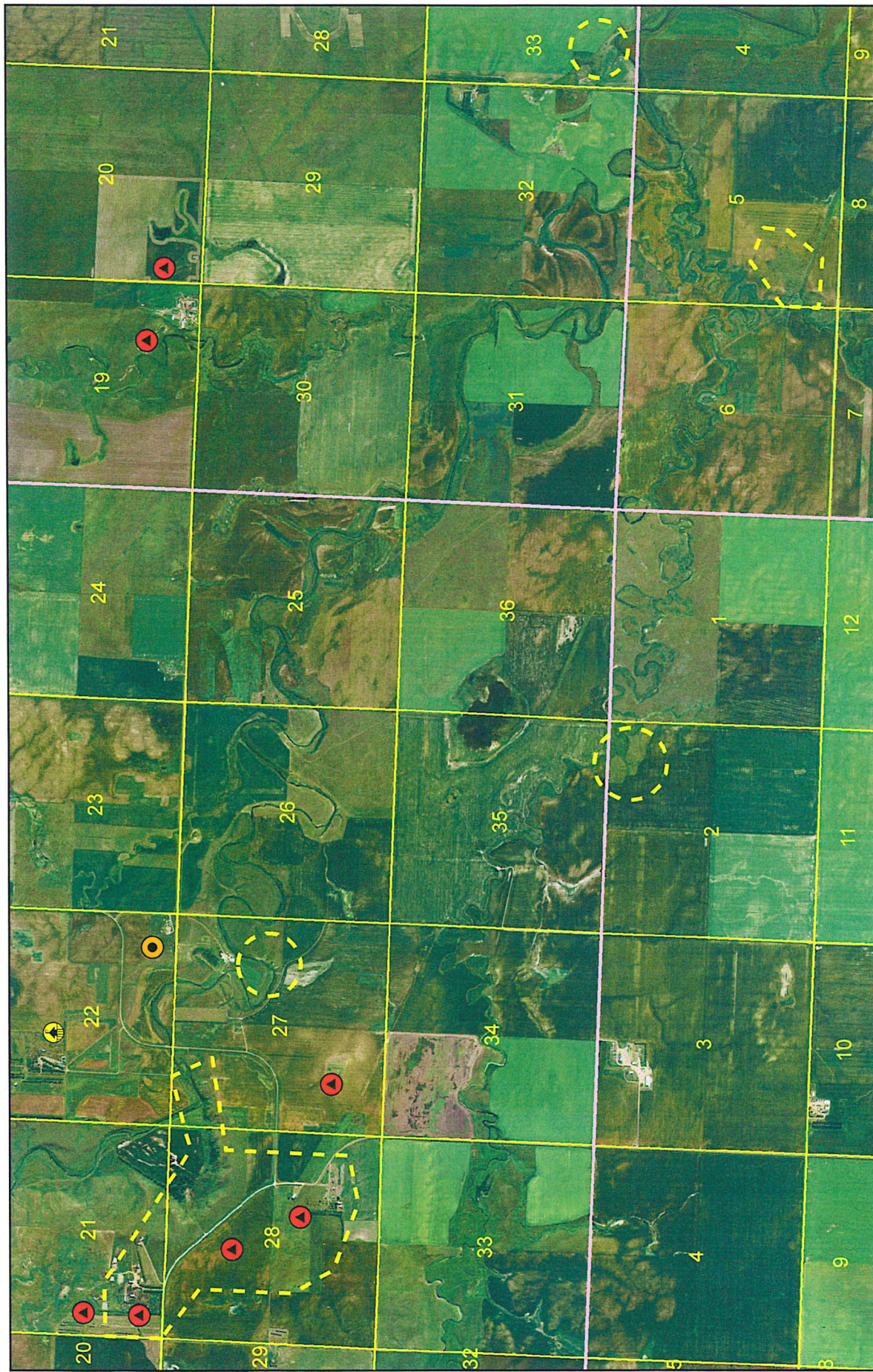
	Area of Interest		Stock
	Twnshp & Rng		Observation Well
	Section		Domestic Well
	Aquifer		Commercial Well
	Sensitive Groundwater Area		Municipal Well
			<b>ND WHPA COMMUNITY</b>
			<input type="checkbox"/> Active



**2005-2016 Sinkholes**  
 Garrison, ND  
 McLean County  
 ND PSC AML Division  
 T148N R84W



	Area of Interest		Stock
	Township & Rng		Observation Well
	Section		Domestic Well
	Aquifer		Industrial Well
	Sensitive Groundwater Area		Municipal Well
			<b>ND WHPA COMMUNITY</b>
			Active

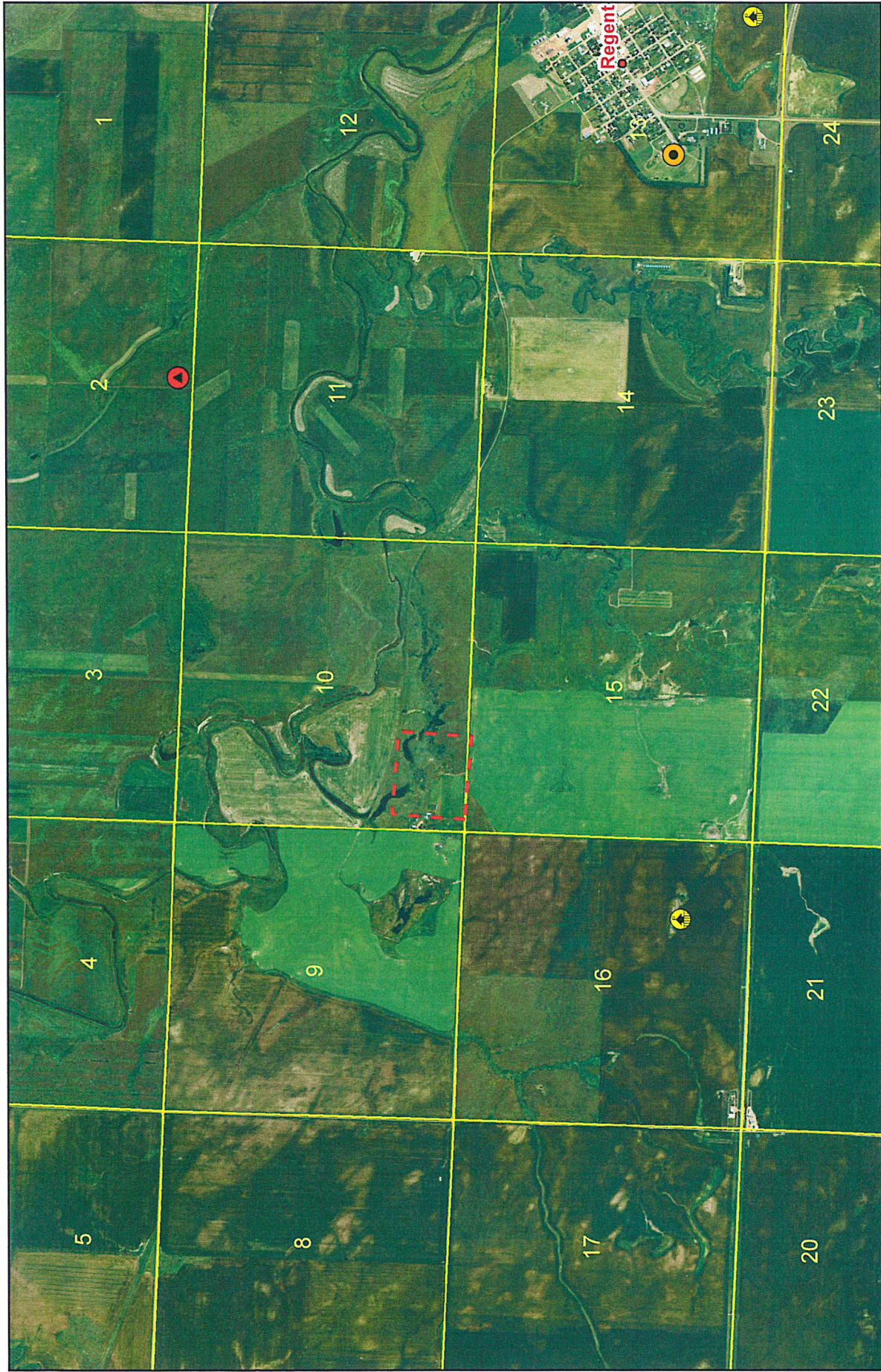


# Underground Abandoned Mine Locations

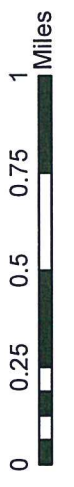
Havelock, ND  
 Hettinger County  
 ND PSC AML Division

	Area of Interest		Industrial Well
	Township & Rng		Stock Well
	Section		Municipal Well
	Domestic Well		

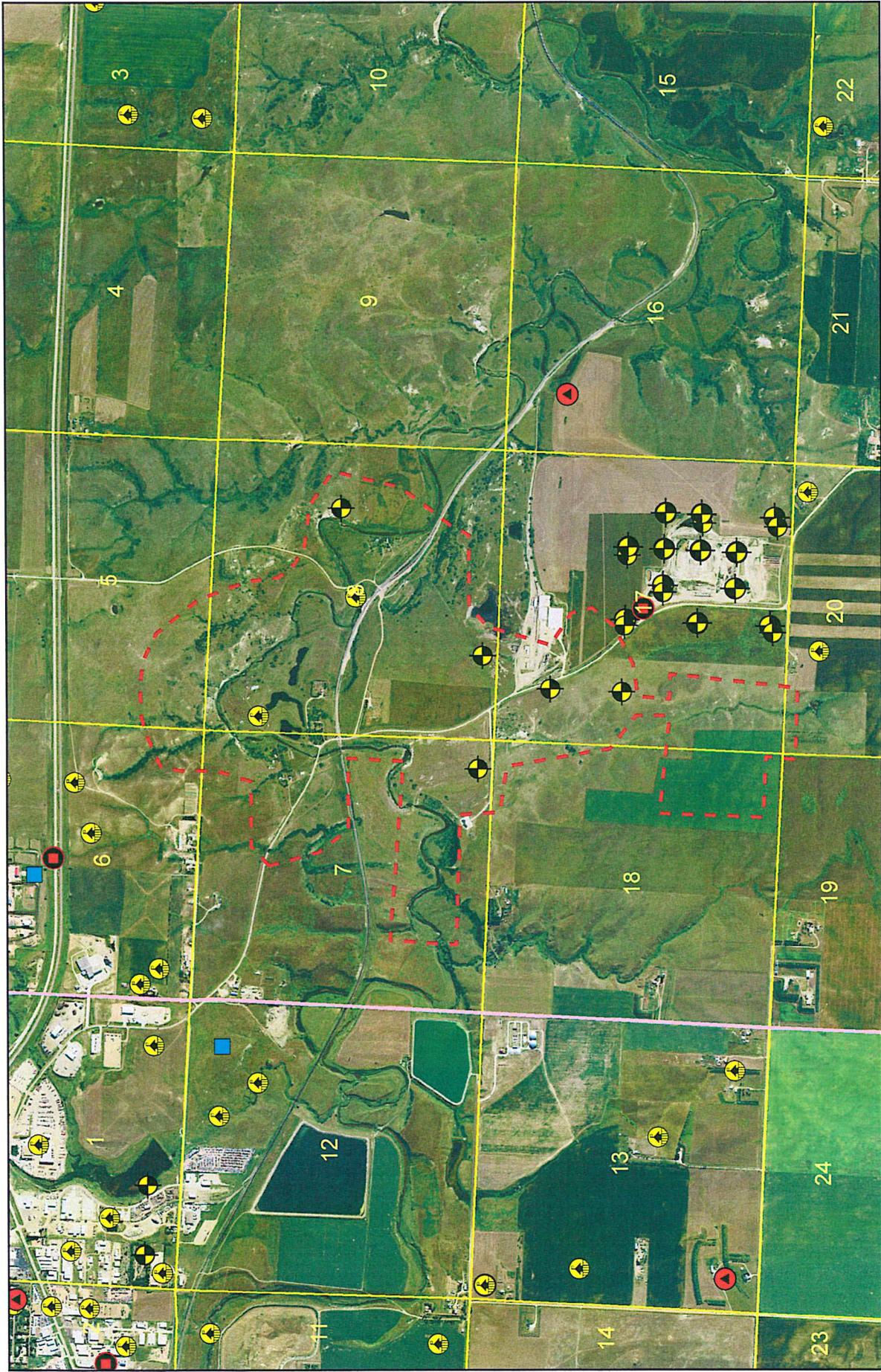




- Area of Interest
- Twnshp & Rng
- Section
- ⦿ Domestic Well
- ▲ Stock
- Municipal Well

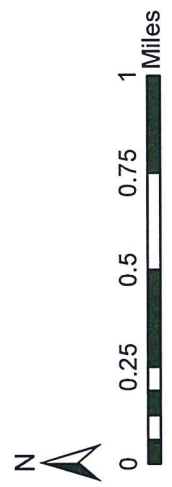


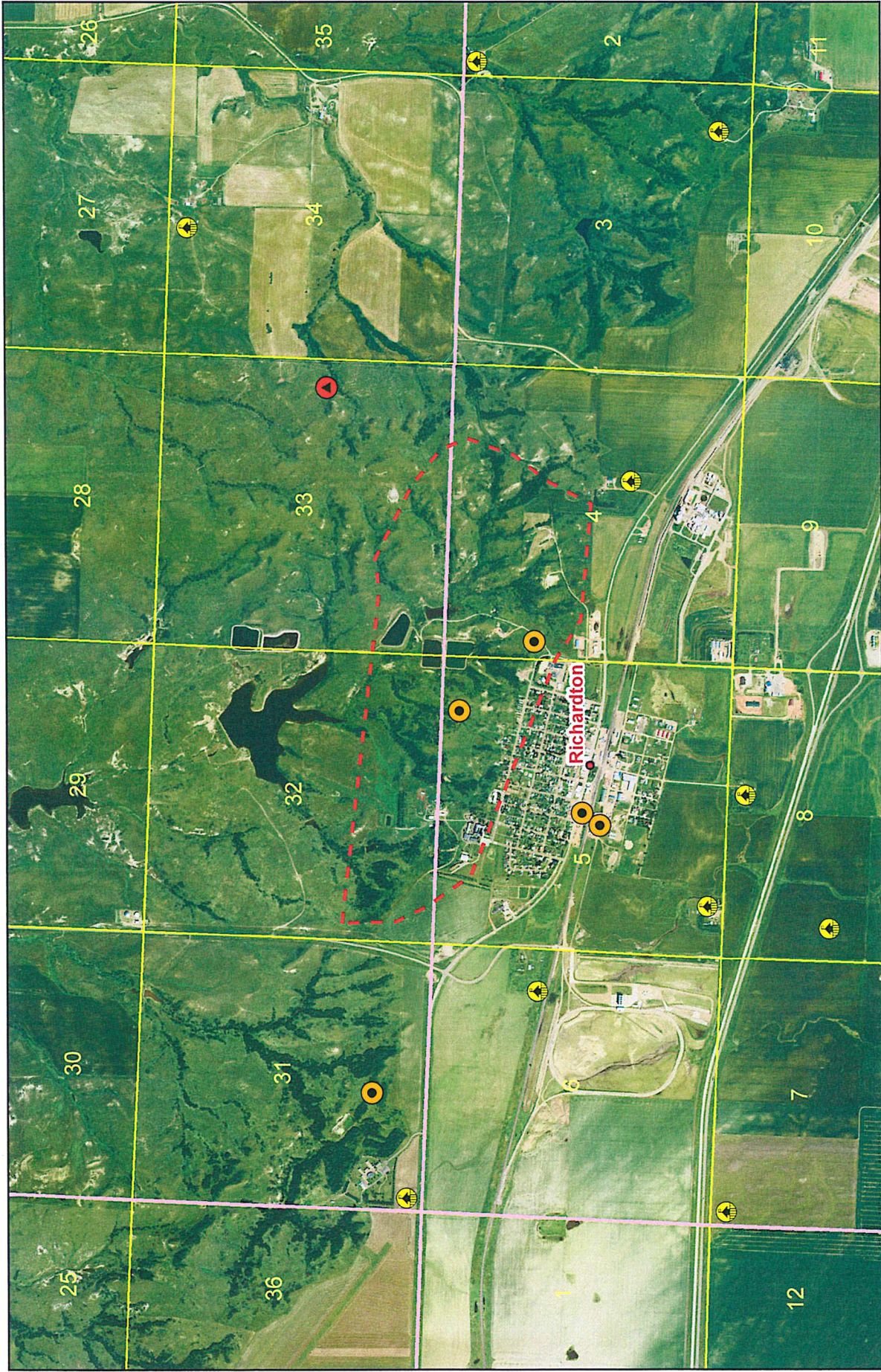
**2005-2016 Sinkholes**  
 West of Regent, ND  
 Hettinger County  
 ND PSC AML Division  
 T134N R95W



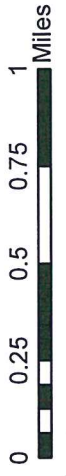
- - - Area of Interest
- Township & Rng
- Section
- ▲ Stock
- Observation Well
- Domestic Well
- Industrial Well
- Commercial Well

**2005-2016 Sinkholes**  
 East of Dickinson, ND  
 Stark County  
 ND PSC AML Division  
 T139N R95W





- - - Area of Interest
- Township & Rng
- Section
- Domestic Well
- Stock
- Municipal Well



**2005-2016 Sinkholes**  
 North of Richardton, ND  
 Stark County  
 ND PSC AML Division  
 T139N R92W, T140N R92W

7/14/2021  
 P. Olson



	Area of Interest
	Township & Rng
	Section
	Stock
	Observation Well
	Domestic Well



**2005-2016 Sinkholes**  
 NW of New Leipzig, ND  
 Hettinger and Grant Counties  
 ND PSC AML Division  
 T134N R91W, T133N R90W

7/14/2021  
 P. Olson



- Area of Interest
- Township & Rng
- Section
- Aquifer
- Inactive
- Domestic Well
- Stock
- Observation Well
- Industrial Well
- Municipal Well
- Commercial Well



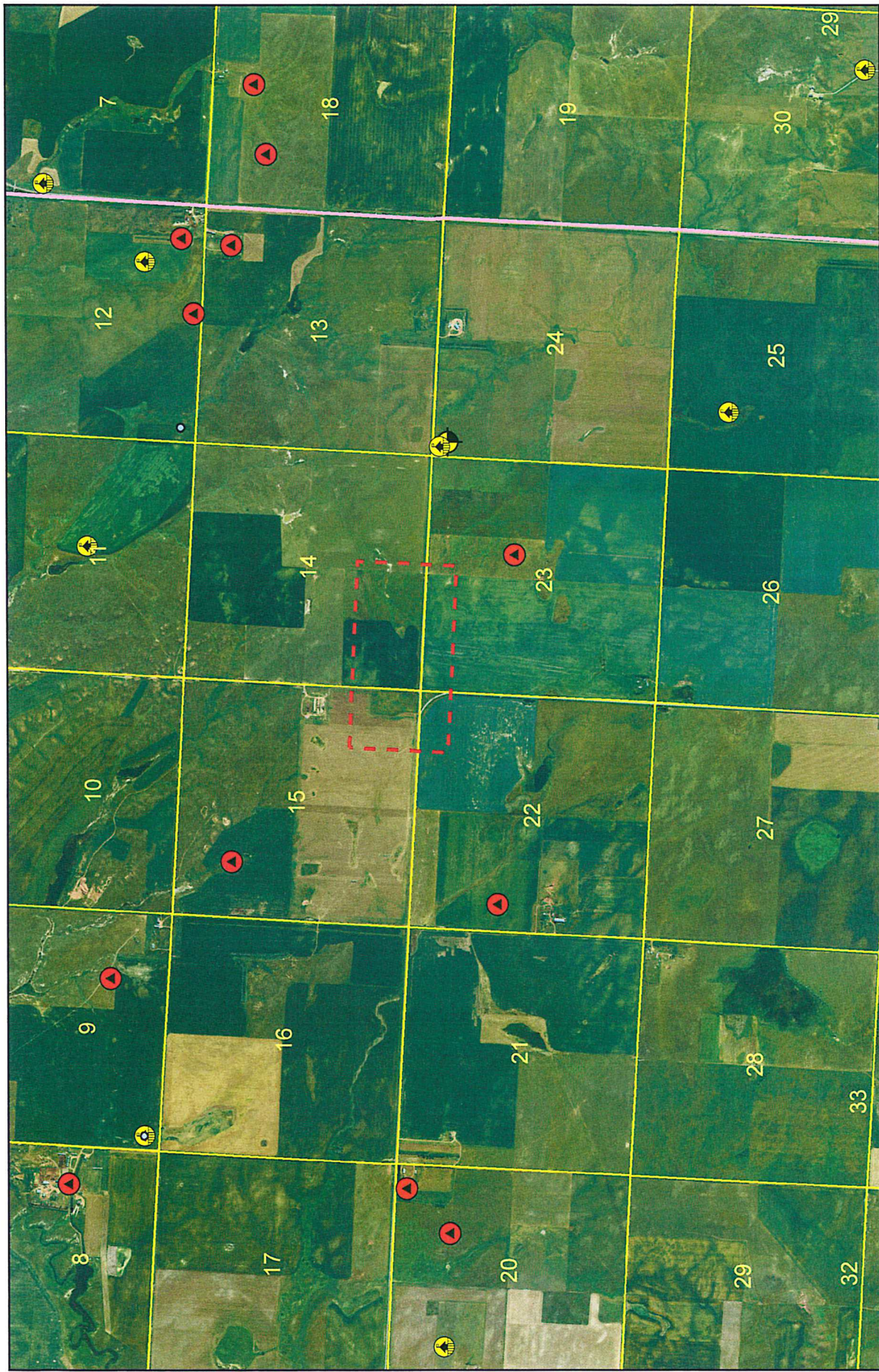
**2005-2016 Sinkholes**  
 South & East of Noonan, ND  
 Divide and Burke Counties  
 ND PSC AML Division  
 T162N R94W, T162N R95W  
 7/14/2021  
 P. Olson



**2005-2016 Sinkholes**  
 South of New Leipzig, ND  
 Grant County  
 ND PSC AML Division  
 T133N R90W



	Area of Interest		Stock
	Twnshp & Rng		Observation Well
	Section		Domestic Well
			Municipal Well

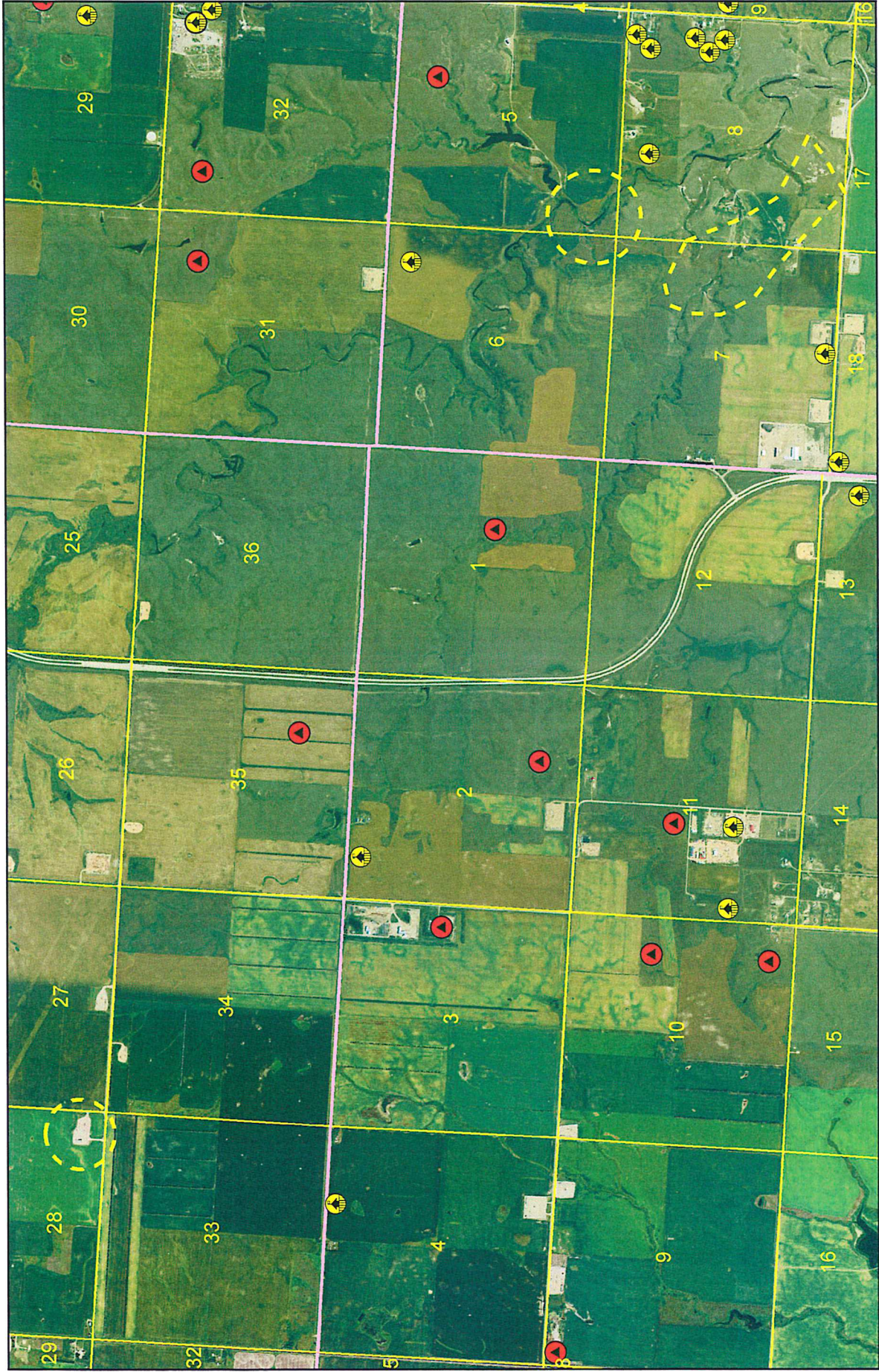


	Area of Interest
	Township & Rng
	Section
	Stock
	Observation Well
	Domestic Well



**2005-2016 Sinkholes**  
 North of Bowman, ND  
 Bowman County  
 ND PSC AML Division  
 T132N R102W

7/13/2021  
 P. Olson



**2005-2016 Sinkholes**  
 West of Williston, ND  
 Williams County  
 ND PSC AML Division

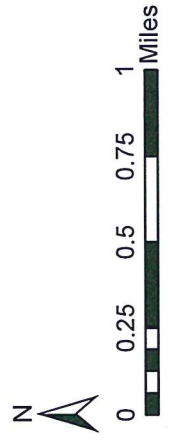


	Area of Interest
	Township & Rng
	Section
	Stock Well
	Domestic Well



**2005-2016 Sinkholes**  
 New Salem, ND  
 Morton County  
 ND PSC AML Division  
 T139N R85W

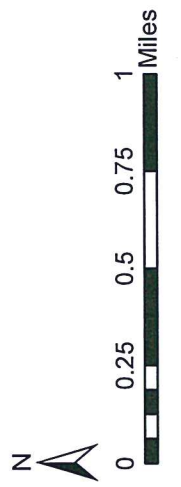
- Area of Interest
- Twnshp & Rng
- Section
- Aquifer
- ▲ Stock
- Observation Well
- Domestic Well
- Municipal Well
- Commercial Well





	Area of Interest		Domestic Well
	Township & Rng		Stock
	Section		Observation Well
	Aquifer		Irrigation Well
	Sensitive Groundwater Area		Municipal Well

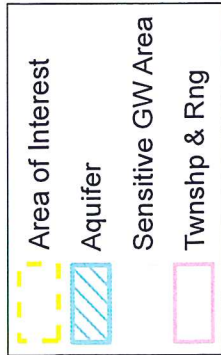
**2005-2016 Sinkholes**  
 North of Parshall, ND  
 Mountrail County  
 ND PSC AML Division  
 T152N R89W, T152N R90W

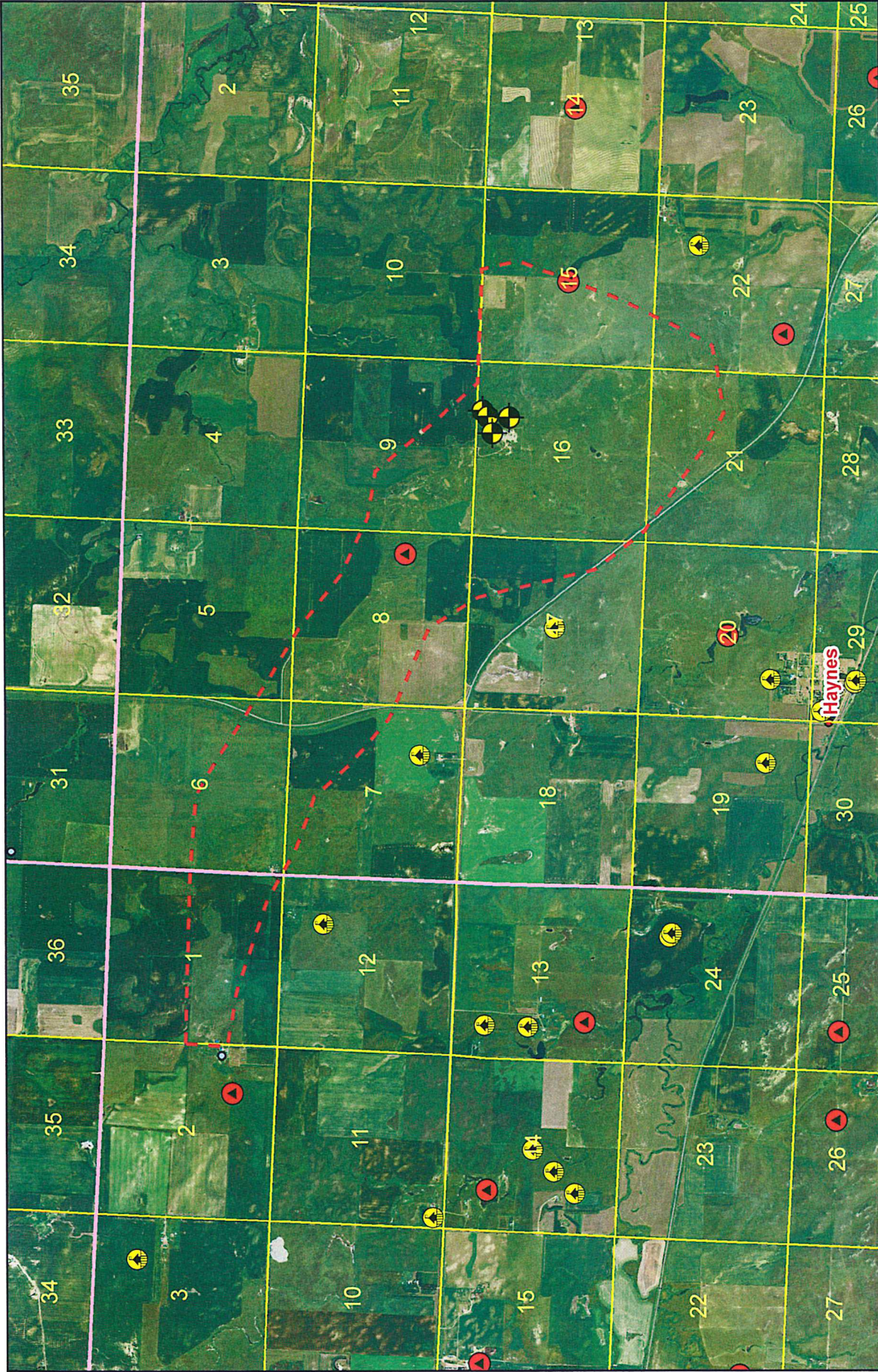




# 2005-2016 Sinkholes

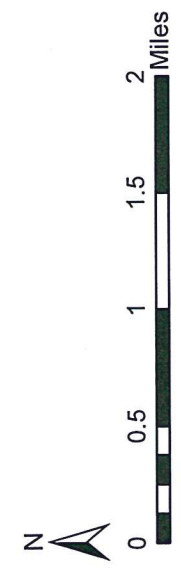
East of Williston, ND  
Williams County  
ND PSC AML Division



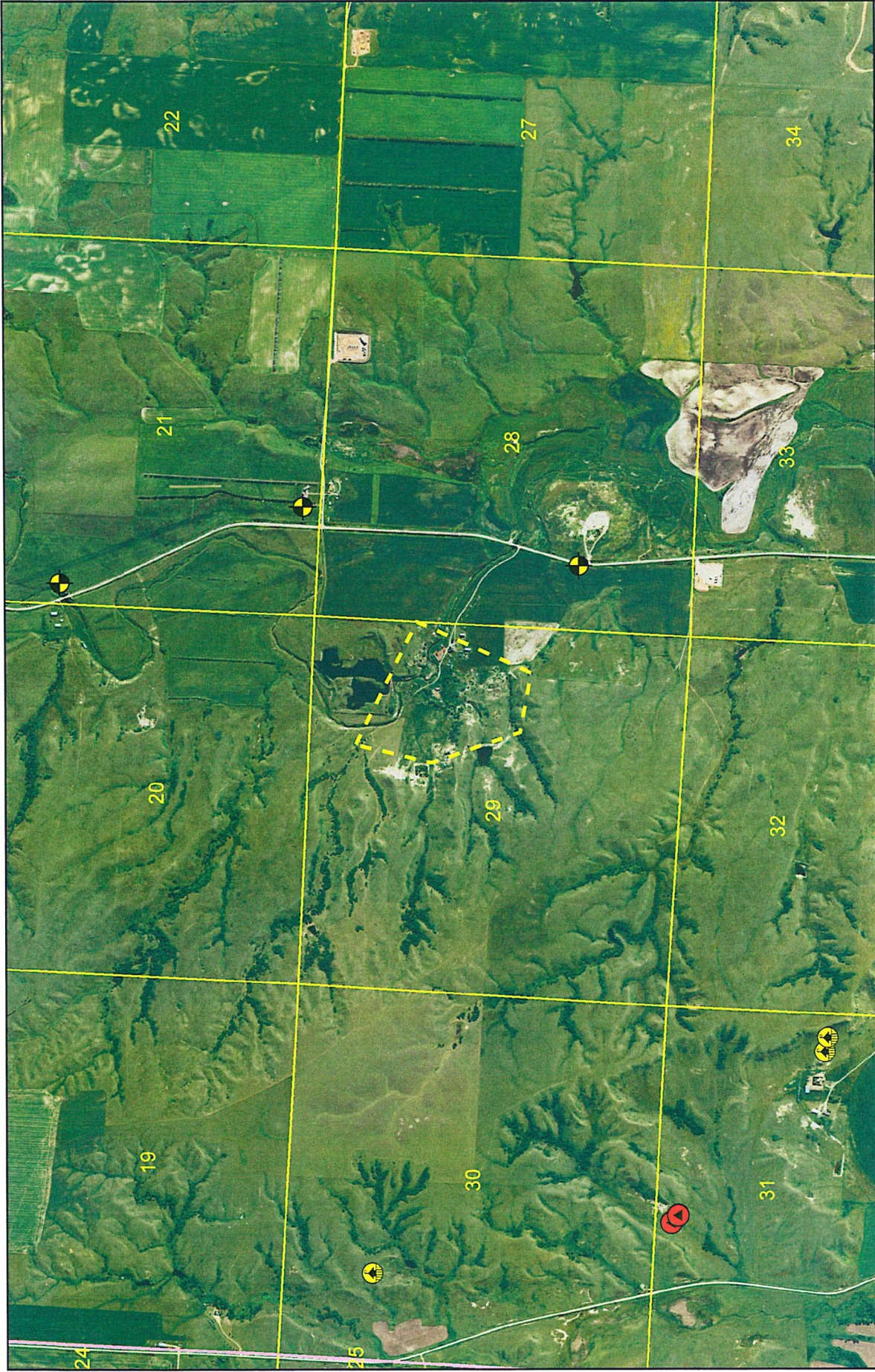


**2005-2016 Sinkholes**  
 North of Haynes, ND  
 Adams County  
 ND PSC AML Division  
 T129N R95W, T129N R94W

	Area of Interest
	Township & Rng
	Section
	Stock
	Observation Well
	Domestic Well



7/14/2021  
 P. Olson

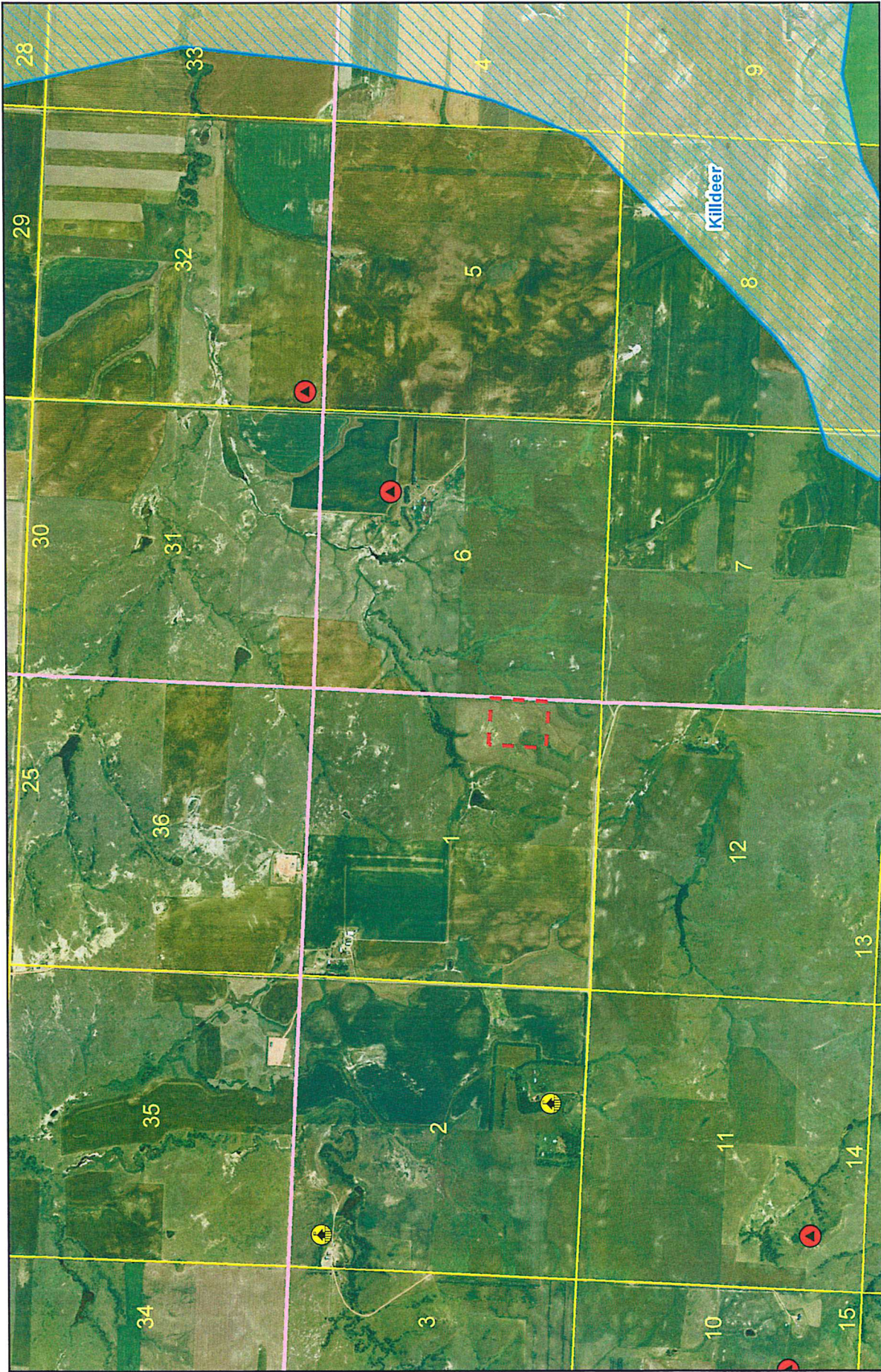


# Underground Abandoned Mine Locations

SW of Tioga, ND  
 Williams County  
 ND PSC AML Division  
 T155N R96W Sec. 29

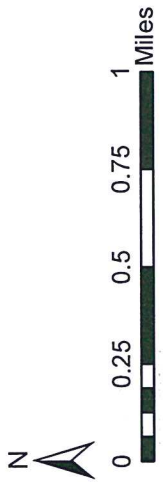


	Area of Interest		Domestic Well
	Township & Rng		Observation Well
	Section		Stock Well



- Area of Interest
- Township & Rng
- Section
- Aquifer
- Sensitive Groundwater Area
- Stock
- Observation Well
- Domestic Well

**2005-2016 Sinkholes**  
 NE of Dickinson, ND  
 Dunn County  
 ND PSC AML Division  
 T141N R95W





	Area of Interest
	Township & Rng
	Section
	Stock
	Observation Well
	Domestic Well



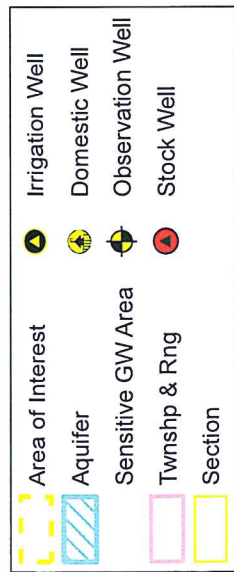
**2005-2016 Sinkholes**  
 North & East of Hanks, ND  
 Williams County  
 ND PSC AML Division  
 T159N R102W, T159N R101W

7/14/2021  
 P. Olson



# Underground Abandoned Mine Locations

South of White Earth, ND  
 Mountrail County  
 ND PSC AML Division





# 2005-2016 Sinkholes

Scranton, ND  
Bowman County  
ND PSC AML Division

- Area of Interest
- Township & Rng
- Section
- Domestic Well
- Municipal Well
- Observation Well
- Stock Well









**2005-2016 Sinkholes**  
 South of Niobe, ND  
 Ward County  
 ND PSC AML Division  
 T160N R89W

7/14/2021  
 P. Olson

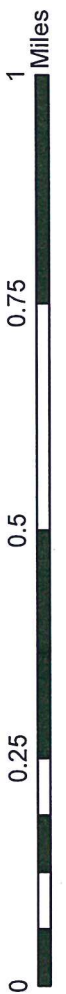





	Area of Interest
	Twnshp & Rng
	Section
	Domestic Well



# PSC Drillholes Belfield Site

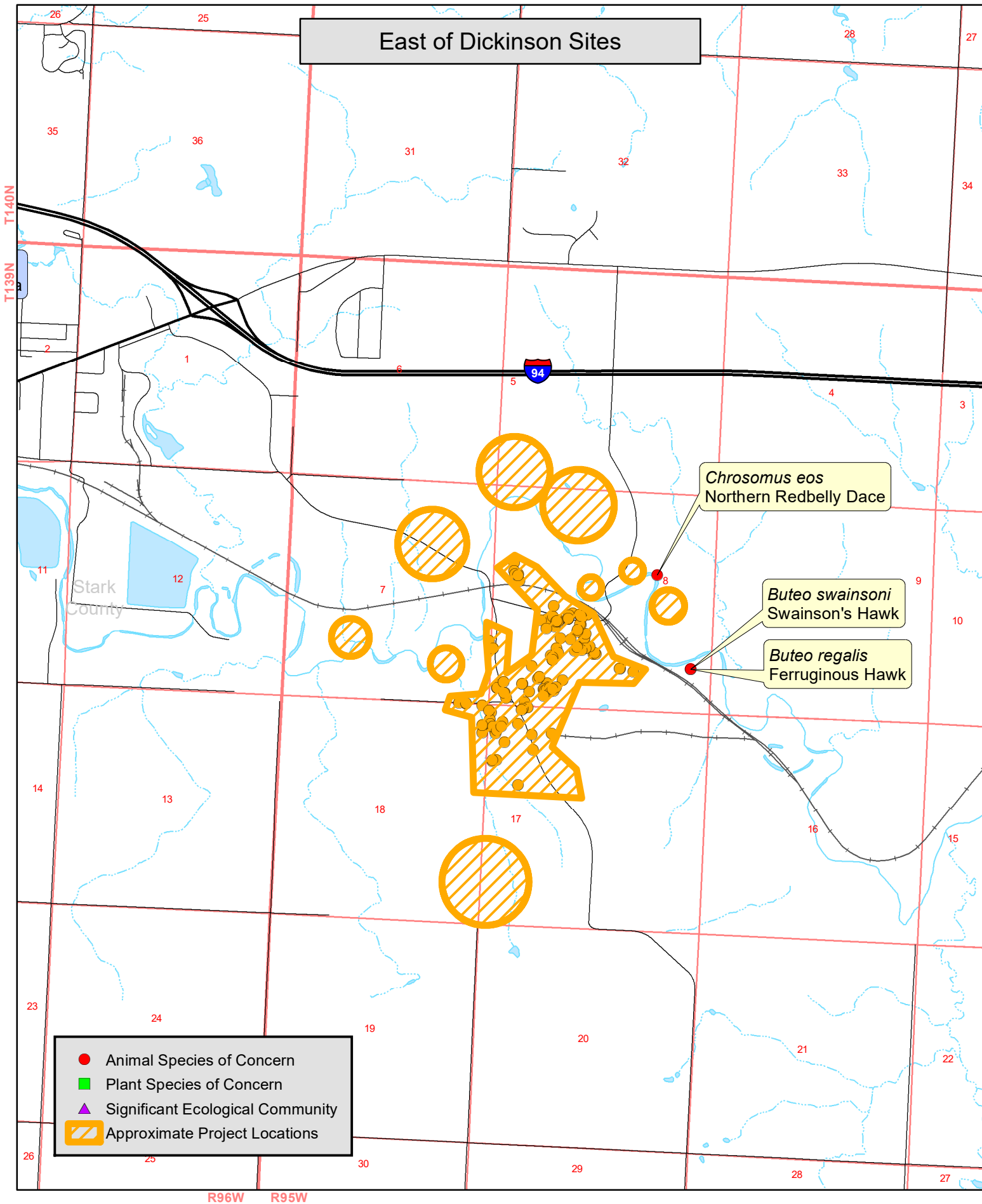
TRS: T140N R99W Sec. 28  
 Stark County  
 ND PSC AML Division



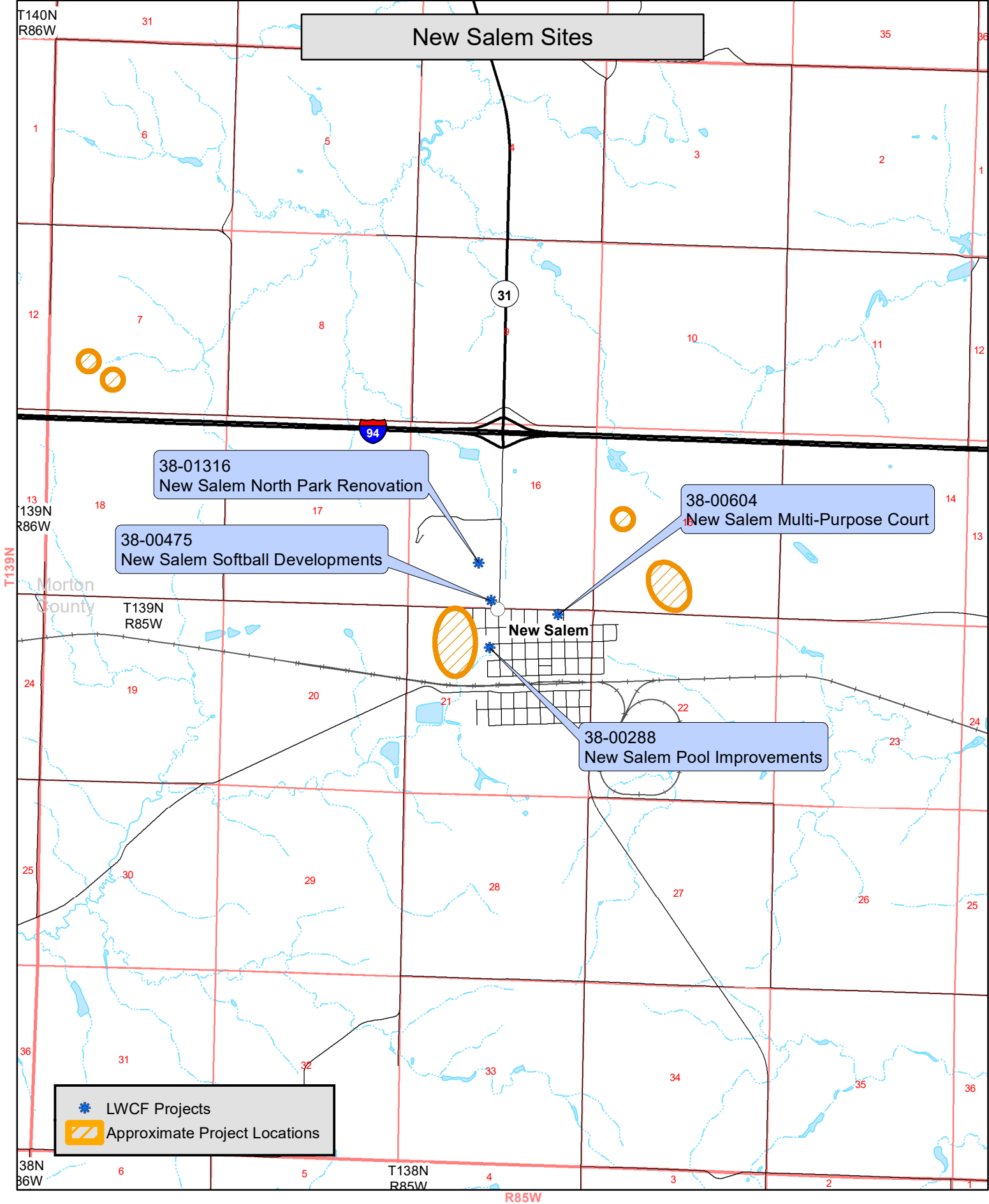
	Area of Interest
	Section
	Stock Well

# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory

## East of Dickinson Sites

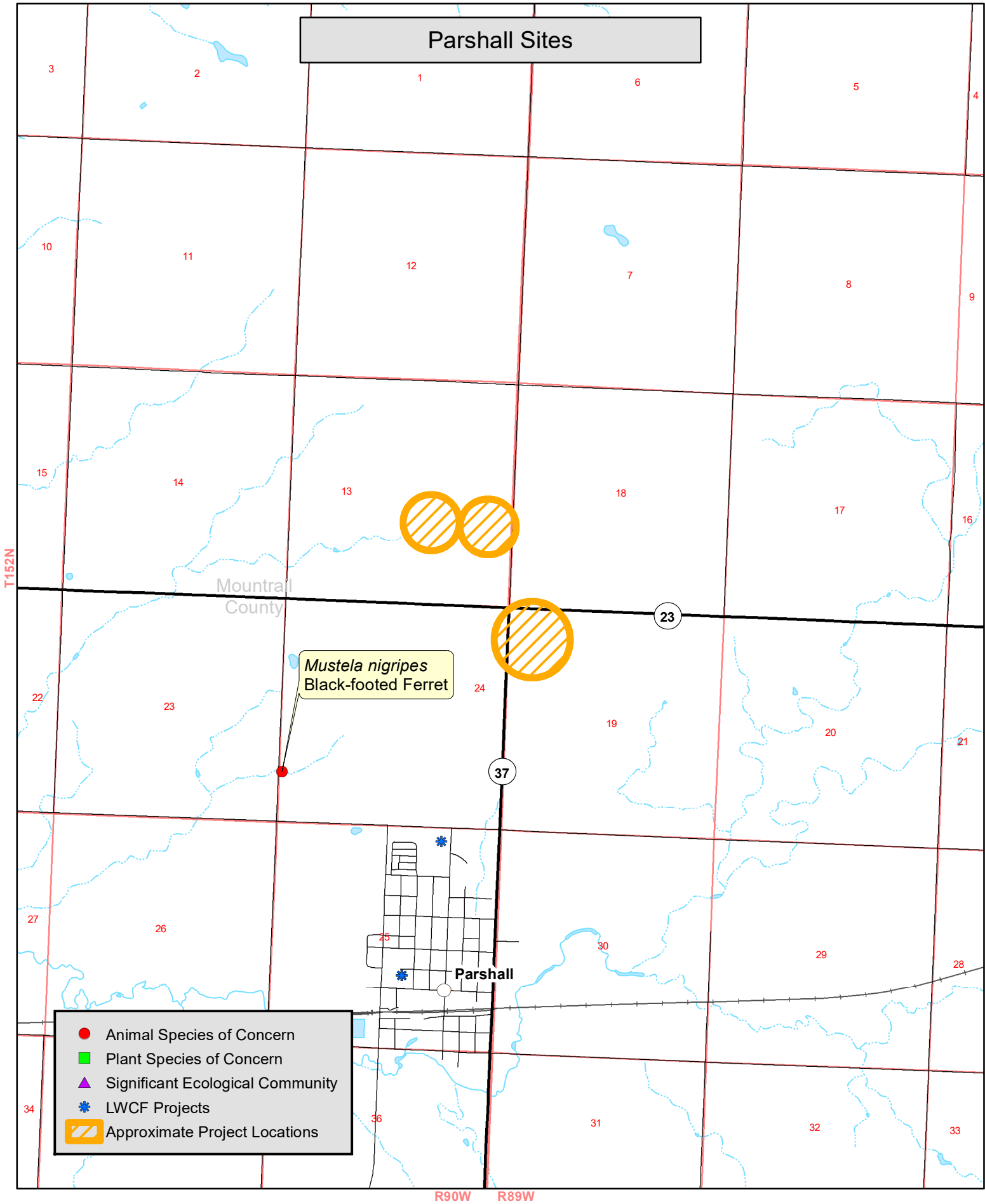


# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory



# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory

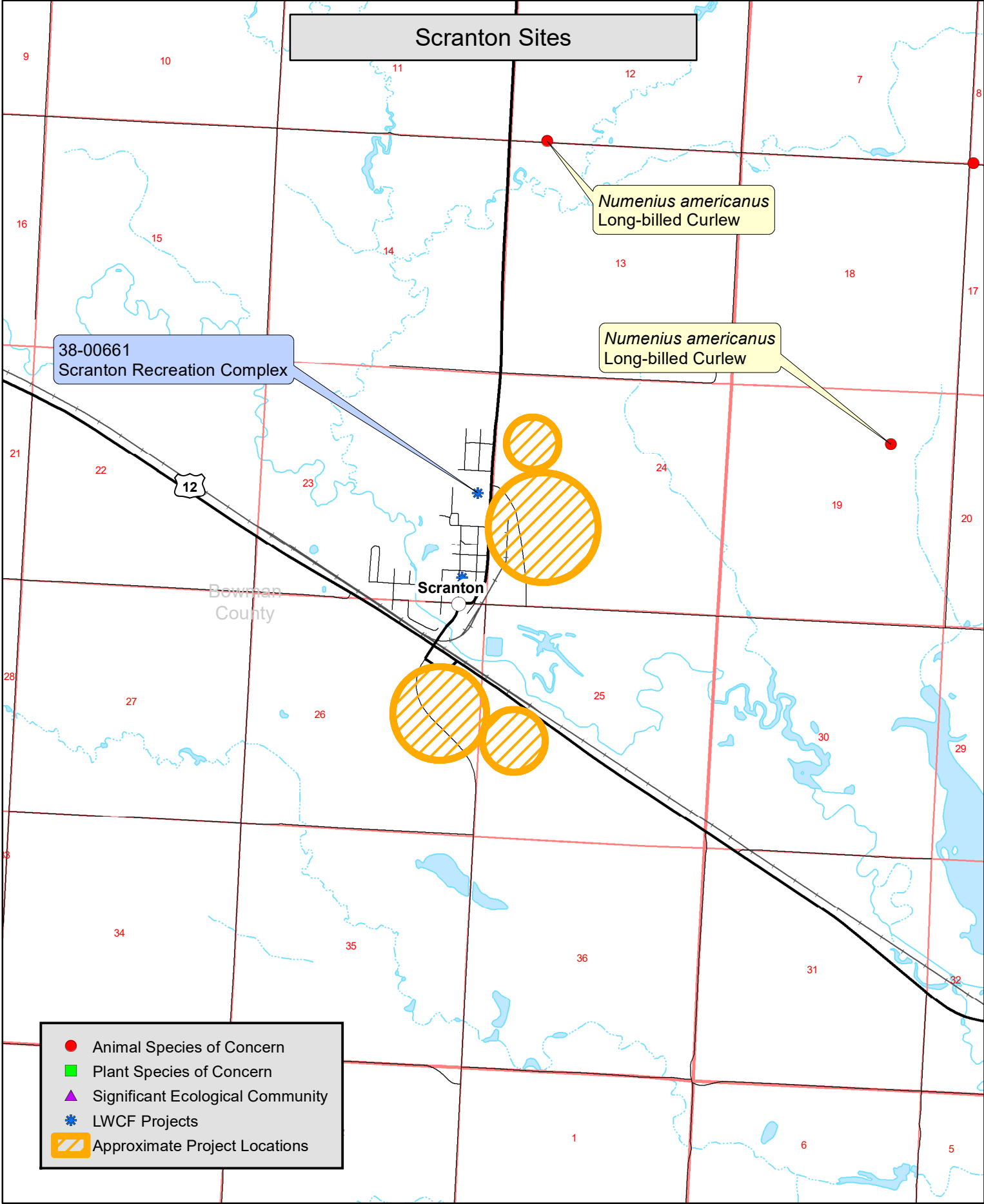
## Parshall Sites



- Animal Species of Concern
- Plant Species of Concern
- ▲ Significant Ecological Community
- ★ LWCF Projects
- ▨ Approximate Project Locations

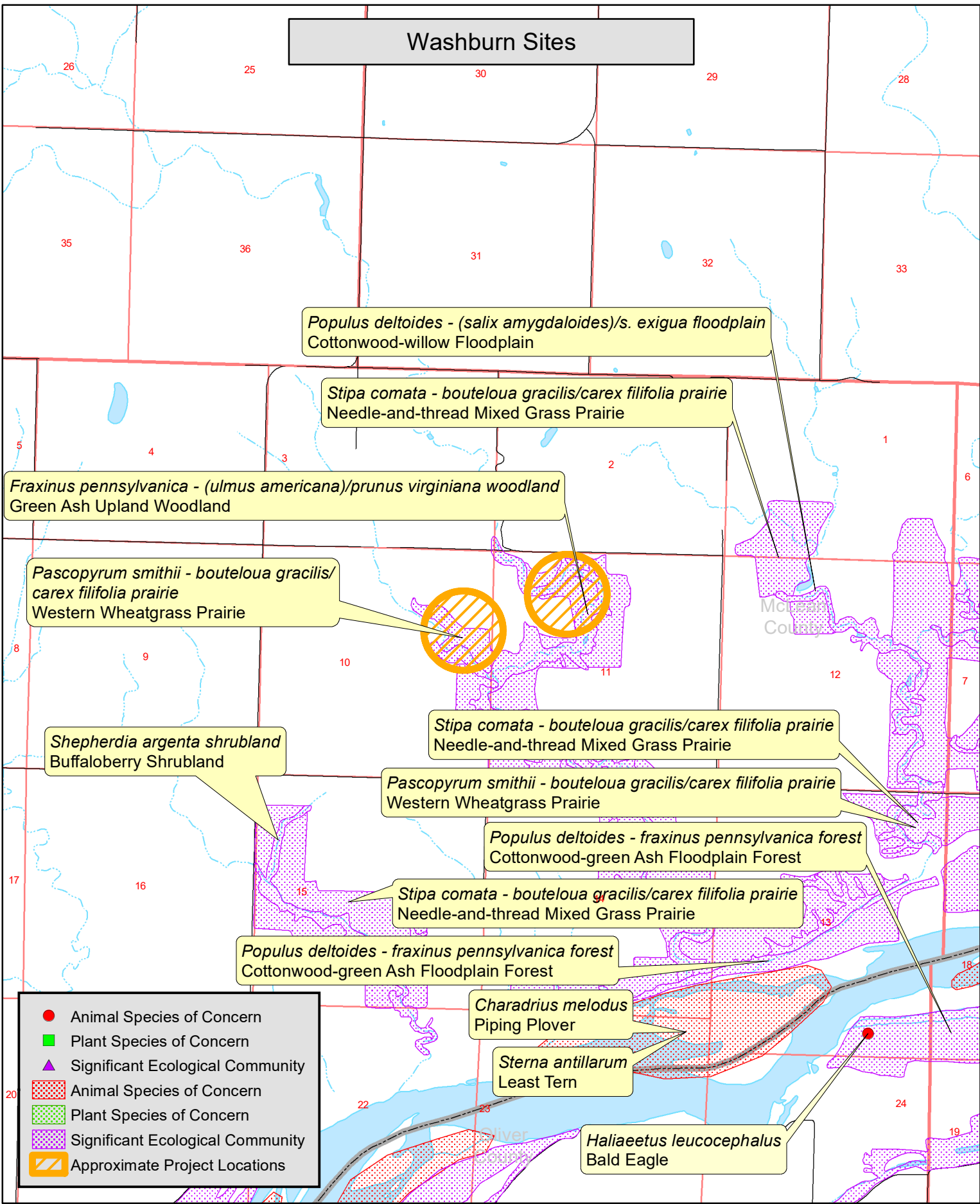
# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory

## Scranton Sites



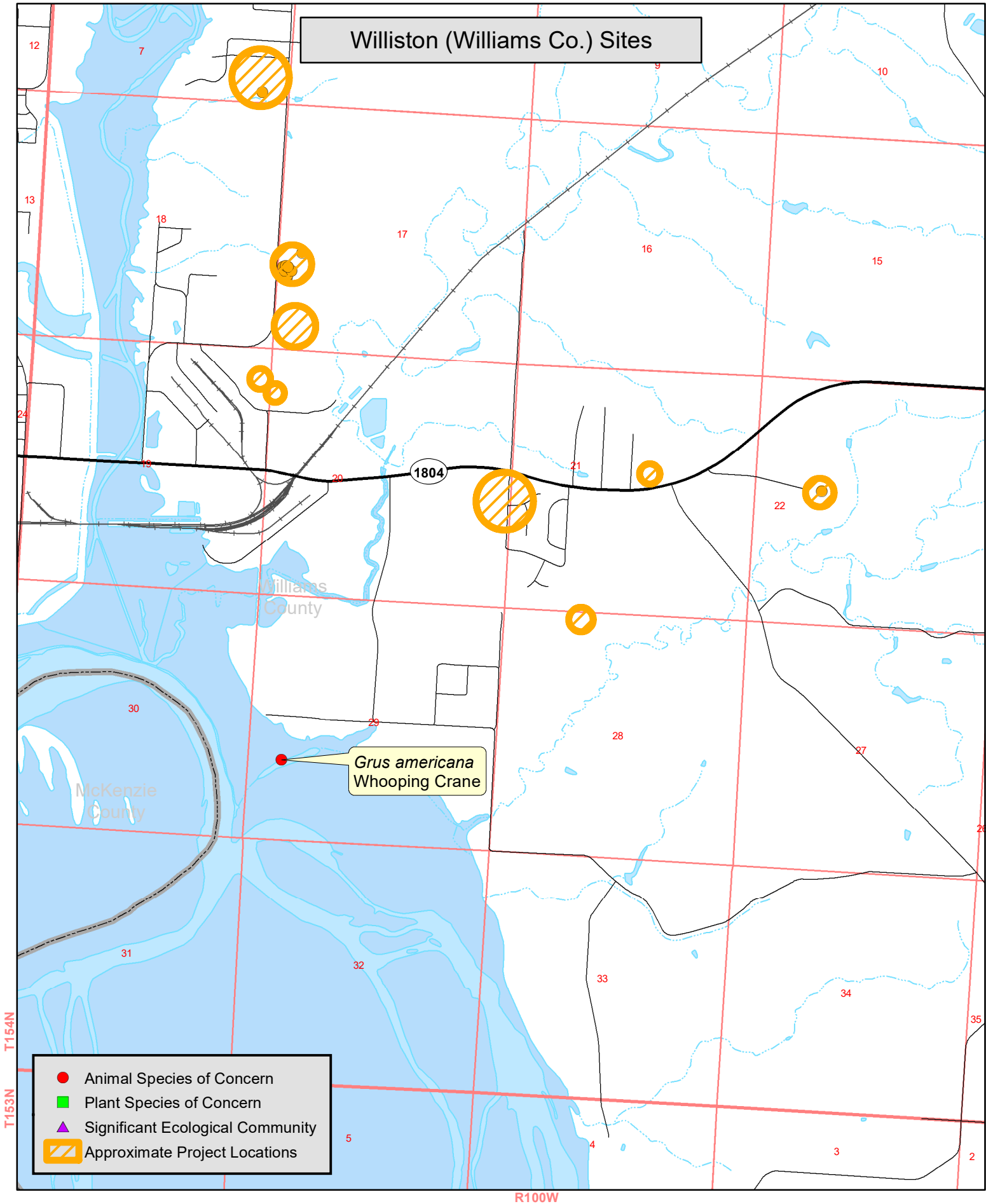
# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory

## Washburn Sites

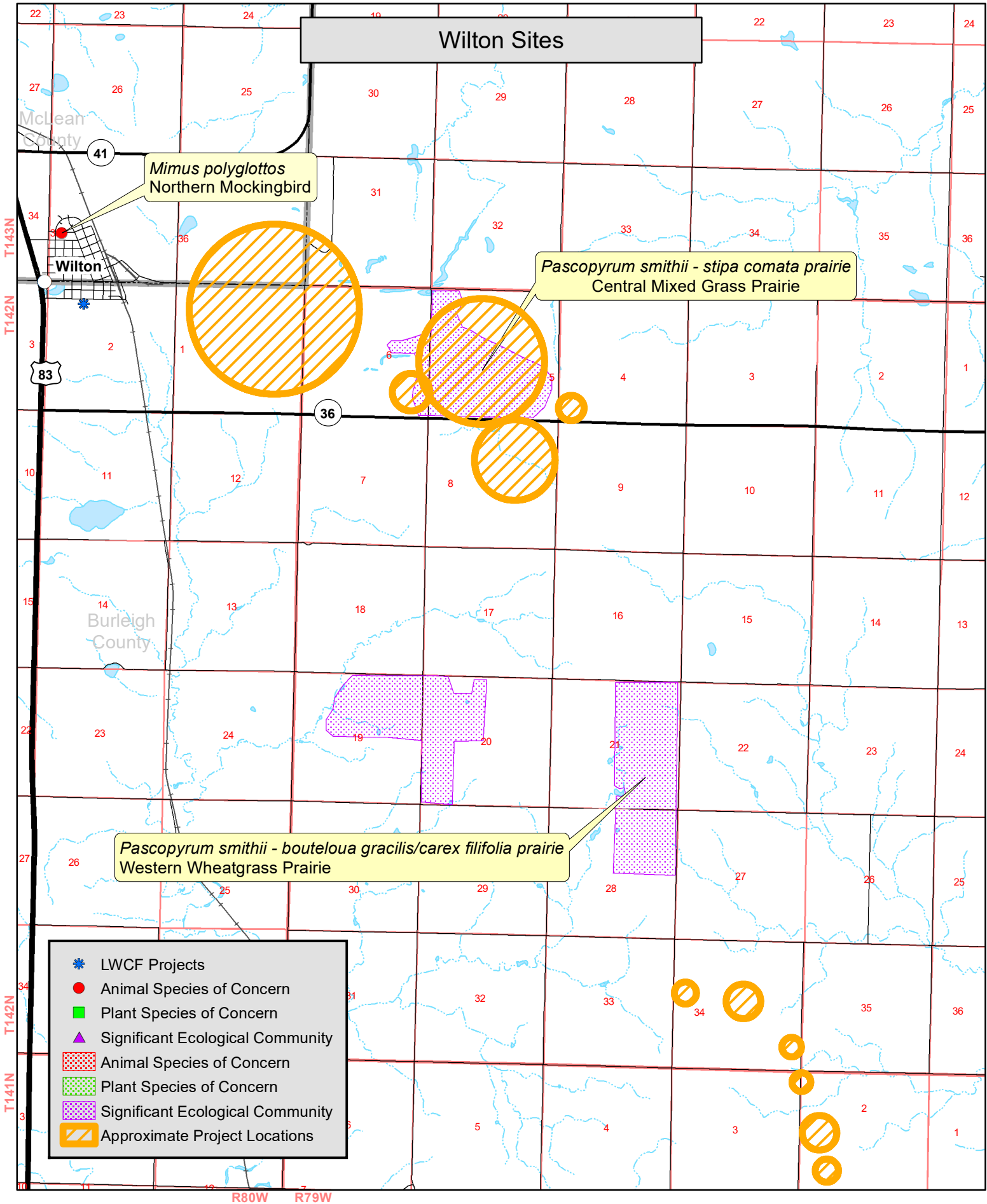


# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory

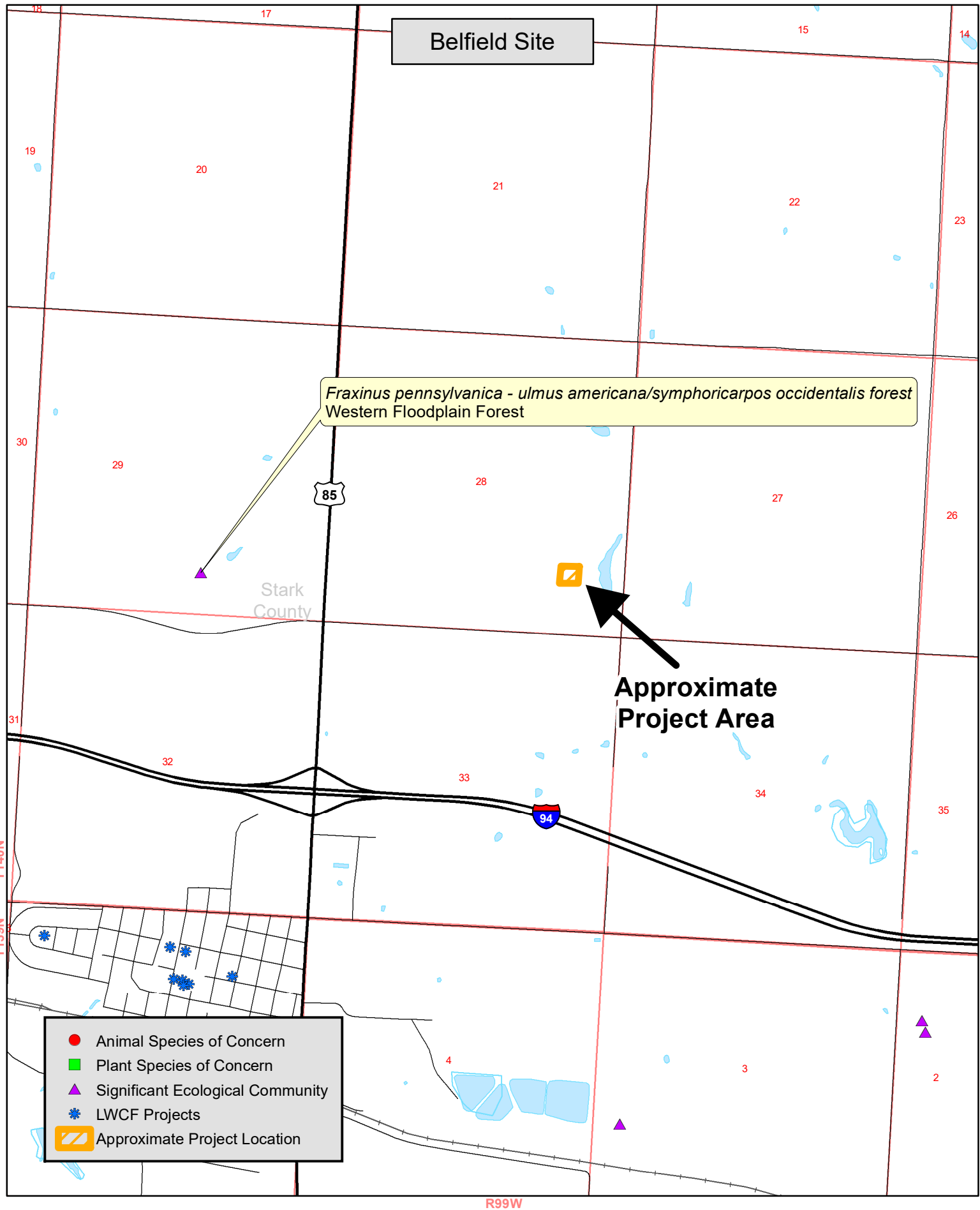
## Williston (Williams Co.) Sites



# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory



# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory



# North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory

