

March 8, 2019

Via Priority Mail, Return Receipt Requested

Mr. Craig Boomgaard
UIC Program - Salt Water Disposal
U.S. Environmental Protection Agency, Region 8
1595 Wynkoop Street
Denver, CO 80202-1129

**RE: UIC Permit Application
PRAIRIE CHICKEN SWD 1
SESE Section 31, T149N R94W
McKenzie County, North Dakota**

Dear Mr. Boomgaard:

I hereby submit the enclosed Underground Injection Control (UIC) permit application for the PRAIRIE CHICKEN SWD 1. This is a new well that Independence ND, LLC seeks to drill and operate as a Class II, Type D salt water disposal well.

Please review the enclosed application and accompanying attachments and notify me if you discover any deficiencies.

Sincerely,

/JC JOHNSON/

JC Johnson
President
Independence ND, LLC
~~701-627-4831~~
701-421-8407
Enclosures

UIC Class II Permit Application Completeness Review Checklist

Permit Writer:	Date Received:	Date Completed:
Permit Applicant: Independence ND, LLC	Prospective Permit #:	

✓	Description
X	Has the Permit Application (7520-6) been completed and does it include a signature from an authorized company official?
X	Attachment A: AREA OF REVIEW METHODS - Give the methods and, if appropriate, the calculations used to determine the size of the area of review (fixed radius or equation). The area of review shall be a fixed radius of 1/4 mile from the well bore unless the use of an equation is approved in advance by the Director.
X	Attachment B: MAPS OF WELL/AREA AND AREA OF REVIEW – Submit a topographic map extending one mile beyond the property boundaries, showing... ☒ the injection well(s) or project area for which a permit is sought and the applicable area of review. The map must show all... ☒ intake and discharge structures, ☒ hazardous waste treatment, storage, or disposal facilities and, ☒ (<i>For area permit application only</i>) the distribution manifold applying injection fluid to all wells in the area, including all system monitoring points. Within the area of review, the map must show... ☒ the number, or name, and location of all producing wells, ☒ injection wells, ☒ abandoned wells, ☒ dry holes, ☒ surface bodies of water, ☒ springs, mines (surface and subsurface), ☒ quarries, and ☒ other pertinent surface features, including residences and roads, and faults, if known or suspected. In addition, the map must identify those... ☒ wells, springs, other surface water bodies, and drinking water wells located within one quarter mile of the facility property boundary. Only information of public record is required to be included in this map.
X	Attachment C: CORRECTIVE ACTION PLAN AND WELL DATA - Submit a tabulation of data reasonably available from public records or otherwise known to the applicant on...

✓	Description ☒ all wells within the area of review, including those on the map required in B, which penetrate the proposed injection zone. Such data shall include a description of each well's... ☒ types, ☒ construction, ☒ date drilled, ☒ location, ☒ depth, ☒ well bore diagrams, CBL, completion records of AOR wells, <i>if available</i> ☒ record of plugging and/or completion, and ☒ AOR CAP, <i>if applicable</i>
	Attachment E: NAME AND DEPTHS OF FORMATION FROM SURFACE TO TOTAL DEPTH, INCLUDING USDW(S) AND CONFINING ZONE(S). – Submit the following information and identify if the formation is the injection zone, USDW, or confining. ☒ formation name ☒ depth ☒ formation lithology and ☒ formation TDS
	Attachment G: ADDITIONAL INJECTION ZONE INFORMATION ☒ fracture pressure (known or estimated)
	Attachment H: OPERATING DATA - Submit the following proposed operating data for each well (including all those to be covered by area permits): ☒ average and maximum daily rate and volume of the fluids to be injected ☒ average and maximum injection pressure; ☒ composition of annulus fluid; ☒ source and analysis of the chemical, physical, radiological and biological characteristics, including density and corrosiveness, of injection fluids.
	Attachment I: FORMATION TESTING PROGRAM - Describe the proposed formation testing program. The program must be designed to obtain...

** H. OPERATING DATA - Submit the following proposed operating data for each well (including all those to be covered by area permits): (1) average and maximum daily rate and volume of the fluids to be injected; (2) average and maximum injection pressure; (3) nature of annulus fluid; (4) for Class I wells, source and analysis of the chemical, physical, radiological and biological characteristics, including density and corrosiveness, of injection fluids; (5) for Class II wells, source and analysis of the physical and chemical characteristics of the injection fluid; (6) for Class III wells, a qualitative analysis and ranges in concentrations of all constituents of injected fluids. If the information is proprietary, maximum concentrations only may be submitted, but all records must be retained.

✓	Description ☒ fluid pressure ☒ injection formation fracture pressure ☒ physical and chemical characteristics of the formation fluids.
X	Attachment J: STIMULATION PROGRAM - Describe any proposed stimulation program.
X	Attachment K: INJECTION PROCEDURES - Describe the proposed injection procedures including pump, surge, tank, etc.
X	Attachment L: CONSTRUCTION PROCEDURES – Describe the anticipated injection well construction (meeting regulations under 40 CFR §146.12). This should include... ☒ details of the casing and cementing program ☒ logging procedures ☒ deviation checks ☒ the drilling, testing and coring program, and ☒ proposed annulus fluid. ☒ if applicable, a request justifying the use of an alternative to a packer
X	Attachment M: CONSTRUCTION DETAILS - Submit schematic or other appropriate drawings of the surface and subsurface construction details of the well.
X	Attachment O: PLANS FOR WELL FAILURES - Outline contingency plans to cope with all shut-ins or wells failures, so as to prevent migration of fluids into any USDW.
X	Attachment P: MONITORING PROGRAM - Discuss the planned monitoring program. This should be thorough, including... ☒ maps showing the number and location of monitoring wells as appropriate and discussion of monitoring devices, sampling frequency, and parameters measured. NA ☐ (If a manifold monitoring program is utilized, pursuant to §146.23(b)(5), describe the program and compare it to individual well monitoring.)
X	Attachment Q: PLUGGING AND ABANDONMENT PLAN - Submit a plan for plugging and abandonment of the well including... ☒ the type, number, and placement (including the elevation of the top and bottom) of plugs to be used; ☒ the type, grade, and quantity of cement to be used; and ☒ the method to be used to place plugs, including the method used to place the wells in a state of static equilibrium prior to placement of the plugs. ☒ Submit this information on EPA Form 7520-14, Plugging and Abandonment Plan.
X	Attachment R: NECESSARY RESOURCES - Submit evidence such as a surety bond or financial statement to verify that the resources necessary to close, plug or abandon the well are available.

✓	Description
X	Attachment S: AQUIFER EXEMPTIONS – If an aquifer exemption is requested, submit data necessary to demonstrate that the aquifer meets the following criteria... To be submitted at a later date if required ☐ it does not serve as a source of drinking water; ☐ cannot now and will not in the future serve as a source of drinking water; ☐ the TDS content of the ground water is more than 3,000 and less than 10,000 mg/l and ☐ is not reasonably expected to supply a public water system. ☐ Data to demonstrate that the aquifer is expected to be mineral or hydrocarbon producing. A timetable for proposed development must also be included. For additional information on aquifer exemptions, see 40 CFR §§ 144.7 and 146.04.
X	Attachment T: EXISTING EPA PERMITS - List any existing EPA permits including program name (e.g. SDWA, NPDES, PSD, RCRA, etc.) and permit number (e.g. AK11001-A) associated with the facility.
X	Attachment U: DESCRIPTION OF BUSINESS - Give a brief description of the nature of the business.

Well Information

Well Name	PRAIRIE CHICKEN SWD 1		
Well Type/Class	Commercial Salt Water Disposal (2D)		
Reservation Name	ND Fort Berthold		
N/E/C	New		
Operation Date	ASAP		
Oil Field Name	EAGLE NEST		
API # (xx-xxx-xxxxx)	TBD		
SPUD Date	ASAP	(mm/dd/yyyy)	
Comments	Drop down does not offer ND EAGLE NEST Field and not allowed to enter footage call of 420 FSL.		

Well Location

1/4 Sec	Section	Township	N/S	Range	E/W
SESE	31	149	N	94	W

Latitude

47	Deg	40	Min	31	Sec	OR		Decimal
----	-----	----	-----	----	-----	----	--	---------

Longitude

-102	Deg	45	Min	5	Sec	OR		Decimal
------	-----	----	-----	---	-----	----	--	---------

Footage

Calls	420	feet from	S	373	feet from	E
-------	-----	-----------	---	-----	-----------	---

State

ND

County

McKenzie

Well Construction

Ground Elevation	2443	feet
Kelly Bushing	15	feet
Total Depth of Well (KB)	6065	feet
Plugged Back Total Depth (KB)	6025	feet
Packer Depth (KB)	5640	feet

All Depths Measured in KB

Casing Type	Casing Description	Hole Diameter (in.)	Casing Diameter (in.)	Casing Top (ft)	Casing Bottom(ft)	Cement Top (ft)	Cement Bottom(ft)
Surface	J-55 36 lb/ft	13.500	9.625	0	2315	0	2315
Production	J-55 36 lb/ft	8.750	7.000	0	6065	0	6065

Perforations

	Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6	Perf 7	Perf 8	Perf 9	Perf 10
Perf Status	Proposed									
Top Depth (ft KB)	5670									
Bot Depth (ft KB)	5840									

Maximum Injection Pressure

Specific Gravity

Fracture Gradient

Depth

Friction Loss

Comments

Provide "Source of Value" if "Other" selected.

Value

1480 psi

1.21

0.80 psi/ft

5410 ft KB

103 psi

Source of value

Other

Water Sample

Other

MAIP & friction calculated in Attach H; 0.80 accepted standard for Mowry Fm.

Depths Measured in KB

Water Quality of Unit
(enter a value or range of values)

Value Range (mg/L)

Lower Upper

[illegible]

Enter TOTAL number of AOR Wells

14

Well Information

AOR (enter Well ID or leave blank)

Well Name

Type of Well

Well Status

Well Status Date

API # (xx-xxx-xxxxxx)

SPUD Date

Well

Location

AOR Well #1

24111

Beaver Creek 149-94-31D-30H TF

Producer

Active

10/31/2017

33-053-04490-00-00

2/15/2017

ND

State

McKenzie

County

1/4 Sec	Section	Township	N/S	Range	E/W
SWSE	31	149	N	94	W
Latitude		Longitude			
47.675426		-102.757816			

Well Construction

Total Depth of Well (KB)

Plugged Back Total Depth (KB)

21417 feet

21386 feet

Corrective Action

Corrective Action

Due Date

Completion Date

Additional Comments

No Corrective Action

AOR Well #2

24112

BRUGH BEAR 2-11H

Producer

Active

10/31/2017

33-053-04491-00-00

2/15/2017

ND

State

McKenzie

County

1/4 Sec	Section	Township	N/S	Range	E/W
SESW	31	149	N	94	W
Latitude		Longitude			
47.675457		-102.75741			

feet

feet

Wells with Other Corrective Action

Confidential well. No status, spud or other data available. Your form will not allow County info. Will update C & S info w/available.

AOR Well #3

24113

ZION 148-95-02B-11H

Producer

Active

10/31/2017

33-053-04492-00-00

2/18/2017

ND

State

McKenzie

County

1/4 Sec	Section	Township	N/S	Range	E/W
SWSE	31	149	N	94	W
Latitude		Longitude			
47.675428		-102.757613			

21205 feet

21185 feet

No Corrective Action

County drop-down does not work.

Casing

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	80	0	80
Surface	0	2438	0	2438
Intermediate	0	11700	5296	10798
Liner	10772	21386	11076	21386

Perforations

Perf Status

Top Depth (ft KB)

Bottom Depth (ft KB)

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11788					
21113					

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	80	0	80
Surface	0	2448	0	2448
Intermediate	0	11524	5170	10740
Liner	10717	21185	10743	21185

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5
Open				
11600				
20402				

Geological Setting

Depth to Top (ft KB) Depth to Bottom (ft KB)

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
Sentinel Butte	0	710
Tongue River	710	1210
Cannonball	1210	1760
Hell Creek	1760	1960
Fox Hills	1960	2156
Pierre	2156	4710
Greenhorn	4710	5143
Mowry	5143	5265
Skull Creek	5265	5465
Swift	5900	6400

Depth to Top (ft KB) Depth to Bottom (ft KB)

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
	0	710
	710	1210
	1210	1760
	1760	1960
	1960	2156
	2156	4710
	4710	5143
	5143	5265
	5265	5465
	5900	6400

Depth to Top (ft KB) Depth to Bottom (ft KB)

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
	0	710
	710	1210
	1210	1760
	1760	1960
	1960	2156
	2156	4710
	4710	5143
	5143	5265
	5265	5465
	5900	6400

AOR Well #4

29878
ET/STATIS 32-29HS
Producer
Active
5/22/17
33-053-06426-00-00
11/4/2016

1/4 Sec	Section	Township	N/S	Range	E/W
SWSW	32	149	N	94	W
Latitude		Longitude			
47.676344		-102.745601			

21870 feet
21864 feet

No Corrective Action

Sheet lists Status twice/cannot enter status date 5/22/17.

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	105	0	105
Surface	0	2244	0	2244
Intermediate	0	11828	3156	10960
Liner	10865	21864		21864

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11888					
21688					

Depth to Top (ft KB)	Depth to Bottom (ft KB)
0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

AOR Well #5

29879
ET/STATIS 32-29HB
Producer
Active
5/30/17
33-053-06427-00-00
11/4/2016

1/4 Sec	Section	Township	N/S	Range	E/W
SWSW	32	149	N	94	W
Latitude		Longitude			
47.676264		-102.745632			

21854 feet
21849 feet

-105.6789

No Corrective Action

Sheet lists Status twice/cannot enter status date 5/30/17.

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	105	0	105
Surface	0	2240	0	2240
Intermediate	0	11806	4404	10850
Liner	10811	21849		21849

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11863					
21657					

Depth to Top (ft KB)	Depth to Bottom (ft KB)
0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

Depth to Top (ft KB)	Depth to Bottom (ft KB)
0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

AOR Well #6

29880
ET/STATIS 32-29HX
Producer
Plugged & Abandoned
2/10/17
33-053-06428-00-00
11/3/2016

1/4 Sec	Section	Township	N/S	Range	E/W
SWSW	32	149	N	94	W
Latitude		Longitude			
47.676185		-102.745664			

21750 feet
0 feet

No Corrective Action

Sheet lists Status twice/cannot enter status date 2/10/17. DRY Hole B&A'd

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	105	0	105
Surface	0	2245	0	2245
Intermediate	0	11648	3852	9710

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6

Depth to Top (ft KB)	Depth to Bottom (ft KB)
0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

Depth to Top (ft KB)	Depth to Bottom (ft KB)
0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

AOR Well #7
 29881
 ETSTATIS 32-29HA
 Producer
 Active
 5/28/17
 33-053-06429-00-00
 11/2/2016

1/4 Sec	Section	Township	N/S	Range	E/W
SWSW	32	149	N	94	W
Latitude		Longitude			
47.676105		-102.745695			

21652 feet
 21647 feet

No Corrective Action

Sheet lists Status twice/cannot enter status date 5/28/17.

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	105	0	105
Surface	0	2241	0	2241
Intermediate	0	11590	2740	10706
Liner	10670	21647		21647

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11652					
21469					

Depth to Top (ft KB) Depth to Bottom (ft KB)

0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

AOR Well #8
 29882
 ETSTATIS 32-29HW
 Producer
 Active
 5/25/17
 33-053-06430-00-00
 11/1/2016

1/4 Sec	Section	Township	N/S	Range	E/W
SWSW	32	149	N	94	W
Latitude		Longitude			
47.676026		-102.745727			

21664 feet
 21657 feet

No Corrective Action

Sheet lists Status twice/cannot enter status date 5/25/17.

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	105	0	105
Surface	0	2240	0	2240
Intermediate	0	11583	2688	10750
Liner	10930	21657		21657

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11644					
21483					

Depth to Top (ft KB) Depth to Bottom (ft KB)

0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

AOR Well #9
 31189
 POPLAR 32-29HE
 Producer
 Active
 5/19/17
 33-053-06919-00-00
 10/31/2016

1/4 Sec	Section	Township	N/S	Range	E/W
SWSW	32	149	N	94	W
Latitude		Longitude			
47.675947		-102.745758			

21698 feet
 21678 feet

No Corrective Action

Sheet lists Status twice/cannot enter status date 5/19/17.

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	105	0	105
Surface	0	2262	0	2262
Intermediate	0	11648	2766	10860
Liner	10848	21678		21678

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11708					
21502					

Depth to Top (ft KB) Depth to Bottom (ft KB)

0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310
5310	5567
6039	6496

AOR Well #10

33344

ETSTATIS 32-29HXR

Producer

Active

6/3/17

33-053-07954-00-00

2/16/2017

1/4 Sec	Section	Township	N/S	Range	E/W
SWSW	32	149	N	94	W
Latitude		Longitude			
47.676423		-102.74557			

21728 feet

21723 feet

No Corrective Action

Sheet lists Status twice/cannot enter status date 6/3/17.

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	105	0	105
Surface	0	2425	0	2425
Intermediate	0	11689	2438	10890
Liner	10837	21723		21723

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11749					
21543					

Depth to Top (ft KB)

Depth to Bottom (ft KB)

0	680
680	1180
1180	1730
1730	1930
1930	2117
2117	4725
4725	5192
5192	5310

Enter TOTAL number of AOR Wells

14

Well Information

AOR (enter Well ID or leave blank)

Well Name

Type of Well

Well Status

Well Status Date

API # (xxx-xxx-xxxxx)

SPUD Date

Well

Location

AOR Well #1

20917					
LIKES EAGLE #2-31H					
Producer					
Active					
4/18/2012					
33-025-01388-00-00					
2/7/2012					
ND	State	Dunn	County		
1/4 Sec	Section	Township	N/S	Range	E/W
NWNE	2	148	N	95	W
Latitude		Longitude			
47.673461		-102.741762			

Well Construction

Total Depth of Well (KB)

Plugged Back Total Depth (KB)

20815	feet
20815	feet

Corrective Action

Corrective Action

Due Date

Completion Date

Additional Comments

No Corrective Action

Cement Top ~2784'. Cement is
ratty/course EPA to confirm isolation

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)
Conductor	0	104	0	104
Surface	0	2390	0	2390
Intermediate	0	11432	2784	10390
Liner	10532	20815		20815

Casing

Perforations

Perf Status

Top Depth (ft KB)

Bottom Depth (ft KB)

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6
Open					
11432					
20815					

Geological Setting

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
-----------	----------------------	-------------------------

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
Sentinel Butte	0	680
Tongue River	680	1180
Cannonball	1180	1730
Hell Creek	1730	1930
Fox Hills	1930	2115
Pierre	2115	4665
Greenhorn	4665	5118
Mowry	5118	5240
Skull Creek	5240	5456
Swift	5928	6369

AOR Well #2

22574					
GLACIER 148-95-02A-11H TF					
33-025-01651-00-00					
ND	State		County		
1/4 Sec	Section	Township	N/S	Range	E/W
NWNE	2	148	N	95	W
Latitude		Longitude			
47.673462		-102.741965			

	feet
	feet

Wells with Other Corrective Action

Confidential well. No status, spud or other data available. Your form will not allow County info. Will update C.A.B. info w/available

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
-----------	----------------------	-------------------------

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
	0	680
	680	1180
	1180	1730
	1730	1930
	1930	2115
	2115	4665
	4665	5118
	5118	5240
	5240	5456
	5928	6369

AOR Well #3

22575					
ACADIA 148-95-02A-11H TF					
33-025-01652-00-00					
ND	State		County		
1/4 Sec	Section	Township	N/S	Range	E/W
NWNE	2	148	N	95	W
Latitude		Longitude			
47.67346		-102.741559			

	feet
	feet

Wells with Other Corrective Action

Confidential well. No status, spud or other data available. form will not allow County info. Will update C.A.B. info w/available

Depths measured in KB

Casing Type	Casing Top (ft)	Casing Bottom (ft)	Cement Top (ft)	Cement Bottom (ft)

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
-----------	----------------------	-------------------------

Formation	Depth to Top (ft KB)	Depth to Bottom (ft KB)
	0	680
	680	1180
	1180	1730
	1730	1930
	1930	2115
	2115	4665
	4665	5118
	5118	5240
	5240	5456
	5928	6369

20446	
FORT BERTHOLD 148-95-3A-10-1H	
Producer	

1/4 Sec	Section	Township	N/S	Range	E/W
Latitude		Longitude			

	feet
	feet

Permit Now Cancelled. (Never drilled)

[illegible]

Perf 1	Perf 2	Perf 3	Perf 4	Perf 5	Perf 6

[illegible]

United States Environmental Protection Agency Underground Injection Control Permit Application <i>(Collected under the authority of the Safe Drinking Water Act. Sections 1421, 1422, 40 CFR 144)</i>		I. EPA ID Number		
			T/A	C
Read Attached Instructions Before Starting For Official Use Only				
Application approved mo day year	Date received mo day year	Permit Number	Well ID	FINDS Number
II. Owner Name and Address		III. Operator Name and Address		
Owner Name INDEPENDENCE ND, LLC		Owner Name INDEPENDENCE ND, LLC		
Street Address 301 1ST AVE E BAKERSFIELD		Street Address 301 1ST AVE E BAKERSFIELD		
Phone Number (701) 627-4831		Phone Number (701) 627-4831		
City NEWTOWN	State ND	ZIP CODE 58763-4405	City NEWTOWN	
		State ND		
		ZIP CODE 58763-4405		
IV. Commercial Facility		V. Ownership		
☒ Yes ☐ No		☒ Private ☐ Federal ☐ Other		
VI. Legal Contact		VII. SIC Codes		
☒ Owner ☐ Operator		1311		
VIII. Well Status (Mark "x")				
☐ A. Operating Date Started mo day year 		☐ B. Modification/Conversion ☒ C. Proposed		
IX. Type of Permit Requested (Mark "x" and specify if required)				
☒ A. Individual ☐ B. Area		Number of Existing Wells 		
		Number of Proposed Wells 1		
		Name(s) of field(s) or project(s) EAGLE NEST		
X. Class and Type of Well (see reverse)				
A. Class(es) (enter code(s))		B. Type(s) (enter code(s))		
II		D		
		C. If class is "other" or type is code 'x,' explain		
		D. Number of wells per type (if area permit)		
XI. Location of Well(s) or Approximate Center of Field or Project				
Latitude		Longitude		
Deg Min Sec	Deg Min Sec	Township and Range		
47 40 31.0	-102 45 4.58	Sec Twp Range 1/4 Sec 31 149 94 SE		
Feet From Line		Feet From Line		
420 S		373 E		
XII. Indian Lands (Mark 'x')				
☒ Yes ☐ No				
XIII. Attachments				
(Complete the following questions on a separate sheet(s) and number accordingly; see instructions) For Classes I, II, III, (and other classes) complete and submit on a separate sheet(s) Attachments A--U (pp 2-6) as appropriate. Attach maps where required. List attachments by letter which are applicable and are included with your application.				
XIV. Certification				
I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)				
A. Name and Title (Type or Print)		B. Phone No. (Area Code and No.)		
JC JOHNSON		(701) 627-4831		
C. Signature		D. Date Signed		
/JC JOHNSON/		11-5-18		

UIC PERMIT APPLICATION ATTACHMENTS
PRAIRIE CHICKEN SWD 1 – Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field - McKenzie County, ND

A. AREA OF REVIEW METHODS

Independence ND, LLC (Independence ND) used an estimated maximum rate of 17,000 bbls/day, a potential well life span of 10 years and the calculated average porosity and injection zone thickness of the offsetting BEAVER CREEK 149-94-31D-30H TF (NDIC Well File No. 24111) well to calculate a 0.49-mile radius of influence. A safety margin of 500 bbls/day was then added to the calculation to arrive at a radius of influence of 0.50-mile. Independence is proposing that the Area of Review reflect this 0.50-mile fixed radius of influence from the well bore of the proposed PRAIRIE CHICKEN SWD 1. Please note the supporting calculations in Attachment A1 and CND Log of the proposed injection zone in Attachment A2.



CALCULATION OF THE RADIUS OF INFLUENCE - PRAIRIE CHICKEN SWD 1
10 Year Life Span 17,000 Bbls/day - Attachment A1

Injection Zone	Inyan Kara
Avg. Porosity of Injection Zone (Θ)	20.9%
Thickness of Injection Zone (H)	86 Feet
Water Saturation of Injection Zone (Sw=1)	1.0
Formation Volume Factor (FVF)	1.1
Efficiency Factor (Ef=1)	1.0
Bbls Per Acre-Ft	7,758
Ft ² PER ACRE	43,560
Well Life Span	10 Years
Maximum Injection Rate	17,000 Bbls/day
End of Life Span Injection Volume	62,050,000 Bbls

$$\text{Area (Acres)} = \frac{\text{Bbls} * \text{FVF} * \text{Sw} * \text{Ef}}{7758 * \Theta * H}$$

$$\text{Radius of Influence(Feet)} = \left[\frac{43,560 * \text{Acres}}{\pi} \right]^{1/2}$$

Therefore;

$$\text{Radius} = \left[\frac{\text{Bbls} * \text{FVF} * \text{Sw} * \text{Ef} * 43,560}{7758 * \Theta * H * \pi} \right]^{1/2}$$

$$\text{Radius} = \left[\frac{62,050,000 * 1.1 * 1.0 * 1.0 * 43,560}{7758 * .209 * 86 * 3.14159} \right]^{1/2}$$

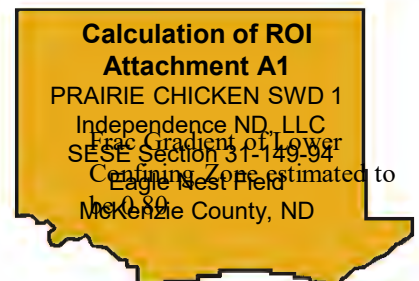
Radius = 2605 feet

Radius of Influence at Given Rates		
Rates (Bbls/day)	17,000	17,500
10 Year Inj. (Bbls)	62,050,000	63,875,000
Radius (feet)	2,605	2,643
Radius (miles)	0.49	0.50

*** Safety Factor- Expanding the Area of Review to 0.50-mile represents a 500 Bbl/day increase over the proposed maximum rate throughout the expected 10 year life span.

Injection Formation Data ****						
Injection Formation	Zone	Top ft	Bottom ft	Interval ft	Porosity %	
Inyan Kara	Zone 1	5729	5736	7	18%	0.0146512
Inyan Kara	Zone 2	5761	5766	5	14%	0.0081395
Inyan Kara	Zone 3	5780	5792	12	27%	0.0376744
Inyan Kara	Zone 4	5830	5840	10	24%	0.0279070
Inyan Kara	Zone 5	5846	5898	52	20%	0.1209302
			Total	86	Avg Porosity	20.9%
Perforation Interval		5729-5898'				

**** Formation depths are referenced from the CND Log of the offsetting BEAVER CREEK 149-94-31D-30H TF well (NDIC Well File No. 24111) but **are not** corrected for the elevation changes at the proposed location.



Upper Mowry/Skull Creek
Confining Zone
5143-5465' ****

Gross Inyan Kara Injection Zone
5465-5900' ****

Frac Gradient of Upper
Confining Zone estimated to
be 0.80

Frac Gradient of Injection
Zone estimated to be 0.67

Zone 1- 7' @ 18%Φ

Zone 2- 5' @ 14%Φ

Zone 3- 12' @ 27%Φ

Zone 4- 10' @ 24%Φ

Zone 5- 52' @ 20%Φ

Inyan Kara Perforated Zone
5729-5898' ****

Lower Swift Confining Zone
5900-6400' ****

**** Formation depths are referenced from the CND Log of the offsetting BEAVER CREEK 149-94-31D-30H TF well (NDIC Well File No. 24111) but **are not** corrected for the elevation changes at the proposed location.

**CND Log of Zones
Attachment A2**

PRAIRIE CHICKEN SWD 1

Independence ND, LLC

SESE Section 31-149-94

Eagle West Field

McKenzie County, ND

B. MAPS OF WELL/AREA AND AREA OF REVIEW (See Attachments B1-B7)

Independence ND, LLC

301 1st Ave E Bakersfield

Newtown, ND 58763-4405





0.50-Mile Area of Review

WF-20446

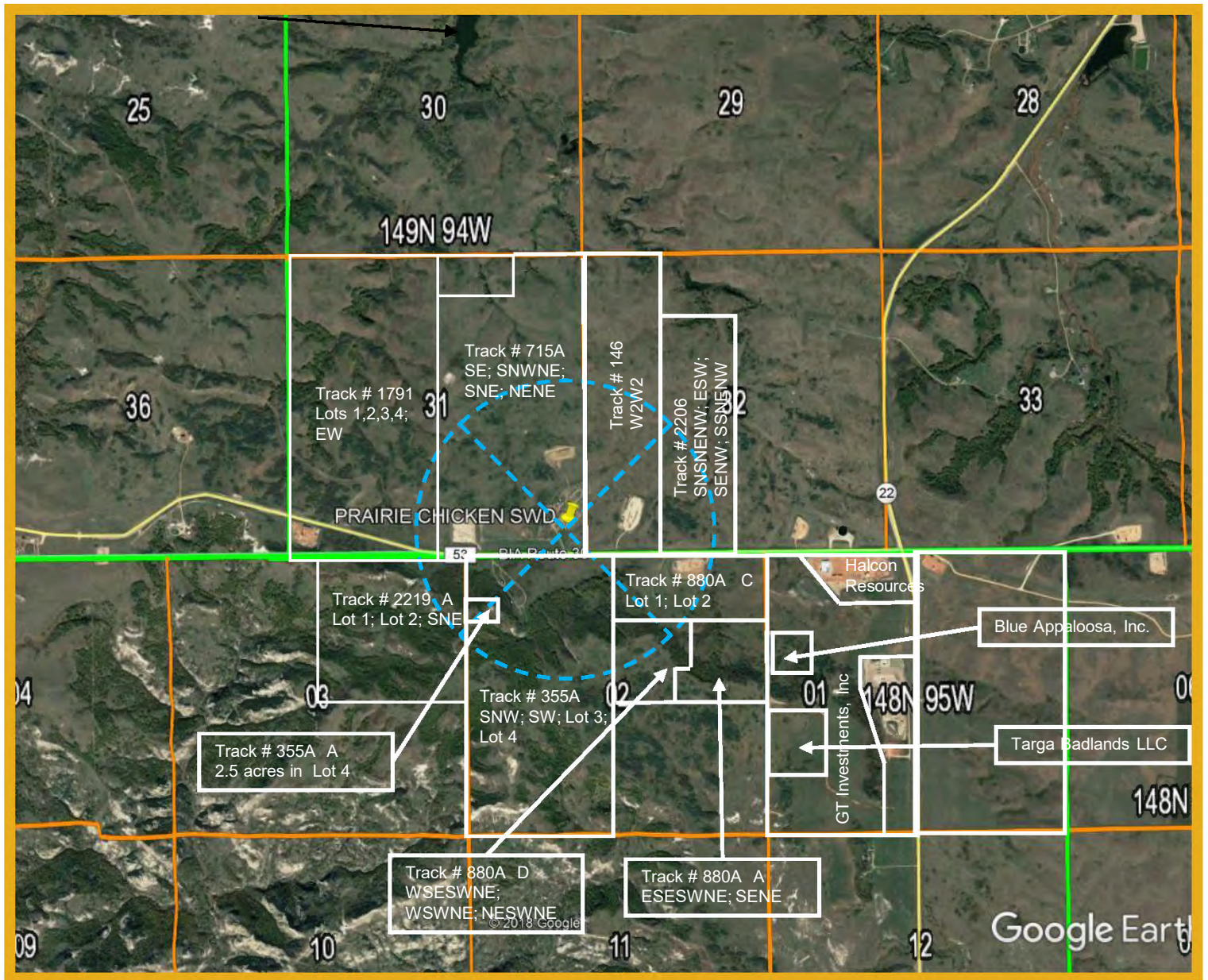
WF-24111
WF-24112
WF-24113

WF-29878
WF-29879
WF-29880
WF-29881
WF-29882
WF-31189
WF-33344

WF-20917
WF-22574
WF-22575

**Map of the 0.50-Mile AOR
Attachment B1**

PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND



0.50-Mile Area of Review

Landowner Description

Attachment B2

PRAIRIE CHICKEN SWD 1

Independence ND, LLC

SESE Section 31-149-94

Eagle Nest Field

McKenzie County, ND

Landowners Within 0.50-Miles of the Proposed PRAIRIE CHICKEN SWD 1

Tract 301 146 is held by the United States of America in trust for the Three Affiliated Tribes and other individuals.

Tract 301 355A is held by the United States of America in trust for the Three Affiliated Tribes and other individuals.

Tract 301 355A -A is held by the United States of America in trust for the Three Affiliated Tribes and other individuals.

Tract 301 715A is held by the United States of America in trust for individuals.

Tract 301 M 880A –A is held by the United States of America in trust for individuals.

Tract 301 880A –C is held by the United States of America in trust for an individual.

Tract 301 880A -D is held by the United States of America in trust for the Three Affiliated Tribes and other individuals.

Tract 301 1791 is held by the United States of America in trust for the Three Affiliated Tribes and other individuals.

Tract 301 2206 is held by the United States of America in trust for individuals.

Tract 301 2219 -A is held by the United States of America in trust for individuals.

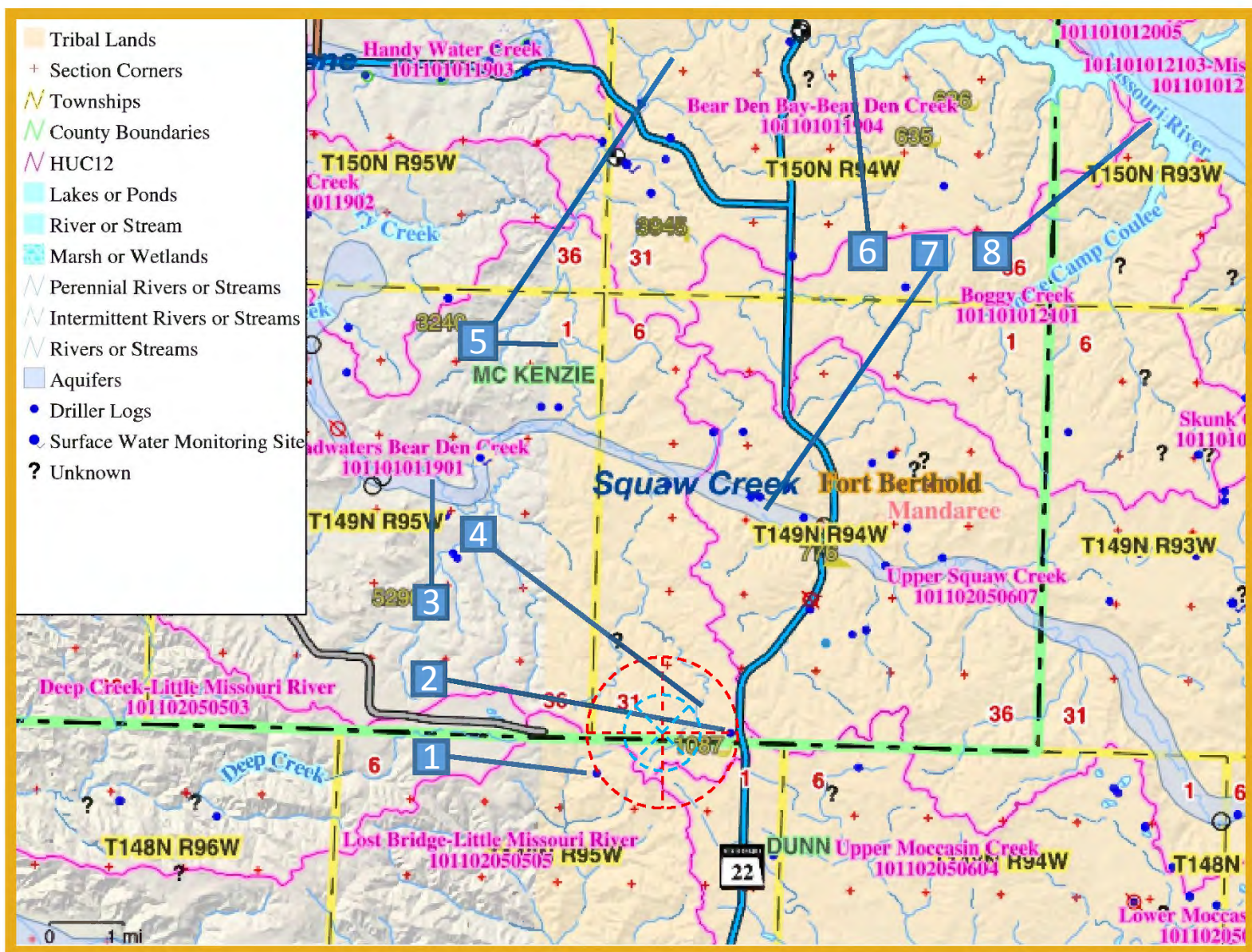
Proper notification for the above tracts should be addressed to:

US DEPARTMENT OF INTERIOR
BUREAU OF INDIAN AFFAIRS
PO BOX 370
NEW TOWN, ND 58763-0370

THREE AFFILIATED TRIBES
NATURAL RESOURCE DEPT
404 FRONTAGE ROAD
NEW TOWN, ND 58763-9402

Landowner Description Attachment B2.1

PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND



0.50-Mile Area of Review



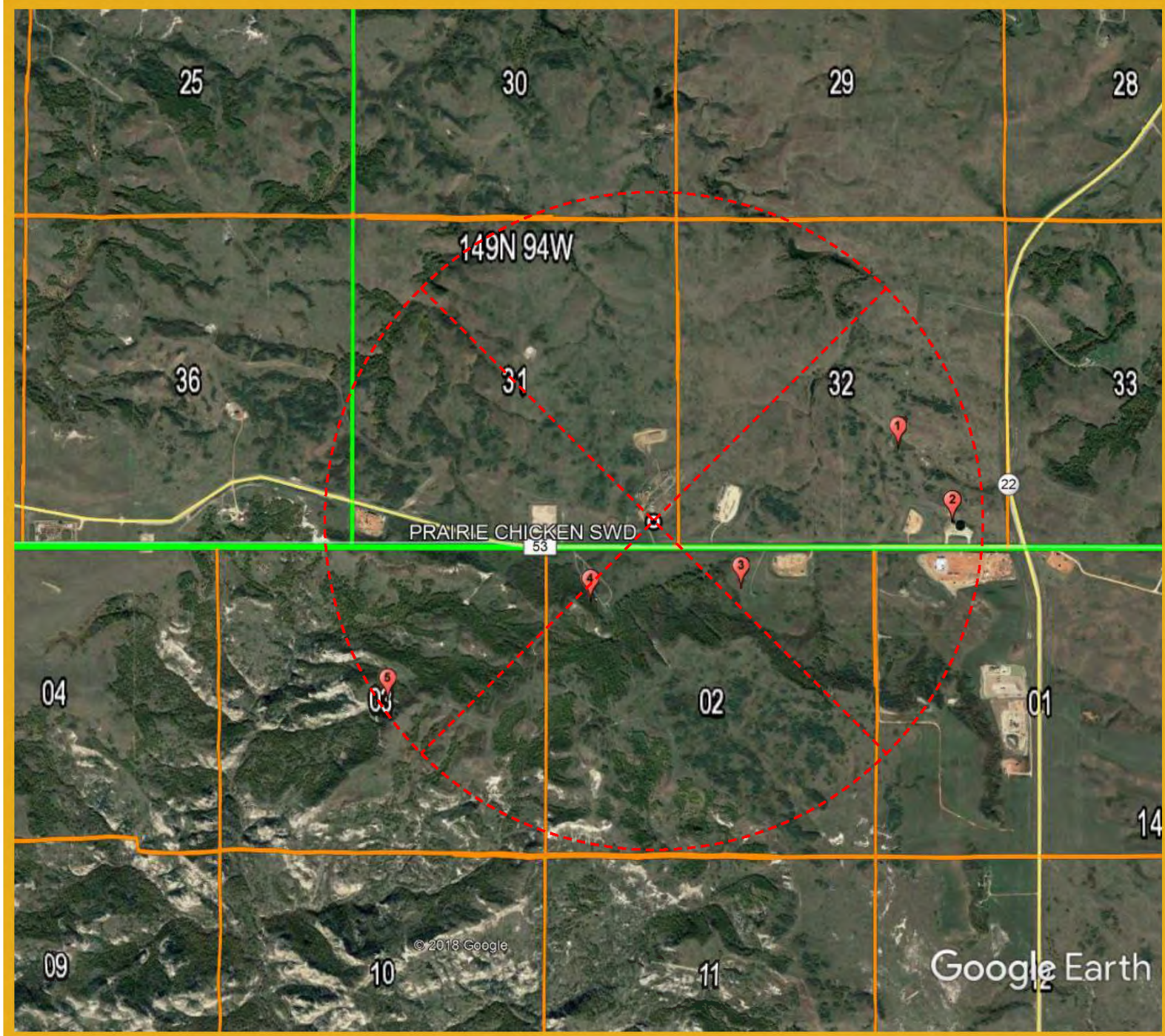
1-Mile Area of Review

Pertinent Surface Feature Discussion

1. NDSWC Domestic Driller Log Site 148-095-03. Reported coordinates of (47.667389, -102.768603) are approximately one mile from the proposed site.
2. NDSWC Industrial Driller Log Site 149-094-32 DD. Reported coordinates of (47.675956, -102.730833) are less than one mile from the proposed site. This is the nearest driller log to the proposed location.
3. The site is located within the Headwaters Bear Den Creek Sub-Watershed which is composed of 48.99 square miles or 31,353 acres.
4. An intermittent stream is located within ¼-mile of the proposed site. This intermittent stream flows into Bear Den Creek.
5. Bear Den Creek flows north and then east into Bear Den Bay.
6. Bear Den Bay is part of the Missouri River-Lake Sakakawea reservoir system. Independence ND, LLC is confident that the proposed primary and secondary containments of 5,827 & 19,235 Bbls respectively, as well as distance to the reservoir will minimize any potential risk.
7. The Squaw Creek Aquifer is approximately 3 miles northeast of the proposed PRAIRIE CHICKEN SWD 1 site.
8. The Missouri River Aquifer is over 10 miles northeast of the proposed PRAIRIE CHICKEN SWD 1 site.

**** There are no known wellhead protection areas or faults near the proposed facility that would preclude this site from being an acceptable location for a saltwater disposal facility.

**Pertinent Surface Features
Attachment B3**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND



Freshwater Investigation



1-Mile Area of Review

A thorough investigation for freshwater features including the review of the North Dakota State Water Commission GIS website, Google Earth mapping, scoping, driving and walking the area revealed one freshwater wells within the 1-mile area of review. The two nearest freshwater sources discovered were a stock dam in the stock dam located in NWSE of Section 32-149-94 investigated 10/11/2018 and the Savage Water Depot industrial freshwater well located in SESE of Section 32-149-94.

1. Stock dam located in NWSE of Section 32-149-94 investigated 10/11/2018. Analysis included as Attachment B3.1
2. Savage Water Depot freshwater well located in SESE of Section 32-149-94 investigated 10/11/2018. Analysis included as Attachment B3.2
3. Garland Likes Eagle freshwater well located NWSE of Section 2-148-95 investigated 10/11/2018. Spoke with Garland and he stated that his well has been abandoned for years and he is on rural water system. Inspection of well revealed missing cap and burnt power lines at box perhaps caused by lightning strike. Well determined to be abandoned and not viable.
4. Two residences were investigated in the NWNW of Section 2-148-95. Owner would not respond at first home but "Ben" came out of second home to south. He stated he is the son in law to Noreen living at first home and that well hasn't been used "forever" and that is was disconnected, abandoned, and replaced with the rural water system. Ben directed a search for the abandoned well in an area to the west. Extensive search did not reveal a wellhead or any sign of power lines or plumbing. Well determined to be abandoned and not viable.
5. This is the ND State Water Commission's reported location of the Daryl Young Bird 10 (148-095-03) freshwater well that was completed on 12/5/1985. After review, this location is believed to be in error and landowner documents support a more likely location in the NWNW of Section 2-148-95 (#4 above) where a well has reportedly been abandoned.

Freshwater Investigation Attachment B4

PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

MVTL**MINNESOTA VALLEY TESTING LABORATORIES, INC.**

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

**MEMBER
ACIL**

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

Page: 1 of 2

Independence ND LLC
301 1st Ave E Bakersfield
Newtown ND 58763-4405

Report Date: 1 Nov 18
Lab Number: 18-W3444
Work Order #: 82-2719
Account #: 048755
Date Sampled: 11 Oct 18 13:40
Date Received: 15 Oct 18 8:00
Sampled By: Client

Project Name: Independence
Sample Description: PC Stock Dam Section 32
Sample Site: 47.67845, -102.73540
Sample Location: NWSE Sec 32 T149 R94

Temp at Receipt: 5.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	15 Oct 18	SVS
pH	* 9.0	units	N/A	SM4500 H+ B	15 Oct 18 17:00	SVS
Conductivity (EC)	1840	umhos/cm	N/A	SM2510-B	15 Oct 18 17:00	SVS
Total Alkalinity	604	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Phenolphthalein Alk	44	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Bicarbonate	515	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Carbonate	89	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Hydroxide	< 20	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Tot Dis Solids (Summation)	1110	mg/l	12.5	SM1030-F	26 Oct 18 12:08	Calculated
Percent Sodium of Cations	89.6	%	NA	N/A	18 Oct 18 13:59	Calculated
Total Hardness as CaCO3	96.4	mg/l	NA	SM2340-B	18 Oct 18 13:59	Calculated
Hardness in grains/gallon	5.64	gr/gal	NA	SM2340-B	18 Oct 18 13:59	Calculated
Cation Summation	20.3	meq/L	NA	SM1030-F	26 Oct 18 11:59	Calculated
Anion Summation	19.4	meq/L	NA	SM1030-F	26 Oct 18 12:08	Calculated
Percent Error	2.29	%	NA	SM1030-F	26 Oct 18 12:08	Calculated
Sodium Adsorption Ratio	18.5		NA	USDA 20b	18 Oct 18 13:59	Calculated
Specific Gravity	1.0042	at 60/60F	NA	ASTM D1298	16 Oct 18 13:14	RAG
Fluoride	2.92	mg/l	0.10	SM4500-F-C	15 Oct 18 17:00	SVS
Sulfate	119	mg/l	5.00	ASTM D516-07	26 Oct 18 12:08	EV
Chloride	172	mg/l	1.0	SM4500-Cl-E	25 Oct 18 15:42	EV
Nitrate-Nitrite as N	< 0.1	mg/l	0.10	EPA 353.2	17 Oct 18 14:51	RAG
Calcium - Total	15.2	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Magnesium - Total	14.2	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Sodium - Total	417	mg/l	1.0	6010D	18 Oct 18 13:59	BB

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix
! = Due to sample quantity

= Due to concentration of other analyte
+ = Due to internal standard response

CERTIFICATION: ND # ND-00016

**FW Analysis 1
Attachment B4.1**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

Page: 2 of 2

Independence ND LLC
301 1st Ave E Bakersfield
Newtown ND 58763-4405

Report Date: 1 Nov 18
Lab Number: 18-W3444
Work Order #: 82-2719
Account #: 048755
Date Sampled: 11 Oct 18 13:40
Date Received: 15 Oct 18 8:00
Sampled By: Client

Project Name: Independence
Sample Description: PC Stock Dam Section 32
Sample Site: 47.67845, -102.73540
Sample Location: NWSE Sec 32 T149 R94

Temp at Receipt: 5.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Potassium - Total	6.9	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Barium - Total	< 0.1	mg/l	0.10	6010D	26 Oct 18 11:59	BB
Iron - Total	2.06	mg/l	0.10	6010D	26 Oct 18 11:59	BB
Manganese - Total	0.09	mg/l	0.05	6010D	26 Oct 18 11:59	BB
Chromium - Total	0.0030	mg/l	0.0020	6020B	30 Oct 18 19:00	CC

* Holding time exceeded

Approved by:

Claudette K. Carroll

Stacy Zander

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

Stacy Zander, Energy Laboratory Supervisor, Bismarck, ND

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix
! = Due to sample quantity

= Due to concentration of other analytes
+ = Due to internal standard response

CERTIFICATION: ND # ND-00016

MVTL**MINNESOTA VALLEY TESTING LABORATORIES, INC.**

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

**MEMBER
ACIL**

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

Page: 1 of 2

Independence ND LLC
301 1st Ave E Bakersfield
Newtown ND 58763-4405

Report Date: 1 Nov 18
Lab Number: 18-W3443
Work Order #: 82-2719
Account #: 048755
Date Sampled: 11 Oct 18 12:18
Date Received: 15 Oct 18 8:00
Sampled By: Client

Project Name: Independence
Sample Description: PC Savage Water Depot
Sample Site: 47.67520, -102.73200
Sample Location: SESE Sec 32 T149 R94

Temp at Receipt: 5.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	15 Oct 18	SVS
pH	* 8.5	units	N/A	SM4500 H+ B	15 Oct 18 17:00	SVS
Conductivity (EC)	2438	umhos/cm	N/A	SM2510-B	15 Oct 18 17:00	SVS
Total Alkalinity	912	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Phenolphthalein Alk	21	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Bicarbonate	870	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Carbonate	42	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Hydroxide	< 20	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Tot Dis Solids (Summation)	1350	mg/l	12.5	SM1030-F	26 Oct 18 12:08	Calculated
Percent Sodium of Cations	99.2	%	NA	N/A	18 Oct 18 13:59	Calculated
Total Hardness as CaCO3	6.24	mg/l	NA	SM2340-B	18 Oct 18 13:59	Calculated
Hardness in grains/gallon	0.37	gr/gal	NA	SM2340-B	18 Oct 18 13:59	Calculated
Cation Summation	24.8	meq/L	NA	SM1030-F	26 Oct 18 11:59	Calculated
Anion Summation	24.8	meq/L	NA	SM1030-F	26 Oct 18 12:08	Calculated
Percent Error	-0.07	%	NA	SM1030-F	26 Oct 18 12:08	Calculated
Sodium Adsorption Ratio	76.5		NA	USDA 20b	18 Oct 18 13:59	Calculated
Specific Gravity	1.0045	at 60/60F	NA	ASTM D1298	16 Oct 18 13:14	RAG
Fluoride	5.78	mg/l	0.10	SM4500-F-C	16 Oct 18 17:00	SVS
Sulfate	< 5	mg/l	5.00	ASTM D516-07	26 Oct 18 12:08	EV
Chloride	234	mg/l	1.0	SM4500-Cl-E	25 Oct 18 15:42	EV
Nitrate-Nitrite as N	< 0.1	mg/l	0.10	EPA 353.2	17 Oct 18 14:51	RAG
Calcium - Total	2.5	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Magnesium - Total	< 1	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Sodium - Total	566	mg/l	1.0	6010D	18 Oct 18 13:59	BB

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix

= Due to concentration of other analyte

! = Due to sample quantity

+ = Due to internal standard response

CERTIFICATION: ND # ND-00016

**FW Analysis 2
Attachment B4.2**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

MVTL

MINNESOTA VALLEY TESTING LABORATORIES, INC.

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

MEMBER
ACIL

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

Page: 2 of 2

Independence ND LLC
301 1st Ave E Bakersfield
Newtown ND 58763-4405

Report Date: 1 Nov 18
Lab Number: 18-W3443
Work Order #: 82-2719
Account #: 048755
Date Sampled: 11 Oct 18 12:18
Date Received: 15 Oct 18 8:00
Sampled By: Client

Project Name: Independence
Sample Description: PC Savage Water Depot
Sample Site: 47.67520, -102.73200
Sample Location: SESE Sec 32 T149 R94

Temp at Receipt: 5.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Potassium - Total	2.4	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Barium - Total	0.14	mg/l	0.10	6010D	26 Oct 18 11:59	BB
Iron - Total	< 0.1	mg/l	0.10	6010D	26 Oct 18 11:59	BB
Manganese - Total	< 0.05	mg/l	0.05	6010D	26 Oct 18 11:59	BB
Chromium - Total	< 0.002	mg/l	0.0020	6020B	30 Oct 18 19:00	CC

* Holding time exceeded

Approved by:

Claudette K. Carroll

Stacy Zander

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

Stacy Zander, Energy Laboratory Supervisor, Bismarck, ND

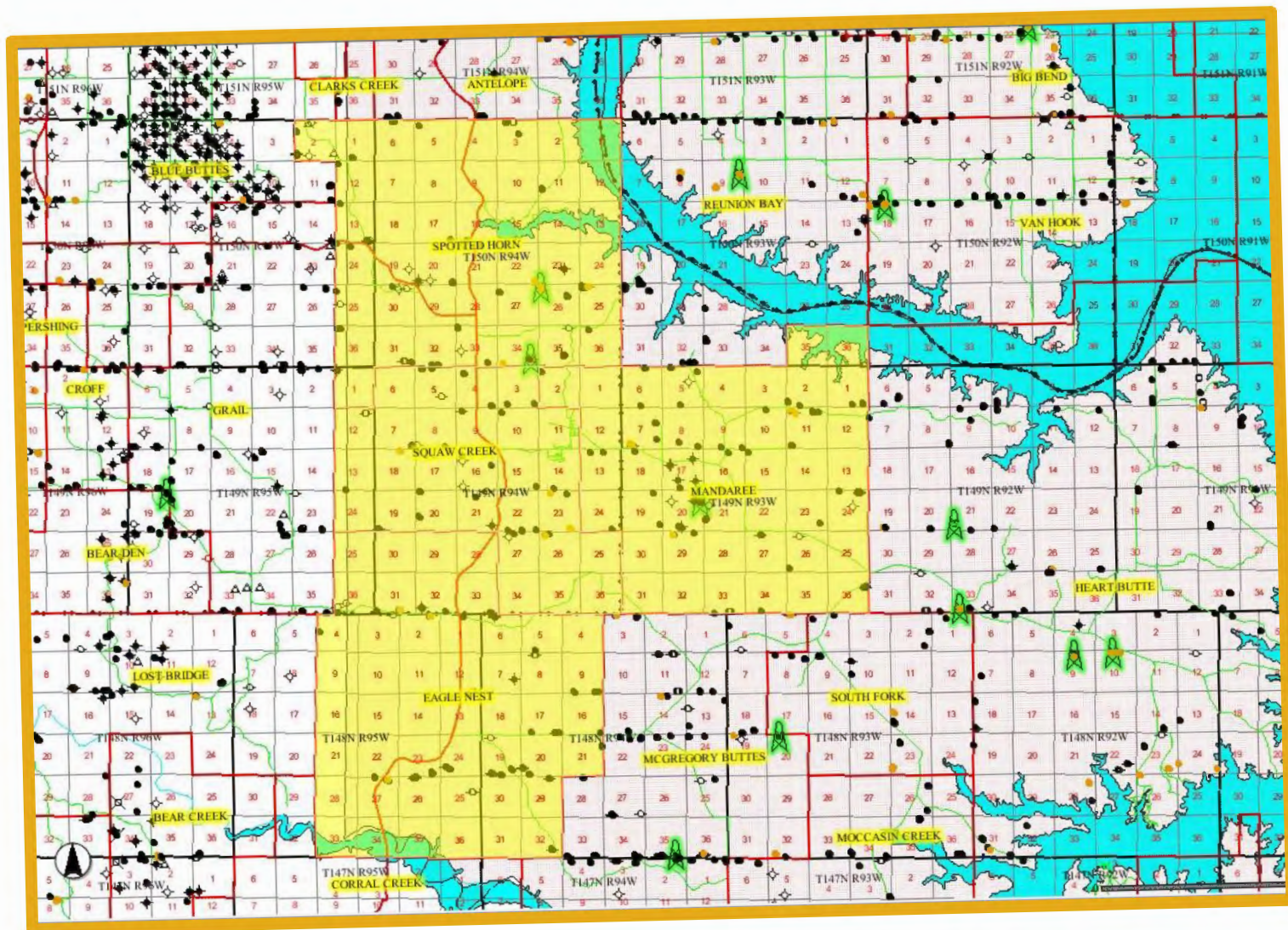
RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix
! = Due to sample quantity

= Due to concentration of other analytes
+ = Due to internal standard response

CERTIFICATION: ND # ND-00016



**** Generally, producing wells within the Spotted Horn, Squaw Creek, Mandaree, and Eagle Nest Fields

Potential Market Area
Attachment B5
 PRAIRIE CHICKEN SWD 1
 Independence ND, LLC
 SESE Section 31-149-94
 Eagle Nest Field
 McKenzie County, ND

Market Area Source Wells in the Area ****								
Field	Well Name	File No.	API No.	Well Type	Well Status	Status Date	Location	Operator
EAGLE NEST	FORT BERTHOLD 148-94-17C-08-3H	24418	33025019950000	OG	A	6/25/2015	SWSW 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17C-08-4H	24417	33025019940000	OG	A	6/24/2015	SESW 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17C-8-5H	25502	33025021460000	OG	A	6/30/2015	SESW 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17C-8-6H	28280	33025025240000	OG	A	6/16/2015	SESW 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17C-8-7H	28281	33025025250000	OG	A	6/18/2015	SESW 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17D-08-1H	18094	33025009300000	OG	A	2/11/2010	SESE 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17D-08-2H	21066	33025014110000	OG	A	12/30/2011	SESE 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17D-8-12H	30268	33025027940000	OG	A	10/15/2017	SESE 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-17D-8-13H	30269	33025027950000	OG	A	7/1/2015	SESE 17-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-19C-18-4H	27277	33025023950000	OG	A	8/18/2014	SESW 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-19C-18-5H	27279	33025023970000	OG	A	8/21/2014	SESW 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-19D-18-1H	20252	33025012700000	OG	A	6/23/2012	SESE 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-19D-18-2H	21079	33025014130000	OG	A	6/23/2012	SESE 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-19D-18-3H	23123	33025017620000	OG	A	6/20/2013	SWSE 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-20C-21-4H	25989	33025022100000	OG	A	6/2/2014	SWSW 20-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-20C-21-5H	25988	33025022090000	OG	A	6/1/2014	SWSW 20-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-20C-21-6H	27045	33025023620000	OG	A	5/30/2014	SWSW 20-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-21A-20-1H	22560	33025016470000	OG	A	2/13/2013	SENE 21-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-21A-20-2H	22561	33025016480000	OG	A	2/14/2013	SENE 21-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-21A-20-3H	22562	33025016490000	OG	A	2/14/2013	SENE 21-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-29A-32-3H	24306	33025019750000	OG	A	10/1/2013	NWNE 29-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-29A-32-4H	24307	33025019760000	OG	A	10/1/2013	NWNE 29-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-29A-32-5H	24310	33025019790000	OG	A	10/1/2013	NWNE 29-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-29B-32-1H	19976	33025012240000	OG	A	9/4/2012	SWSW 20-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-29B-32-2H	22983	33025017290000	OG	A	3/17/2013	SWSW 20-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-30A-31-1H	20253	33025012710000	OG	A	6/20/2012	SESE 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-30A-31-2H	21080	33025014140000	OG	A	6/20/2012	SESE 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-30A-31-3H	23124	33025017630000	OG	A	6/19/2013	SWSE 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-30B-31-4H	27278	33025023960000	OG	A	8/16/2014	SESW 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-30B-31-5H	27280	33025023980000	OG	A	8/18/2014	SESW 19-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-33C-28-3H	25534	33025021540000	OG	A	9/5/2014	SWSW 33-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9C-04-3H	22981	33025017280000	OG	A	7/5/2013	SESW 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9C-04-4H	22980	33025017270000	OG	A	7/4/2013	SESW 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9C-04-5H	22979	33025017260000	OG	A	7/4/2013	SESW 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9D-04-1H	18367	33025009860000	OG	A	7/14/2010	SESE 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9D-04-2H	20871	33025013830000	OG	A	7/30/2012	SESE 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9D-4-12H	32411	33025030970000	OG	LOC	12/21/2017	SESE 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9D-4-6H	32410	33025030960000	OG	LOC	12/21/2017	SESE 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-94-9D-4-7H	32409	33025030950000	OG	LOC	12/21/2017	SESE 9-148-94	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13A-24-3H	24299	33025019720000	OG	A	3/15/2018	NWNE 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13A-24-5H	24297	33025019700000	OG	A	3/15/2018	NWNE 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13A-24-6H	31154	33025029230000	OG	A	11/3/2017	NWNE 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13A-24-7H	31155	33025029240000	OG	A	10/10/2017	NWNE 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13A-24-8H	31156	33025029250000	OG	A	10/14/2017	NWNE 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13B-24-10H	30556	33025028340000	OG	A	12/19/2017	NWNW 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13B-24-11H	30557	33025028350000	OG	NC	8/20/2017	NENW 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13B-24-12H	30558	33025028360000	OG	A	12/19/2017	NENW 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13B-24-13H	30559	33025028370000	OG	A	12/20/2017	NENW 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13B-24-2H	30555	33025028330000	OG	A	12/18/2017	NWNW 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-13B-24-9H	33594	33025033080000	OG	A	7/15/2018	NWNW 13-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-22C-15-4H	25208	33025020910000	OG	A	4/17/2014	NENW 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-22C-15-5H	25210	33025020930000	OG	A	4/16/2014	SESW 22-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-22C-15-9H	26323	33025022610000	OG	A	4/20/2014	NENW 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-22D-15-1H	18968	33025010860000	OG	A	9/26/2012	NWNE 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-22D-15-2H	22300	33025016020000	Confidential	Confidential	Confidential	NWNE 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-22D-15-3H	22301	33025016030000	Confidential	Confidential	Confidential	NENE 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23C-14-10H	30564	33025028400000	OG	A	5/19/2016	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23C-14-3H	27431	33025024250000	OG	A	5/30/2016	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23C-14-4H	27433	33025024270000	OG	A	5/28/2016	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23C-14-5H	27435	33025024290000	OG	A	5/26/2016	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23C-14-8H	27432	33025024260000	OG	A	5/16/2016	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23C-14-9H	27434	33025024280000	OG	A	5/18/2016	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23D-14-1H	20172	33025012540000	OG	A	6/12/2012	SESE 23-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23D-14-2H	20866	33025013820000	OG	A	1/15/2018	SESE 23-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23D-14-6H	27125	33025023700000	OG	A	4/15/2018	SESE 23-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-23D-14-7H	27127	33025023720000	OG	A	2/17/2015	SESE 23-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-24C-13-1H	20918	33025013890000	OG	A	4/15/2018	SWSW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-1H	20919	33025013900000	OG	A	10/4/2012	SWSW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-2H	22503	33025016420000	OG	A	4/23/2016	SWSW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-3H	27417	33025024240000	OG	A	4/22/2016	SWSW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-4H	27416	33025024230000	OG	A	4/20/2016	SWSW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-5H	27415	33025024220000	OG	A	4/18/2016	SWSW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-6H	27414	33025024210000	OG	A	4/16/2016	SWSW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-7H	27412	33025024200000	OG	A	4/13/2016	SESW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-25B-36-8H	31188	33025029340000	OG	A	4/10/2016	SESW 24-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-26A-35-10H	27126	33025023710000	OG	A	2/14/2015	SESE 23-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-26A-35-14H	27646	33025024640000	OG	A	2/9/2015	SESE 23-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD 148-95-26A-35-1H	20173	33025012550000	OG	A	6/18/2012	SESE 23-148-95	BRUIN E&P OPERATING, LLC

**Potential Source Wells
Attachment B5.1 (7 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

EAGLE NEST	FORT BERTHOLD	148-95-26A-35-2H	21963	33025015580000	OG	A	2/20/2015	SESE 23-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-26B-35-3H	27456	33025024390000	OG	A	11/25/2014	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-26B-35-4H	27458	33025024410000	OG	A	3/15/2018	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-26B-35-5H	27460	33025024430000	OG	A	12/5/2014	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-26B-35-8H	27459	33025024420000	OG	A	12/3/2014	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-26B-35-9H	27457	33025024400000	OG	A	12/10/2014	NENW 26-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-27A-34-1H	18969	33025010870000	OG	A	9/26/2012	NWNE 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-27A-34-2H	22298	33025016000000	OG	A	10/10/2012	NWNE 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-27A-34-3H	22299	33025016010000	OG	A	10/16/2012	NENE 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-27B-34-4H	25207	33025020900000	OG	A	5/13/2014	NENW 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-27B-34-5H	25209	33025020920000	OG	A	4/12/2014	SESW 22-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	FORT BERTHOLD	148-95-27B-34-8H	26322	33025022600000	OG	A	4/26/2014	NENW 27-148-95	BRUIN E&P OPERATING, LLC
EAGLE NEST	ACADIA	148-95-02A-11H TF	22575	33025016520000	Confidential	Confidential	Confidential	LOT1 2-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	BAIT	149-95-36C-25H	31071	33053068730000	OG	A	10/15/2016	LOT4 36-149-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	BEAVER CREEK	149-94-31D-30H TF	24111	33053044900000	OG	A	10/31/2017	SWSE 31-149-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	BLANC	148-95-12D-01H	33520	33025032900000	OG	A	3/8/2018	SESE 12-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	BRADFIELD	31-14H	22530	33053040220000	OG	A	9/24/2012	LOT4 31-149-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	BRUGH BEAR	2-11H	24112	33053044910000	Confidential	Confidential	Confidential	SWSE 31-149-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	BUFFALO RUN	5-24H	19476	33025011580000	OG	A	4/11/2012	SESW 5-148-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	BURR	16-44H	17304	33025007640000	OG	A	2/3/2009	SESE 16-148-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	CAMELIA	148-94-16CH	34620	33025034450000	OG	NC	6/8/2018	SWSE 16-148-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	CIRRUSS	149-94-33D-28H	24163	33053045070000	OG	A	4/14/2013	SESE 33-149-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	DENALI	148-95-12D-01H-TF	32751	33025031600000	OG	A	6/29/2017	SESE 12-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	ELBERT	148-95-12D-01H-TF	33169	33025032480000	OG	A	4/15/2018	SESE 12-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	EMERALD	148-95-03A-10H	22531	33053040230000	OG	A	9/25/2012	LOT4 31-149-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	EVANS	148-95-12D-01H	33522	33025032920000	OG	A	3/8/2018	SESE 12-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	EVEREST	148-95-12D-01H	32750	33025031590000	OG	A	6/29/2017	SESE 12-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	GLACIER	148-95-02A-11H TF	22574	33025016510000	Confidential	Confidential	Confidential	LOT2 2-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	GRAY WOLF	148-94-05CH TF	21415	33025014520000	OG	A	4/7/2012	SESW 5-148-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	LIKES EAGLE	#2-31H	20917	33025013880000	OG	A	4/18/2012	LOT2 2-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	NIMBUS	149-94-33D-28H	24164	33053045080000	OG	A	4/18/2013	SESE 33-149-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	QUILLFISH	149-95-36C-25H-TF-LLW	32341	33053074210000	OG	A	10/16/2016	LOT4 36-149-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	TACKLE	149-95-36C-25H TF	31072	33053068740000	OG	A	10/14/2016	LOT4 36-149-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	TAT {714A}	2-1H	17975	33025008970000	OG	IA	8/15/2018	LOT2 1-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	VINSON	148-95-12D-01H-TF	33521	33025032910000	OG	A	3/8/2018	SESE 12-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	WHITNEY	148-95-12D-01H	33168	33025032470000	OG	A	4/15/2018	SESE 12-148-95	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	ZION	148-95-02B-11H	24113	33053044920000	OG	A	10/31/2017	SWSE 31-149-94	ENERPLUS RESOURCES USA CORPORATION
EAGLE NEST	TAT	4-35-26TH	28460	33053059570000	OG	A	6/29/2015	SESE 35-149-95	QEP ENERGY COMPANY
EAGLE NEST	BEARSTAIL	32-29H	18419	33053030720000	OG	A	2/4/2012	SWSE 32-149-94	WPX ENERGY WILLISTON, LLC
EAGLE NEST	ETSTATIS	32-29HXR	33344	33053079540000	OG	A	6/3/2017	SWSW 32-149-94	WPX ENERGY WILLISTON, LLC
EAGLE NEST	ETSTATIS	32-29HA	29881	33053064290000	OG	A	5/28/2017	SWSW 32-149-94	WPX ENERGY WILLISTON, LLC
EAGLE NEST	ETSTATIS	32-29HB	29879	33053064270000	OG	A	5/30/2017	SWSW 32-149-94	WPX ENERGY WILLISTON, LLC
EAGLE NEST	ETSTATIS	32-29HS	29878	33053064260000	OG	A	5/22/2017	SWSW 32-149-94	WPX ENERGY WILLISTON, LLC
EAGLE NEST	ETSTATIS	32-29HW	29882	33053064300000	OG	A	5/25/2017	SWSW 32-149-94	WPX ENERGY WILLISTON, LLC
EAGLE NEST	FETTIG	6-7HC	22270	33025015960000	OG	A	9/28/2012	LOT3 6-148-94	WPX ENERGY WILLISTON, LLC
EAGLE NEST	POPLAR	32-29HE	31189	33053069190000	OG	A	5/19/2017	SWSW 32-149-94	WPX ENERGY WILLISTON, LLC
MANDAREE	AGAVE	149-93 06C-4H TF	20103	33025012420000	OG	A	11/15/2011	SESW 6-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	APOLLO	149-93-33D-28H-TF	34839	33025034850000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	ARABIAN	149-93-29B-32H	22664	33025016680000	OG	A	3/9/2013	NENW 29-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	ARNICA	149-93-21B-22H TF	22747	33025016780000	Confidential	Confidential	Confidential	SENE 20-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	ATHENA	149-93-33C-28H-TF	34841	33025034870000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	ATLAS	149-93-33C-28H	23227	33025017850000	OG	A	2/10/2013	SESW 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	BANJO	149-94-02B-01H TF	24963	33053047870000	OG	A	11/17/2015	LOT4 2-149-94	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	BIRDBEAR	6C-1H	20102	33025012410000	OG	A	11/14/2011	SESW 6-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	BLUESTEM	149-93-21C-22H TF	22746	33025016770000	OG	A	6/9/2013	NWSW 21-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	BOBBIN	149-93-04D-03H TF	29973	33025027380000	OG	A	2/15/2018	SWSW 2-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	BOREAS	149-93-33C-28H	34843	33025034890000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	CALYPSO	149-93-33C-28H TF	23226	33025017840000	OG	A	2/9/2013	SESW 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	CARACAL	149-93-30A-31H-TF	33774	33025033190000	Confidential	Confidential	Confidential	NWNE 30-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	CHEETAH	149-93-30A-31H	24235	33025019580000	OG	NC	5/8/2018	NWNE 30-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	CHOKECHERRY	149-93-21A-22H	22748	33025016790000	OG	A	11/6/2012	SENE 20-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	EOS	149-93-33D-28H-TF	34835	33025034810000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	FOX RIDGE	10-21H	20499	33025013230000	OG	A	12/10/2011	NENW 10-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	GRASSY KNOLL	2-11H	24962	33053047860000	OG	A	11/13/2015	LOT4 2-149-94	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	HERA	149-93-33D-28H	34838	33025034840000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	HIDATSA HILLS	26-21H	33429	33025032780000	OG	A	11/9/2017	SWSW 26-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	HOMER	149-93-33D-28H-TF	34837	33025034830000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	HONEY BADGER	149-93-30A-31H	34413	33025034180000	Confidential	Confidential	Confidential	NWNE 30-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	HUDSON	13-21H	20087	33053033910000	OG	A	3/20/2017	NENW 13-149-94	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	HYENA	149-93-30A-31H-TF	24234	33025019570000	OG	NC	4/17/2018	NWNE 30-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	JACKAL	149-93-31A-30-1H	21785	33025015180000	OG	A	6/13/2012	LOT1 3-148-94	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	LEOPARD	149-93-30A-31H-TF	33776	33025033210000	Confidential	Confidential	Confidential	NWNE 30-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	LEVINGS ESTATE	1-08H	18560	33025010180000	OG	A	6/1/2010	SESE 8-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	LION	149-93-31A-30-2H TF	21784	33025015170000	OG	A	6/13/2012	LOT1 3-148-94	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	MARS	149-93 08D-2H TF	21229	33025014260000	Confidential	Confidential	Confidential	SESE 8-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	METIS	149-93-33C-28H-TF	34842	33025034880000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	MORGAN	149-93-29B-32H TF	22663	33025016670000	Confidential	Confidential	Confidential	NWNW 29-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	MORRISON	149-93-10AH	20977	33025013970000	OG	A	12/10/2011	NWNE 10-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	MUSTANG	149-93-29A-32H TF	22665	33025016690000	OG	A	9/10/2013	NENE 29-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	NEEDLE	149-93-05AH	22727	33025016750000	OG	A	1/9/2013	LOT1 5-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	NYX	149-93-33D-28H	34836	33025034820000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION

MANDAREE	PATRICIA CHARGING 4-15H	18166	33025009420000	OG	A	4/13/2010	NWNW 15-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	PINTO 149-93-29A-32H	22666	33025016700000	OG	A	9/11/2013	NENE 29-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	PLUTO 149-93 05C-2H TF	21004	33025014050000	Confidential	Confidential	Confidential	SESW 5-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	QUILT 149-93-04D-03H	29972	33025027370000	OG	A	2/7/2016	SWSW 2-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	RAIN 149-93-07A-12H TF	25735	33025021770000	OG	A	6/15/2015	SENE 7-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	RED ROCKS 149-93-10AH	20978	33025013980000	OG	A	10/15/2017	NENW 10-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	SCISSORS 149-93-04B-03H	34416	33025034210000	OG	NC	7/17/2018	LOT1 5-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	SERGER 149-93-04B-03H TF	22726	33025016740000	OG	A	10/5/2012	LOT1 5-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	SERVAL 149-93-30A-31H	33775	33025033200000	Confidential	Confidential	Confidential	NWNE 30-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	SITKA 149-93 06A-3H TF	20101	33025012400000	OG	A	3/1/2012	LOT 2 6-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	SNOW 149-93-07A-12H	25736	33025021780000	OG	A	6/15/2015	SENE 7-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	SOWARD 1-05H	17920	33025008900000	OG	A	6/13/2010	SESW 5-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	SUN 149-93-07D-12H	25738	33025021800000	OG	A	8/20/2014	SESE 7-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	TAILOR 149-93-04B-03H-TF	34414	33025034190000	OG	NC	7/30/2018	LOT1 5-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	THIMBLE 149-93-04B-03H	34415	33025034200000	OG	NC	7/23/2018	LOT1 5-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	THREAD 149-93-04D-03H	29974	33025027390000	OG	A	2/7/2016	SWSW 2-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	WIND 149-93-07D-12H TF	25737	33025021790000	OG	A	8/20/2014	SESE 7-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	WORMWOOD 149-93-21C-22H	22745	33025016760000	OG	A	6/11/2013	NWSW 21-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	YELLOWBIRD 6A-1H	20100	33025012390000	OG	A	5/15/2017	NWNE 6-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	ZEUS 149-93-33D-28H	34840	33025034860000	OG	LOC	4/26/2018	SWSE 33-149-93	ENERPLUS RESOURCES USA CORPORATION
MANDAREE	HORSE CAMP 3-16H	20243	33025012670000	OG	IA	7/15/2018	NWNE 16-149-93	PETROSHALE (US) INC.
MANDAREE	HORSE CAMP 102-16H	20244	33025012680000	OG	A	10/21/2011	NWNE 16-149-93	PETROSHALE (US) INC.
MANDAREE	HORSE CAMP 104-11H	33816	33025033290000	OG	A	2/11/2018	NENE 11-149-93	PETROSHALE (US) INC.
MANDAREE	HORSE CAMP 2-11H	20091	33025012370000	OG	IA	8/15/2018	NWNW 11-149-93	PETROSHALE (US) INC.
MANDAREE	HORSE CAMP 4-11H	33815	33025033280000	OG	A	2/2/2018	NENE 11-149-93	PETROSHALE (US) INC.
MANDAREE	HORSE CAMP WEST 2MBH	34990	33025035070000	Confidential	Confidential	Confidential	NWNW 11-149-93	PETROSHALE (US) INC.
MANDAREE	HORSE CAMP WEST 2TFH	34991	33025035080000	Confidential	Confidential	Confidential	NWNW 11-149-93	PETROSHALE (US) INC.
MANDAREE	SKUNK CREEK 1-24-25-16H3	30932	33025028940000	OG	A	4/15/2017	NENE 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	SKUNK CREEK 2-24-25-15H	19825	33025012020000	OG	A	9/17/2011	NWNE 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	SKUNK CREEK 2-24-25-16H	19827	33025012040000	OG	A	10/5/2011	NWNE 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	SKUNK CREEK 3-24-25-13H	20258	33025012740000	OG	A	4/15/2014	NENW 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	SKUNK CREEK 3-24-25-14H3	20259	33025012750000	OG	A	4/20/2014	NENW 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	TWO SHIELDS BUTTE 1-24-12-1H	30929	33025028910000	OG	A	1/6/2017	NENE 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	TWO SHIELDS BUTTE 2-24-12-1H3	19826	33025012030000	OG	A	9/18/2011	NWNE 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	TWO SHIELDS BUTTE 2-24-12-2H	18517	33025010110000	OG	A	9/24/2011	NWNE 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	TWO SHIELDS BUTTE 3-24-12-3H3	20257	33025012730000	OG	A	4/17/2014	NENW 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	TWO SHIELDS BUTTE 3-24-12-4H	18518	33025010120000	OG	A	4/12/2014	NENW 24-149-93	RIMROCK OIL & GAS WILLISTON LLC
MANDAREE	ALUSIA FOX 16-9H	17943	33025008920000	OG	A	10/28/2009	SESE 9-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BEAKS 36-35HW	32820	33025031910000	OG	A	4/4/2017	SENE 36-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BEAKS 36-35H	19289	33025011410000	OG	A	5/20/2011	SENE 36-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BEAKS 36-35HA	26432	33025022880000	OG	A	4/4/2017	SENE 36-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BEAKS 36-35HC	29852	33025027260000	OG	A	12/3/2015	SENE 36-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BEAKS 36-35HD	29851	33025027250000	OG	A	12/6/2015	SENE 36-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BEAKS 36-35HX	26430	33025022860000	OG	A	4/1/2017	SENE 36-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BEAKS 36-35HZ	29853	33025027270000	OG	A	12/15/2016	SENE 36-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BIRDSBILL 14-16H	18520	33025010130000	OG	A	4/23/2010	SESW 16-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	BUFFALO 1-36HC	20508	33025013240000	OG	A	5/9/2012	SESE 1-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	CARIBOU 33-34HDL	32677	33025031420000	OG	A	3/2/2017	SESE 32-150-93	WPX ENERGY WILLISTON, LLC
MANDAREE	CLARA 14-17H	18564	33025010190000	OG	A	4/8/2010	SESW 17-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	CORRAL 1-36HD	21609	33025014890000	OG	A	5/2/2012	SESE 1-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	CROSS 2-13H	18128	33053030250000	OG	A	11/23/2009	NWNE 13-149-94	WPX ENERGY WILLISTON, LLC
MANDAREE	ELM 19-18HQ	32231	33025030590000	OG	A	5/12/2018	SESE 19-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	FOX 14-8H	21232	33025014270000	OG	A	1/23/2012	SESW 8-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	INDEPENDENCE 2-35 HI	27711	33025024680000	OG	A	5/13/2014	NWNE 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	INDEPENDENCE 2-35HC	23021	33025017390000	OG	A	10/8/2012	NWNE 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	INDEPENDENCE 2-35HD	26519	33025022990000	OG	A	5/12/2014	NWNE 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	INDEPENDENCE 2-35HY	26517	33025022970000	OG	A	5/25/2014	NWNE 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	INDEPENDENCE 2-35HZ	26518	33025022980000	OG	A	5/23/2014	NWNE 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	JOSEPH EAGLE 19-18HD	30278	33025027990000	OG	NC	3/19/2018	SESE 19-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	JOSEPH EAGLE 19-18HZ	30277	33025027980000	OG	NC	3/7/2018	SESE 19-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	JOSEPH EAGLE 2-19H	20517	33025013260000	OG	A	10/10/2011	NENE 19-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	LION 18-19HEL	34960	33025035040000	Confidential	Confidential	Confidential	LOT4 7-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	LION 18-19HA	34397	33025034110000	Confidential	Confidential	Confidential	LOT4 7-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	LION 18-19HB	34399	33025034130000	Confidential	Confidential	Confidential	LOT4 7-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	LION 18-19HC	34401	33025034150000	Confidential	Confidential	Confidential	SESW 7-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	LION 18-19HW	34396	33025034100000	Confidential	Confidential	Confidential	LOT4 7-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	LION 18-19HX	34398	33025034120000	Confidential	Confidential	Confidential	LOT4 7-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	LION 18-19HY	34400	33025034140000	Confidential	Confidential	Confidential	SESW 7-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MABEL LEVINGS 14-23HA	26513	33025022960000	OG	A	4/25/2014	SWSW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MABEL LEVINGS 14-23HB	26511	33025022940000	OG	A	4/25/2014	SWSW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MABEL LEVINGS 14-23HE	33818	33025033300000	OG	A	11/4/2017	SWSW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MABEL LEVINGS 14-23HW	26512	33025022950000	OG	A	4/25/2014	SWSW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MABEL LEVINGS 14-23HX	26510	33025022930000	OG	A	4/25/2014	SWSW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MABEL LEVINGS 14-23HY	33819	33025033310000	OG	A	11/3/2017	SWSW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MARTIN FOX 20-17HA	23684	33025018470000	OG	A	9/28/2014	SESW 20-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MARTIN FOX 20-17HB	23682	33025018450000	OG	A	9/28/2014	SESW 20-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MARTIN FOX 20-17HC	23680	33025018430000	OG	A	2/19/2014	SESW 20-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MARTIN FOX 20-17HD	23678	33025018410000	OG	A	2/19/2014	SESW 20-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MARTIN FOX 20-17HF	28713	33025025980000	OG	A	10/1/2014	SESW 20-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MARTIN FOX 20-17HW	28712	33025025970000	OG	A	10/18/2014	SWSW 20-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	MARTIN FOX 20-17HX	23681	33025018440000	OG	A	9/28/2014	SESW 20-149-93	WPX ENERGY WILLISTON, LLC

MANDAREE	MARTIN FOX	20-17HZ	23679	33025018420000	OG	A	2/19/2014	SESW 20-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	NATHAN HALE	3-18H	17658	33025008350000	OG	A	4/8/2009	NENW 18-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	NORTH MABEL	2-35HB	35201	33025035440000	Confidential	Confidential	Confidential	NWNW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	NORTH MABEL	2-35HF	35199	33025035420000	Confidential	Confidential	Confidential	NWNW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	NORTH MABEL	2-35HS	35200	33025035430000	Confidential	Confidential	Confidential	NWNW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	NORTH MABEL	2-35HT	35198	33025035410000	Confidential	Confidential	Confidential	NWNW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	NORTH MABEL	2-35HW	35203	33025035460000	Confidential	Confidential	Confidential	NWNW 11-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	OTTER WOMAN	34-27HEL	34247	33025033880000	OG	A	7/27/2018	LOT2 5-148-93	WPX ENERGY WILLISTON, LLC
MANDAREE	OTTER WOMAN	34-27HG	33846	33025033370000	OG	A	8/1/2018	LOT2 5-148-93	WPX ENERGY WILLISTON, LLC
MANDAREE	OTTER WOMAN	34-27HP	33847	33025033380000	OG	A	7/30/2018	LOT2 5-148-93	WPX ENERGY WILLISTON, LLC
MANDAREE	OTTER WOMAN	35-36HG	34246	33025033870000	OG	A	7/24/2018	LOT2 5-148-93	WPX ENERGY WILLISTON, LLC
MANDAREE	OTTER WOMAN	35-36HU	34245	33025033860000	OG	A	7/22/2018	LOT2 5-148-93	WPX ENERGY WILLISTON, LLC
MANDAREE	RUBIA	16-24H	20033	33053033810000	OG	A	11/16/2011	SESE 24-149-94	WPX ENERGY WILLISTON, LLC
MANDAREE	SKUNK CREEK	23-14 HC	21269	33025014310000	OG	A	3/13/2012	SESE 23-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	TAT	15-1H	18396	33025009930000	OG	A	4/29/2010	SWSE 1-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	TAT {1922}	14-2H	18007	33025009080000	OG	A	4/15/2018	SESW 2-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	TEKAKWITHA	9-24H	17024	33025007160000	OG	A	3/15/2018	SESW 9-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	WICKER	34-27H	19267	33025011380000	OG	A	5/5/2011	SESW 34-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	WOLF CHIEF	27-34HB	26836	33025023330000	OG	A	2/20/2015	NENW 27-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	WOLF CHIEF	27-34HC	26837	33025023340000	OG	A	2/19/2015	NENW 27-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	WOLF CHIEF	27-34HD	26839	33025023360000	OG	A	4/21/2017	NENW 27-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	WOLF CHIEF	27-34HW	26835	33025023320000	OG	A	4/19/2017	NENW 27-149-93	WPX ENERGY WILLISTON, LLC
MANDAREE	WOLF CHIEF	27-34HZ	26838	33025023350000	OG	A	5/15/2017	NENW 27-149-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	FORT BERTHOLD	150-94-3B-10-10H	31454	33053070280000	OG	LOC	6/19/2018	LOT3 3-150-94	BRUIN E&P OPERATING, LLC
SPOTTED HORN	FORT BERTHOLD	150-94-3B-10-11H	31455	33053070290000	OG	LOC	6/19/2018	LOT3 3-150-94	BRUIN E&P OPERATING, LLC
SPOTTED HORN	FORT BERTHOLD	150-94-3B-10-12H	31456	33053070300000	OG	LOC	6/19/2018	LOT3 3-150-94	BRUIN E&P OPERATING, LLC
SPOTTED HORN	FORT BERTHOLD	150-94-3B-10-13H	31457	33053070310000	OG	LOC	6/19/2018	LOT3 3-150-94	BRUIN E&P OPERATING, LLC
SPOTTED HORN	FORT BERTHOLD	150-94-3B-10-1H	20086	33053033900000	OG	A	1/15/2012	LOT 4 3-150-94	BRUIN E&P OPERATING, LLC
SPOTTED HORN	FORT BERTHOLD	150-94-3B-10-3H	31458	33053070320000	OG	LOC	6/19/2018	LOT3 3-150-94	BRUIN E&P OPERATING, LLC
SPOTTED HORN	ARCTIC	150-94-36BH	30007	33053064750000	OG	A	4/11/2017	NWNW 36-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	ARIKARA	150-94-32D-29H TF	21539	33053037860000	OG	A	5/15/2018	SWSE 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	ARTSY	150-94-05BH TF	33669	33053080670000	Confidential	Confidential	Confidential	NWNW 5-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	AUDREY RABBITHEAD HALL	33-11H	19278	33053032010000	OG	A	12/15/2017	NWNW 33-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	BADGER	150-94-04B-09H TF	29529	33053063230000	OG	A	8/13/2016	SWSE 33-151-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	BEAR DEN	150-94-32D-29H	33193	33053078650000	OG	A	1/24/2018	SWSE 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	BEEBLE	150-94-11C-12H	32885	33053077000000	OG	A	7/23/2017	NWSW 11-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	BERKELEY	150-94-05BH	33662	33053080650000	Confidential	Confidential	Confidential	LOT4 5-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	BLOOMSBURY	150-94-05BH	33670	33053080680000	Confidential	Confidential	Confidential	NWNW 5-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	BOBCAT	150-94-04A-09H TF	24752	33053047160000	OG	A	1/17/2014	SWSE 33-151-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	COURAGE	150-94-06A-18H	26608	33053053320000	OG	A	6/7/2014	LOT2 6-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	CRANE	150-94-33C-28H	33486	33053079860000	OG	A	9/29/2017	LOT4 4-149-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	FOX	150-94-04A-09H	24753	33053047170000	OG	A	9/15/2017	SWSE 33-151-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	FT. BERTHOLD	150-94-32C-29H	33291	33053079230000	OG	A	2/16/2018	SESW 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	GRACE	150-94-06B-07H	23542	33053043120000	OG	A	2/16/2013	LOT3 6-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	HALL #5-11H		20981	33053036390000	OG	A	1/24/2014	LOT4 5-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	HIDATSA	150-94-32C-29H	21537	33053037840000	OG	A	3/15/2018	SESW 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	HONOR	150-94-06B-18H TF	23541	33053043110000	OG	A	6/7/2014	LOT3 6-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	LADYBUG	150-94-11C-12H-TF	32886	33053077010000	OG	A	7/23/2017	NWSW 11-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	MANDAN	150-94-32C-29H TF	21536	33053037830000	OG	A	3/15/2018	SESW 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	MANDAREE	150-94-32C-29H TF	33135	33053078480000	OG	A	2/16/2018	SESW 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	MHA	150-94-32D-29H TF	33192	33053078640000	OG	A	1/24/2018	SWSE 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	MINK	150-94-04B-09H TF	29531	33053063250000	OG	A	8/13/2016	SWSE 33-151-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	MUSKRAT	150-94-04B-09H	29528	33053063220000	OG	A	4/1/2016	SWSE 33-151-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	PRAIRIE DOG	150-94-04A-09H	23178	33053042030000	OG	A	12/20/2013	SWSE 33-151-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	PRIDE	150-94-06A-18H TF	26609	33053053330000	OG	A	9/23/2014	LOT2 6-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	RACCOON	150-94-04B-09H	29530	33053063240000	OG	A	4/1/2016	SWSE 33-151-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	RED TIPPED ARROW	33-11H	18281	33053030480000	OG	A	8/15/2018	NWNW 33-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	SPEEDY	150-94-05BH TF	33663	33053080660000	Confidential	Confidential	Confidential	LOT 4 5-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	TAT	150-94-32D-29H	21538	33053037850000	OG	A	3/15/2018	SWSE 32-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	WASP	150-94-11C-12H	32887	33053077020000	OG	A	4/15/2018	NWSW 11-150-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	WHOOPING	150-94-33C-28H-TF2	33487	33053079870000	OG	A	9/29/2017	LOT4 4-149-94	ENERPLUS RESOURCES USA CORPORATION
SPOTTED HORN	BEAR DEN	04-20H	19157	33053031840000	OG	A	3/4/2011	SESE 20-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	103-21H	21688	33053038230000	OG	A	9/18/2012	NWNE 21-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	104-2116H	21689	33053038240000	OG	A	9/7/2012	NWNE 21-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	19-2116H	20577	33053035230000	OG	A	9/7/2012	NWNE 21-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	25-16H	23268	33053042230000	OG	A	6/28/2013	SESW 16-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	8-1621H	23270	33053042250000	OG	A	7/13/2013	SESW 16-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	05-31H	19341	33053032210000	OG	A	10/6/2011	SESE 31-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	07-17H	19170	33053031860000	OG	A	1/6/2011	SESE 17-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	100-2017H	23063	33053041720000	OG	A	8/7/2013	SESE 20-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	101-2019H	23062	33053041710000	OG	A	8/12/2013	SESE 20-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	102-1708H	23066	33053041750000	OG	A	5/30/2013	SESE 17-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	108-1708H	23064	33053041730000	OG	A	5/23/2013	SESE 17-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	17-16H	23267	33053042220000	OG	A	7/26/2013	SESW 16-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	18-21H	20578	33053035240000	OG	A	9/11/2012	NWNE 21-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	20-1708H	23065	33053041740000	OG	A	6/5/2013	SESE 17-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	23-2019H	23061	33053041700000	OG	A	8/16/2013	SESE 20-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR DEN	24-1621H	23269	33053042240000	OG	A	11/15/2017	SESW 16-150-94	EOG RESOURCES, INC.
SPOTTED HORN	BEAR CHASE	1MBH	35269	33053086770000	Confidential	Confidential	Confidential	NENW 30-150-94	PETROSHALE (US) INC.
SPOTTED HORN	BEAR CHASE	1TFH	35270	33053086780000	Confidential	Confidential	Confidential	NENW 30-150-94	PETROSHALE (US) INC.
SPOTTED HORN	BEAR CHASE	2MBH	35271	33053086790000	Confidential	Confidential	Confidential	NENW 30-150-94	PETROSHALE (US) INC.

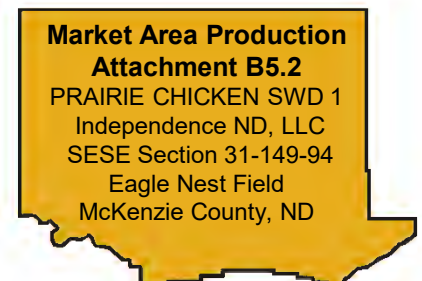
SPOTTED HORN CHASE 21-30H	17197	33053028700000	OG	A	11/8/2008	NENW 30-150-94	PETROSHALE (US) INC.
SPOTTED HORN DAILEY 4-12/13H	21521	33053037770000	OG	A	8/15/2018	LOT1 12-150-95	QEP ENERGY COMPANY
SPOTTED HORN DAILEY 4-12-13T2H	30288	33053066050000	OG	A	7/16/2015	LOT1 12-150-95	QEP ENERGY COMPANY
SPOTTED HORN DAILEY 4-12-13TH	30290	33053066070000	OG	A	7/25/2015	LOT1 12-150-95	QEP ENERGY COMPANY
SPOTTED HORN DAILEY 6-12-13BH	30287	33053066040000	OG	A	7/29/2015	LOT1 12-150-95	QEP ENERGY COMPANY
SPOTTED HORN DAILEY 7-12-13BH	30289	33053066060000	OG	A	7/20/2015	LOT1 12-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 1-2-1BH	28931	33053061220000	OG	A	4/30/2015	SWNW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 1-2-1T3H	31533	33053070720000	OG	A	2/18/2017	SWSW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 1-2-1TH	28933	33053061240000	OG	A	5/3/2015	SWNW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 2-2-1BH	28932	33053061230000	OG	A	5/1/2015	SWNW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 2-2-1THR	31535	33053070740000	OG	A	2/14/2017	SWSW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 3-2-1BHR	31536	33053070750000	OG	A	2/11/2017	SWSW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 3-2-1TH	31531	33053070700000	OG	A	2/11/2017	SWSW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 4-2-1BHR	31534	33053070730000	OG	A	2/19/2017	SWSW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 5-2/1H	21331	33053037210000	OG	A	1/22/2012	SWNW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 5-2-1BH	31532	33053070710000	OG	A	2/21/2017	SWSW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 6-2-1BH	31690	33053071400000	OG	A	2/14/2017	SWSW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN FOREMAN 6-2-1TH	29629	33053063510000	OG	A	4/25/2015	SWNW 2-150-95	QEP ENERGY COMPANY
SPOTTED HORN HENDERSON 4-25H	17254	33053028820000	OG	IA	5/15/2018	NWNW 25-150-95	QEP ENERGY COMPANY
SPOTTED HORN JONES 4-24H	17266	33053028850000	OG	A	5/15/2018	LOT 4 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN LEVANG 4-13H	17251	33053028800000	OG	A	10/14/2008	NWNW 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 4-25-24T2H	30710	33053067180000	OG	A	2/26/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 4-25-24TH	30708	33053067160000	OG	A	7/15/2017	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 4-36-1T2H	30906	33053068010000	OG	A	3/13/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 4-36-1TH	30908	33053068030000	OG	A	3/11/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 4-36H	17260	33053028830000	OG	A	10/27/2008	LOT 1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 5-25-24TH	30712	33053067200000	OG	A	2/22/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 5-36-1TH	30904	33053067990000	OG	A	2/29/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 7-25-24BH	30707	33053067150000	OG	A	5/15/2018	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 7-36-1BH	30909	33053068040000	OG	A	3/8/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 8-25-24BH	30709	33053067170000	OG	A	2/27/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 8-36-1BH	30907	33053068020000	OG	A	3/15/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 9-25-24BH	30711	33053067190000	OG	A	2/24/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN STATE 9-36-1BH	30905	33053068000000	OG	A	3/4/2016	LOT1 36-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 1-13-12BH	32495	33053074970000	OG	A	5/31/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 1-13-12TH	32494	33053074960000	OG	A	6/5/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 1-24-25TH	30583	33053066850000	OG	A	4/6/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 13-12-7-18LL	32497	33053074990000	OG	A	5/31/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 2-13-12TH	32402	33053074520000	OG	A	7/15/2018	LOT10 1-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 2-24-25BH	30584	33053066860000	OG	A	4/11/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 2-24-25TH	30581	33053066830000	OG	A	4/15/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 24-25-19-30BH	33158	33053078630000	OG	A	4/2/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 3-13-12BH	32401	33053074510000	OG	A	7/15/2018	LOT10 1-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 3-13-12T2H	32404	33053074540000	OG	IA	9/15/2018	LOT10 1-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 3-13-12TH	32406	33053074560000	OG	A	10/28/2016	LOT10 1-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 3-24-25BH	30582	33053066840000	OG	A	4/18/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 3-24-25TH	34210	33053082670000	OG	A	4/14/2018	LOTS 24-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 4-13-12BH	32403	33053074530000	OG	A	11/5/2016	LOT10 1-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 4-13-12TH	32496	33053074980000	OG	A	6/2/2018	SESE 13-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 4-24-25BH	34209	33053082660000	OG	A	4/17/2018	LOTS 24-150-95	QEP ENERGY COMPANY
SPOTTED HORN TIPI V 5-13-12BH	32405	33053074550000	OG	A	10/31/2016	LOT10 1-150-95	QEP ENERGY COMPANY
SPOTTED HORN VEGAS 1-1-36TH	34122	33053082290000	OG	LOC	10/11/2017	NENE 12-149-95	QEP ENERGY COMPANY
SPOTTED HORN VEGAS 1-36-6-31LL	33036	33053077950000	OG	LOC	9/23/2018	NENE 12-149-95	QEP ENERGY COMPANY
SPOTTED HORN VEGAS 2-1-36BH	34123	33053082300000	OG	LOC	10/11/2017	NENE 12-149-95	QEP ENERGY COMPANY
SPOTTED HORN VEGAS 2-1-36TH	34124	33053082310000	OG	LOC	10/11/2017	NENE 12-149-95	QEP ENERGY COMPANY
SPOTTED HORN VEGAS 3-1-36BH	34125	33053082320000	OG	LOC	10/11/2017	NENE 12-149-95	QEP ENERGY COMPANY
SPOTTED HORN VEGAS 3-1-36TH	34216	33053082690000	OG	LOC	10/27/2017	NENE 12-149-95	QEP ENERGY COMPANY
SPOTTED HORN VEGAS 4-1-36BH	34215	33053082680000	OG	LOC	10/27/2017	NENE 12-149-95	QEP ENERGY COMPANY
SPOTTED HORN BEAR DEN 24-13H2	20359	33053034590000	OG	A	10/15/2011	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN EMMA OWNER 23-14HA	30666	33053067090000	OG	A	3/10/2016	SWNE 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN EMMA OWNER 23-14HB	29445	33053062880000	OG	A	2/27/2016	SWNE 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN EMMA OWNER 23-14HC	29447	33053062900000	OG	A	3/4/2016	SWNE 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN EMMA OWNER 23-14HD	29448	33053062910000	OG	A	3/5/2016	SWNE 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN EMMA OWNER 23-14HW	29449	33053062920000	OG	A	3/6/2016	SWNE 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN EMMA OWNER 23-14HX	29446	33053062890000	OG	A	2/29/2016	SWNE 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GERALD HALE 33-28H	20556	33053035170000	OG	A	12/7/2011	SESE 33-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GOOD VOICE 34-27HB	27070	33053055030000	OG	A	11/10/2014	SESE 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GOOD VOICE 34-27HD	27068	33053055010000	OG	A	11/10/2014	SESE 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GOOD VOICE 34-27HF	30052	33053064920000	Confidential	Confidential	Confidential	SESE 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GOOD VOICE 34-27HU	30051	33053064910000	Confidential	Confidential	Confidential	SESE 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GOOD VOICE 34-27HZ	27069	33053055020000	OG	A	11/10/2014	SESE 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 25-36HF	34586	33053084070000	Confidential	Confidential	Confidential	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 25-36HIL	34590	33053084110000	Confidential	Confidential	Confidential	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 25-36HW	34589	33053084100000	Confidential	Confidential	Confidential	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 25-36HX	34587	33053084080000	Confidential	Confidential	Confidential	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 25-36HY	34585	33053084060000	Confidential	Confidential	Confidential	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 25HA	34588	33053084090000	Confidential	Confidential	Confidential	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 24-13HA	32683	33053076170000	OG	A	3/20/2017	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 24-13HG	32684	33053076180000	OG	A	3/17/2017	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN GRIZZLY 24-13HW	32687	33053076210000	OG	A	3/23/2017	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN KATE SOLDIER 23-14HZ	22897	33053041230000	OG	A	12/2/2012	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC

SPOTTED HORN	KYW 27-34H	18948	33053031520000	OG	A	10/25/2010	NWNW 27-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	LEAD WOMAN 23-14HA	34647	33053084410000	Confidential	Confidential	Confidential	NWNW 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	LEAD WOMAN 23-14HQ	34648	33053084420000	Confidential	Confidential	Confidential	NWNW 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	LEAD WOMAN 23-14HUL	34646	33053084400000	Confidential	Confidential	Confidential	NWNW 26-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE 24-13 H2Z	28982	33025026200000	OG	A	9/5/2015	LOT1 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE 24-13HD	28983	33025026210000	OG	A	9/7/2015	LOT1 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE 24-13HY	28984	33025026220000	OG	A	9/10/2015	LOT1 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE 24-13HZ	28981	33025026190000	OG	A	9/3/2015	LOT1 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE SOUTH 24-13HI	33822	33025033320000	OG	A	4/22/2018	LOTS 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE SOUTH 25-36HC	33320	33025032580000	OG	A	10/22/2017	LOTS 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE SOUTH 25-36HD	33322	33025032600000	OG	A	10/27/2017	LOTS 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE SOUTH 25-36HT	33321	33025032590000	OG	A	10/24/2017	LOTS 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MANDAREE SOUTH 25-36HZ	33323	33025032610000	OG	A	10/30/2017	LOTS 30-150-93	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MORSETTE 35-26H	18803	33053031280000	OG	A	10/12/2010	NWSE 35-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MORSETTE 35-26HD	25174	33053048610000	OG	A	9/4/2014	NWSE 35-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MORSETTE 35-26HX	25175	33053048620000	OG	A	9/7/2014	NWSE 35-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	MORSETTE 35-26HZ	25173	33053048600000	OG	A	9/5/2014	NWSE 35-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	NATHAN HALE 4-25H	17978	33053030070000	OG	A	1/29/2010	NWNW 25-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	PATRICIA KELLY 2-1HB	23639	33053043420000	OG	A	3/12/2013	SWNE 3-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	SWEET GRASS WOMAN 22-15HB	22629	33053040550000	OG	A	7/29/2012	NWNW 27-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	SWEET GRASS WOMAN 22-15HC	34791	33053084920000	Confidential	Confidential	Confidential	SESE 22-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	SWEET GRASS WOMAN 22-15HD	34789	33053084900000	Confidential	Confidential	Confidential	SESE 22-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	SWEET GRASS WOMAN 22-15HY	34792	33053084930000	Confidential	Confidential	Confidential	SESE 22-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	SWEET GRASS WOMAN 22-15HZ	34790	33053084910000	Confidential	Confidential	Confidential	SESE 22-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	YOUNG BIRD 34-27HA	34741	33053084840000	Confidential	Confidential	Confidential	SWSW 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	YOUNG BIRD 34-27HE	34739	33053084820000	Confidential	Confidential	Confidential	SWSW 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	YOUNG BIRD 34-27HQL	34974	33053085490000	Confidential	Confidential	Confidential	SWSW 34-150-94	WPX ENERGY WILLISTON, LLC
SPOTTED HORN	YOUNG BIRD 34-27HW	34740	33053084830000	Confidential	Confidential	Confidential	SWSW 34-150-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	GROUPE 149-94-36D-25H	21754	33025015110000	OG	A	7/12/2012	LOT3 3-148-94	ENERPLUS RESOURCES USA CORPORATION
SQUAW CREEK	HALL 23-21H	19881	33053033440000	Confidential	Confidential	Confidential	NENW 23-149-94	ENERPLUS RESOURCES USA CORPORATION
SQUAW CREEK	POINTER 149-94-23AH	21301	33053037110000	OG	A	8/20/2017	NWNE 23-149-94	ENERPLUS RESOURCES USA CORPORATION
SQUAW CREEK	TERRIER 149-94-23AH-TF	21300	33053037100000	Confidential	Confidential	Confidential	NWNE 23-149-94	ENERPLUS RESOURCES USA CORPORATION
SQUAW CREEK	WALLEYE 149-94-36D-25H	21755	33025015120000	Confidential	Confidential	Confidential	LOT3 3-148-94	ENERPLUS RESOURCES USA CORPORATION
SQUAW CREEK	MANDAREE 101-20H	21332	33053037220000	OG	A	9/2/2012	NWNW 20-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 1-10H	18464	33053030820000	OG	A	9/1/2010	NWNW 10-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 10-05H	18411	33053030690000	OG	A	10/2/2010	LOT4 5-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 102-05H	21003	33053036420000	OG	A	10/3/2011	LOT4 5-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 110-05H	26778	33053053930000	OG	A	9/21/2014	LOT3 5-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 12-07H	19004	33053031640000	OG	A	11/19/2010	SESE 7-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 134-05H	26769	33053053910000	OG	A	10/1/2014	LOT4 5-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 135-05H	26777	33053053920000	OG	A	9/23/2014	LOT3 5-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 16-04H	20601	33053035340000	OG	A	5/9/2012	SESE 4-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 17-05H	26779	33053053940000	OG	A	10/1/2014	LOT3 5-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 2-09H	18927	33053031480000	OG	A	8/8/2010	NWNW 9-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 24-0706H	32513	33053075020000	OG	A	12/5/2016	SESE 7-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 28-05H	26768	33053053900000	OG	A	9/28/2014	LOT4 5-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 30-0706H	32512	33053075010000	OG	A	12/5/2016	SESE 7-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 31-0706H	32514	33053075030000	OG	A	12/3/2016	SESE 7-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 4-15H	18697	33053031140000	OG	A	8/13/2010	SESE 15-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 5-16H	18774	33053031240000	OG	A	10/16/2010	NWNW 16-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 6-20H	18908	33053031420000	OG	A	9/23/2010	NWNW 20-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 7-17H	18594	33053030980000	OG	A	9/27/2010	NWNW 17-149-94	EOG RESOURCES, INC.
SQUAW CREEK	MANDAREE 9-04H	19426	33053032380000	OG	A	8/15/2018	SESE 4-149-94	EOG RESOURCES, INC.
SQUAW CREEK	CALF WOMEN 1-16	15689	33053026190000	OG	A	4/15/2017	SENE 16-149-94	LELAND OIL & GAS, LLC
SQUAW CREEK	ARIKARA 3W-3H-BK	30873	33053067850000	OG	A	7/3/2015	SWSW 3-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	FBIR PACKINEAU 14X-4A HTF	34188	33053082480000	OG	NC	2/16/2018	SWSW 4-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	FBIR PACKINEAU 14X-4B HBK	34189	33053082490000	OG	NC	2/1/2018	SWSW 4-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	FBIR PACKINEAU 14X-4E HBK	34187	33053082470000	OG	NC	3/3/2018	SWSW 4-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	FBIR PACKINEAU 14X-4F HTF	34190	33053082500000	OG	NC	1/13/2018	SWSW 4-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	HIDATSA 3W-2H-TF	30518	33053066670000	OG	A	6/30/2015	SWSW 3-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	MANDAN 3W-1H-BK	30517	33053066660000	OG	A	6/27/2015	SWSW 3-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	NATION 3W-4H-TF	30874	33053067860000	OG	A	7/5/2015	SESW 3-149-94	MISSOURI RIVER RESOURCES ND, LLC
SQUAW CREEK	BENSON 3HC	34613	33053084250000	Confidential	Confidential	Confidential	SESE 34-150-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	BENSON 3HZ	34612	33053084240000	Confidential	Confidential	Confidential	SESE 34-150-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	BENSON 16-3H	21445	33053037530000	OG	A	3/17/2012	SESE 3-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	BLUE BUTTES 3-21H	20995	33053036410000	OG	A	3/22/2012	NENW 21-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	CORN STALK 20HC	23216	33053042080000	OG	A	1/8/2013	NWSW 20-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	CORN STALK 20HD	23215	33053042070000	OG	A	1/11/2013	NWSW 20-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	HONEY LOCUST 18-19HIL	35446	33053087360000	Confidential	Confidential	Confidential	NWNE 18-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	KALE BAD BRAVE 19-18HB	27477	33053056080000	OG	A	1/23/2015	LOT 4 19-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	KALE BAD BRAVE 19-18HW	27478	33053056090000	OG	A	1/25/2015	LOT 4 19-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	KALE BAD BRAVE 19-18HX2	27480	33053056110000	OG	A	1/26/2015	LOT4 19-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	LINSETH 13-12HW	21217	33053036930000	OG	A	9/9/2012	LOT4 13-149-95	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	LUCY LONE FIGHT 16-22H	20711	33053035650000	OG	A	9/28/2011	SESE 22-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	MANDAREE WARRIOR 14-11H	20320	33053034370000	OG	A	5/25/2012	SESW 14-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	MINOT GRADY 26-35HC	35300	33053086920000	Confidential	Confidential	Confidential	SESE 23-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	MINOT GRADY 26-35HD	35298	33053086900000	Confidential	Confidential	Confidential	SESE 23-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	MINOT GRADY 26-35HF	35296	33053086880000	Confidential	Confidential	Confidential	SESE 23-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	MINOT GRADY 26-35HT	35299	33053086910000	Confidential	Confidential	Confidential	SESE 23-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	MINOT GRADY 26-35HY	35301	33053086930000	Confidential	Confidential	Confidential	SESE 23-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	MINOT GRADY 26-35HZ	35297	33053086890000	Confidential	Confidential	Confidential	SESE 23-149-94	WPX ENERGY WILLISTON, LLC

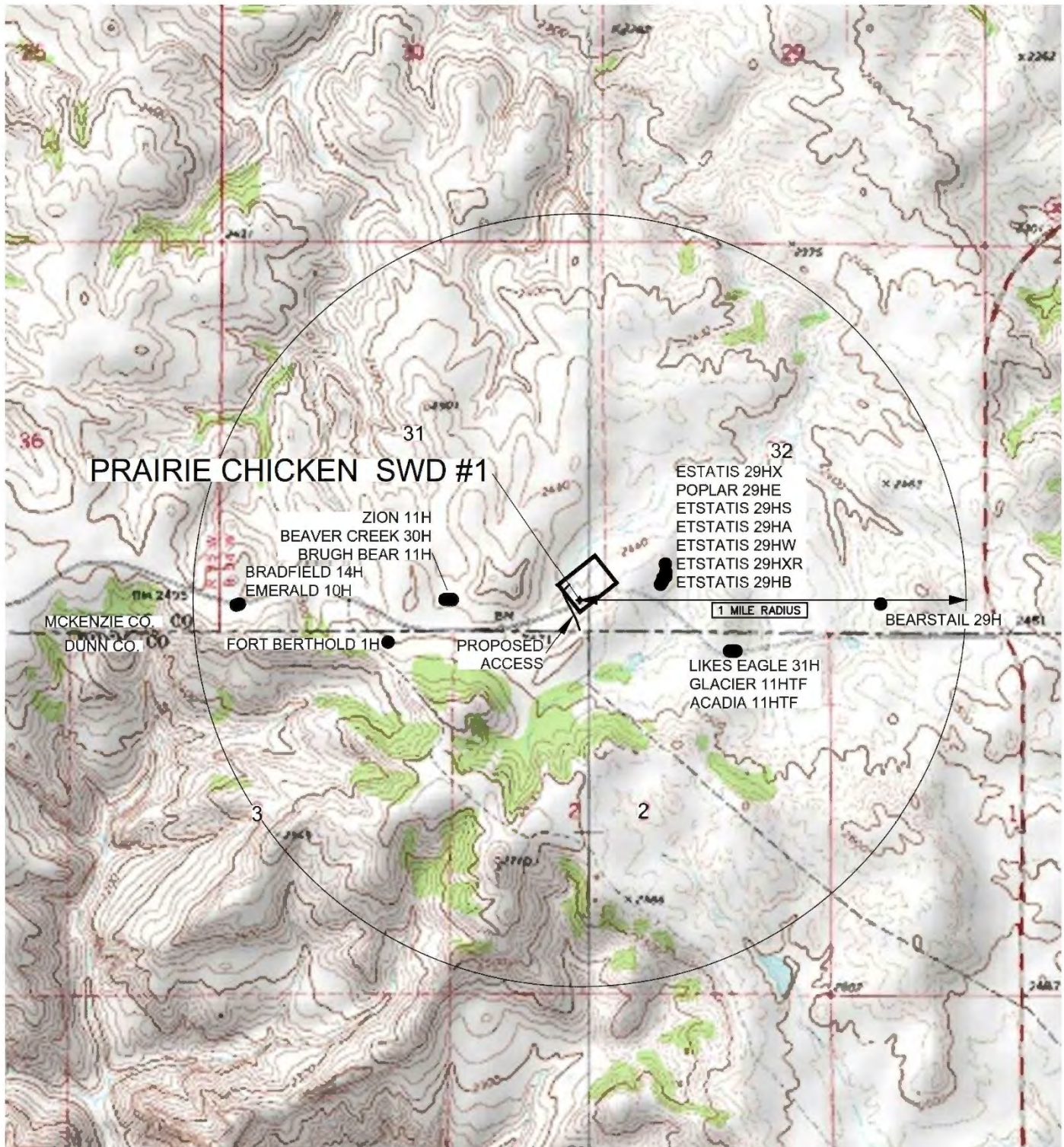
SQUAW CREEK	MINOT GRADY 26-35HWL	35457	33053087380000	Confidential	Confidential	Confidential	SESE 23-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	PLENTY SWEET GRASS 18-19HC	20603	33053035360000	OG	A	1/16/2012	NWNE 18-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	PLENTY SWEET GRASS 18-19HD	34928	33053085400000	Confidential	Confidential	Confidential	NWNE 18-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	PLENTY SWEET GRASS 18-19HF	34927	33053085390000	Confidential	Confidential	Confidential	NWNE 18-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	PLENTY SWEET GRASS 18-19HZ	34929	33053085410000	Confidential	Confidential	Confidential	NWNE 18-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	RACHEL WOLF 22HC	31938	33053072560000	OG	A	7/26/2017	SWSE 22-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	RACHEL WOLF 27-34HC	31941	33053072590000	OG	A	7/26/2017	SWSE 22-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	RACHEL WOLF 27-34HG	31939	33053072570000	OG	A	7/27/2017	SWSE 22-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	RACHEL WOLF 27-34HS	31942	33053072600000	OG	A	7/26/2017	SWSE 22-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	RACHEL WOLF 27-34HY	31940	33053072580000	OG	A	7/26/2017	SWSE 22-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	SPOTTED HORN 26-35H	20238	33053034210000	OG	A	9/15/2017	NENW 26-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	SPOTTED HORN 26-35HA	35012	33053085540000	Confidential	Confidential	Confidential	NWNW 26-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	SPOTTED HORN 26-35HUL	35240	33053086660000	Confidential	Confidential	Confidential	NWNW 26-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	SPOTTED HORN 26-35HW	35013	33053085550000	Confidential	Confidential	Confidential	NWNW 26-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	SPOTTED HORN 27-34HD	35011	33053085530000	Confidential	Confidential	Confidential	NWNW 26-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	STEVENSON 15-8H	21063	33053036550000	OG	A	1/8/2012	SWSE 8-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	STEVENSON 15-8HD	24351	33053045760000	OG	A	4/26/2013	SWSE 8-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	WOLF 27-34H	19973	33053033670000	OG	A	7/24/2011	NENW 27-149-94	WPX ENERGY WILLISTON, LLC
SQUAW CREEK	FETTIG 24-22H	18766	33053031220000	OG	A	11/20/2010	SESW 22-149-94	XTO ENERGY INC.

Last Reported Monthly Production Within the Area of the Proposed PPRAIRIE CHICKEN SWD 1****					
Field	Date	BBLS Oil	BBLS Water	MCF Gas	Wells Producing
Eagle Nest-Bakken	Jun-18	501,319	405,075	716,843	110
Mandaree-Bakken	Jun-18	426,418	317,519	505,359	96
Spotted Horn-Bakken	Jun-18	830,222	678,429	1,371,932	123
Squaw Creek-Bakken	Jun-18	124,114	131,246	296,434	49
Squaw Creek-Madison	Jun-18	55	118	50	1
		1,882,128	1,532,387	2,890,618	379

**** Generally, producing wells within the Spotted Horn, Squaw Creek, Mandaree, and Eagle Nest Fields



QUAD MAP
 INDEPENDENCE ND LLC
 301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763
 PRAIRIE CHICKEN SWD #1
 373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE
 SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



© 2018, INTERSTATE ENGINEERING, INC.

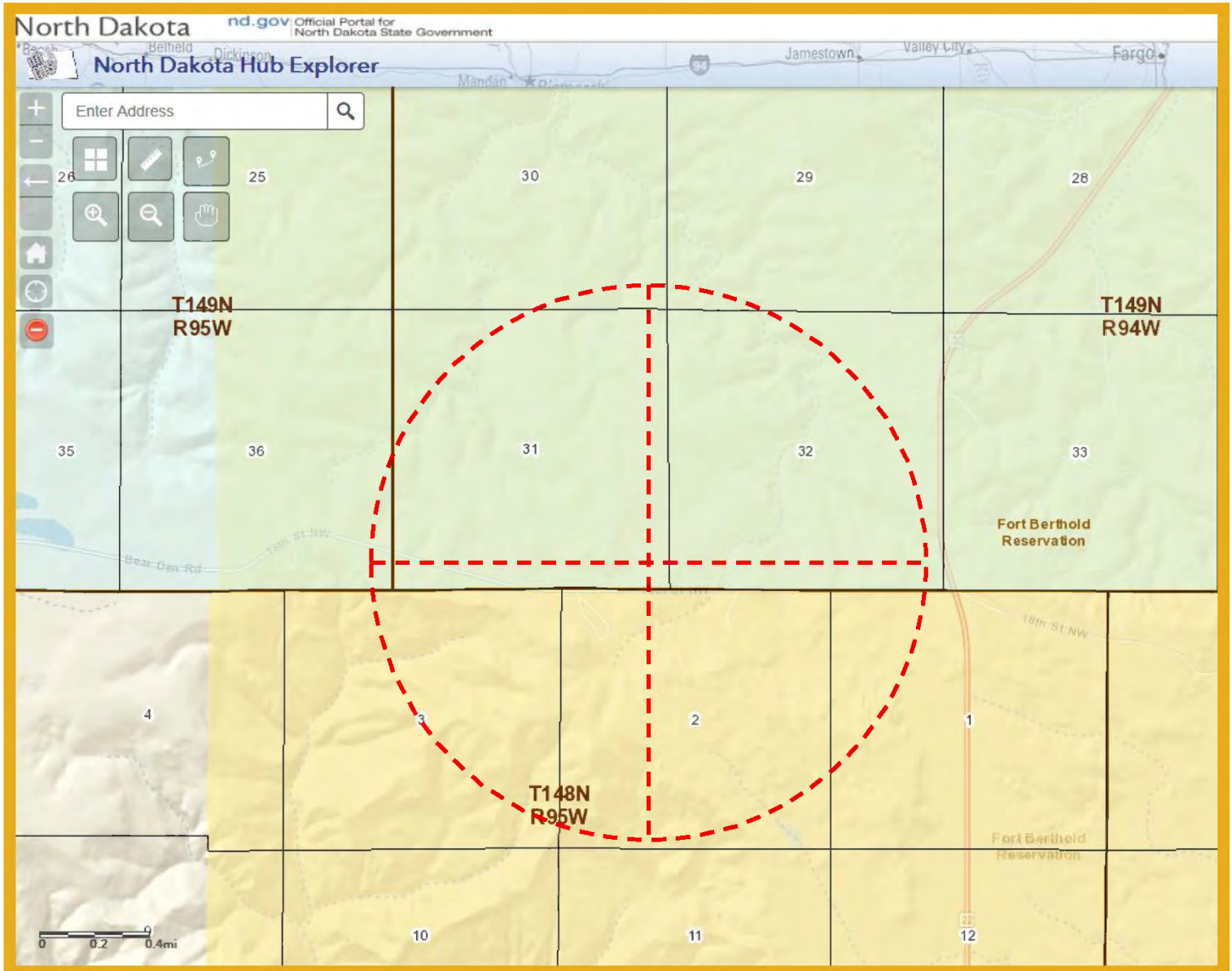
5/10
SHEET NO.



Interstate Engineering, Inc.
 P.O. Box 266
 141 2nd Avenue Southwest
 Belfield, North Dakota 58622
 Ph (701) 575-2247
 Fax (701) 575-2251
 www.interstateeng.com
 Other offices in Minnesota, Montana and South Dakota

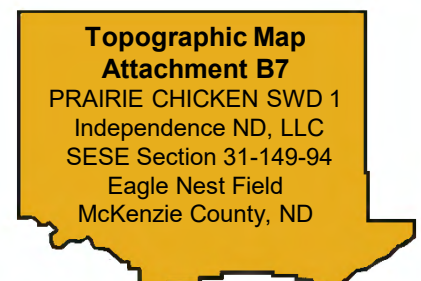
INDEPENDENCE ND LLC
 QUAD MAP
 SECTION 31, T149N, R94W
 MCKENZIE COUNTY, NORTH DAKOTA
 Drawn By: J.D.M. Project No.: S18-09-01
 Checked By: R.L.P. Date: JULY 2018

**Topographic Map
 Attachment B6
 PRAIRIE CHICKEN SWD 1
 Independence ND, LLC
 SESE Section 31-149-94
 Eagle Nest Field
 McKenzie County, ND**



 1-Mile Area of Review

The North Dakota Hub Explorer information portal does not reveal a surficial or sensitive aquifer, abandoned mine, wind turbines, wellhead protection area, solid waste or special waste facility within a mile of the proposed PRAIRIE CHICKEN SWD 1 disposal well. Additionally, during its freshwater investigation Independence ND, LLC found no evidence of a hazardous waste treatment, storage, or disposal facility or quarry in the 1-mile AOR.



C. CORRECTIVE ACTION PLAN AND WELL DATA

There are thirteen completed wells and one cancelled permit within the 0.50-mile area of review. They include:

1. BEAVER CREEK 149-94-31D-30H TF (NDIC WF#-24111)—This is a horizontal oil & gas well with a surface location in the SWSE of Section 31, Township 149N, Range 94W and having coordinates of 47.675426, -102.757816. The well was spud on 2/15/2017 and drilled to a Total Depth of 21,417'. It has 9-5/8" surface casing set to 2,438' and 7" production casing set to 11,700'. This well's horizontal lateral was completed in the Bakken Pool on 10/31/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top to approximately 5,296' KB. The completion report for this well has been included as Attachment C1.

No corrective action is required.

2. BRUGH BEAR 2-11H (WF#- 24112)—This is a horizontal oil & gas well with a surface location in the SWSE of Section 31, Township 149N, Range 94W and having coordinates of 47.67545715, -102.7574109. The well is on confidential status and there is no completion data yet available but a Scout Ticket has been included as Attachment C2.

Corrective action-Independence ND, LLC will submit a subsequent report that details the cement isolation of this wellbore and a completion report when they become available.

3. ZION 148-95-02B-11H (NDIC WF#-24113)—This is a horizontal oil & gas well with a surface location in the SWSE of Section 31, Township 149N, Range 94W and having coordinates of 47.67542814, -102.7576137. The well was spud on 2/18/2017 and drilled to a Total Depth of 21,205'. It has 9-5/8" surface casing set to 2,448' and 7" production casing set to 11,524'. This well's horizontal lateral was completed in the Bakken Pool on 10/31/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top to approximately 5,170' KB. The completion report for this well has been included as Attachment C3.

No corrective action is required.

4. ETSTATIS 32-29HS (NDIC WF#-29878)—This is a horizontal oil & gas well with a surface location in the SWSW of Section 32, Township 149N, Range 94W and having coordinates of 47.67634419, -102.7456015. The well was spud on 11/4/2016 and completed to a Total Depth of 21,870'. It has 9-5/8" surface casing set to 2,244' and 7" production casing set to 11,828'. This well's horizontal lateral was completed in the Bakken Pool on 5/22/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top to approximately 3,156' KB. The completion report for this well has been included as Attachment C4.

No corrective action is required.

5. ETSTATIS 32-29HB (NDIC WF#-29879)—This is a horizontal oil & gas well with a surface location in the SWSW of Section 32, Township 149N, Range 94W and having coordinates of 47.67626479, -102.7456329. The well was spud on 11/4/2016 and completed to a Total Depth of 21,854'. It has 9-5/8" surface casing set to 2,240' and 7" production casing set to 11,806'. This well's horizontal lateral was completed in the Bakken Pool on 5/30/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top of approximately 4,404' KB. The completion report for this well has been included as Attachment C5.

No corrective action is required.



6. ETSTATIS 32-29HX (NDIC WF#-29880)—This is a horizontal oil & gas well with a surface location in the SWSW of Section 32, Township 149N, Range 94W and having coordinates of 47.67618539, -102.7456644. The well was spud on 11/3/2016 and completed to a Total Depth of 21,750'. It has 9-5/8" surface casing set to 2,245' and 7" production casing set to 11,648'. This well's horizontal lateral was completed in the Bakken Pool on 2/10/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC indicates cement isolation of the vertical wellbore to approximately 3,852' KB. This well was plugged and abandoned on 2/10/2017. The Plugging Report for this well has been as Attachment C6.

No corrective action is required.

7. ETSTATIS 32-29HA (NDIC WF#-29881)—This is a horizontal oil & gas well with a surface location in the SWSW of Section 32, Township 149N, Range 94W and having coordinates of 47.67610599, -102.7456958. The well was spud on 11/2/2016 and completed to a Total Depth of 21,652'. It has 9-5/8" surface casing set to 2,241' and 7" production casing set to 11,590'. This well's horizontal lateral was completed in the Bakken Pool on 5/28/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top of approximately 2,622' KB. The completion report for this well has been included as Attachment C7.

No corrective action is required.

8. ETSTATIS 32-29HW (NDIC WF#-29882)—This is a horizontal oil & gas well with a surface location in the SWSW of Section 32, Township 149N, Range 94W and having coordinates of 47.67602659, -102.7457272. The well was spud on 11/1/2016 and completed to a Total Depth of 21,664'. It has 9-5/8" surface casing set to 2,240' and 7" production casing set to 11,583'. This well's horizontal lateral was completed in the Bakken Pool on 5/25/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top of approximately 2,688' KB. The completion report for this well has been included as Attachment C8.

No corrective action is required.

9. POPLAR 32-29HE (NDIC WF#-31189)—This is a horizontal oil & gas well with a surface location in the SWSW of Section 32, Township 149N, Range 94W and having coordinates of 47.67594719, -102.7457586. The well was spud on 10/31/2016 and completed to a Total Depth of 21,698'. It has 9-5/8" surface casing set to 2,262' and 7" production casing set to 11,648'. This well's horizontal lateral was completed in the Bakken Pool on 5/19/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top of approximately 2,766' KB. The completion report for this well has been included as Attachment C9.

No corrective action is required.

10. ETSTATIS 32-29HXR (NDIC WF#-33344)—This is a horizontal oil & gas well with a surface location in the SWSW of Section 32, Township 149N, Range 94W and having coordinates of 47.67642358, -102.7455701. The well was spud on 2/16/2017 and completed to a Total Depth of 21,728'. It has 9-5/8" surface casing set to 2,425' and 7" production casing set to 11,689'. This well's horizontal lateral was completed in the Bakken Pool on 6/3/2017 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top of approximately 2,438' KB. The completion report for this well has been included as Attachment C10

No corrective action is required.



11. LIKES EAGLE #2-31H (NDIC WF#-20917)—This is a horizontal oil & gas well with a surface location in the LOT2 of Section 2, Township 148N, Range 95W and having coordinates of 47.673461, -102.741762. The well was spud on 2/7/2012 and drilled to a Total Depth of 20,815. It has 9-5/8" surface casing set to 2,390' and 7" production casing set to 11,432'. This well's horizontal lateral was completed in the Bakken Pool on 4/24/2012 and is separated from the injection zone by multiple confining zones composed of shale or salt that eliminate potential communication. The CBL of this well on file with the NDIC has an indicated cement top of approximately 2,784' KB. The cement is ratty variable and course and the EPA should confirm isolation. The completion report for this well has been included as Attachment C11.

No corrective action is required.

12. GLACIER 148-95-02A-11H TF (NDIC WF#-22574)—This is a horizontal oil & gas well with a surface location in the LOT2 of Section 2, Township 148N, Range 95W and having coordinates of 47.67346209, -102.7419654. The well is on confidential status and there is no completion data yet available but a Scout Ticket has been included as Attachment C12.

Corrective action-Independence ND, LLC will submit a subsequent report that details the cement isolation of this wellbore and a completion report when they become available.

13. ACADIA 148-95-02A-11H TF (NDIC WF#-22575)—This is a horizontal oil & gas well with a surface location in the LOT1 of Section 2, Township 148N, Range 95W and having coordinates of 47.67346077, -102.7415592. The well is on confidential status and there is no completion data yet available but a Scout Ticket has been included as Attachment C13.

Corrective action-Independence ND, LLC will submit a subsequent report that details the cement isolation of this wellbore and a completion report when they become available.

14. FORT BERTHOLD 148-95-3A-10-1H (NDIC WF#-20446)—This is a horizontal oil & gas permit with a surface location in the LOT1 of Section 3, Township 148N, Range 95W and having coordinates of 47.67380, -102.760962. This permit has been cancelled and a Scout Ticket has been included as Attachment C14.

No corrective action is required.

D. MAPS AND CROSS SECTION OF USDWs (N/A to Class II wells)



**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

RECEIVED**NOV 20 2017**

Well File No.
24111

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

ND Oil & Gas Div.

Designate Type of Completion					
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well	☐ Added Horizontal Leg	☐ Extended Horizontal Leg
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:		
Well Name and Number Beaver Creek 149-94-31D-30H TF			Spacing Unit Description Sections 30 & 31, T149N R94W		
Operator Enerplus Resources USA Corporation		Telephone Number (720) 279-5500		Field Eagle Nest	
Address 950 17th Street, Suite 2200			Pool Bakken		
City Denver	State CO	Zip Code 80202	Permit Type ☐ Wildcat ☒ Development ☐ Extension		

LOCATION OF WELL

At Surface	441 F S L	2190 F E L	Qtr-Qtr SWSE	Section 31	Township 149 N	Range 94 W	County McKenzie
Spud Date February 15, 2017	Date TD Reached April 20, 2017	Drilling Contractor and Rig Number Stoneham 17		KB Elevation (Ft) 2508	Graded Elevation (Ft) 2482		
Type of Electric and Other Logs Run (See Instructions)							

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	16" H40	0	80	26	65			50	Surface
Vertical Hole	Surface	9-5/8" J55	0	2438	13.5	36			188	Surface
Vertical Hole	Intermediate	7" P-110	0	11700	8.75	32			967	378
Sidetrack1	Liner	4-1/2" P110	10772	21386	6	13.5			658	11076

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD Ft) Top Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perfd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Sidetrack1	21417	Perforations	11788 21113			10/31/2017			

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11788 to 21113						Name of Zone (If Different from Pool Name)		
Date Well Completed (SEE INSTRUCTIONS) October 31, 2017		Producing Method Flowing		Pumping-Size & Type of Pump		Well Status (Producing or Shut-In) Producing		
Date of Test 11/12/2017	Hours Tested 24	Choke Size 24 /64	Production for Test	Oil (Bbls) 604	Gas (MCF) 541	Water (Bbls) 555	Disposition of Gas Flared	
Flowing Tubing Pressure (PSI)		Flowing Casing Pressure (PSI) 870		Calculated 24-Hour Rate	Oil (Bbls) 604	Gas (MCF) 541	Water (Bbls) 555	Gas-Oil Ratio 895

Completion Report-24111
Attachment C1 (3 pages)
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 10/31/2017	Stimulated Formation Bakken	Top (Ft) 11788	Bottom (Ft) 21113	Stimulation Stages 39	Volume 11047232	Volume Units Gallons
Type Treatment Sand Frac	Acid % 15	Lbs Proppant 9850090	Maximum Treatment Pressure (PSI) 9160		Maximum Treatment Rate (BBLS/Min) 62.7	
Details 39 Stages; 9,850,090 lbs 30/50 and 100 mesh white sand; 11,047,232 gal fluid.						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

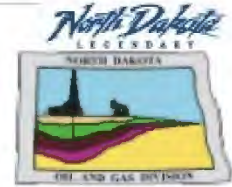
--	--

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address Sbunten@enerplus.com	Date 11/13/2017
	Signature 	Printed Name Sean Bunten

Related Links

[Premium Services](#)[Code Definitions](#)[Digital & Image Logs](#)[Map This Well](#)

Get Well Scout Ticket Data

Enter File Number: Or Enter API Number: NDIC File No: **24112** API No: **33-053-04491-00-00** County: **MCKENZIE**Well Type: **ON CONFIDENTIAL STATUS**Location: **SWSE 31-149-94** Footages: **441 FSL 2090 FEL** Latitude: **47.675457** Longitude: **-102.757410**Current Operator: **ENERPLUS RESOURCES USA CORPORATION**Original Operator: **ENERPLUS RESOURCES USA CORPORATION**Current Well Name: **BRUGH BEAR 2-11H**Original Well Name: **BRUGH BEAR 2-11H**Elevation: **2481 GL**Field: **EAGLE NEST**

Other Wells on The Same Multi-Well Pad:

NDIC File No: **24111** Well Name: **BEAVER CREEK 149-94-31D-30H TF** Well Confidential: **No** Formation Tops Available: **Yes**NDIC File No: **24113** Well Name: **ZION 148-95-02B-11H** Well Confidential: **No** Formation Tops Available: **No**[\[DMR Home\]](#) [\[Disclaimer\]](#) [\[Privacy\]](#) [\[Security\]](#) [\[Feedback\]](#) [\[My Account Information\]](#)**Scout Ticket-24112
Attachment C2**PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)



Well File No.
24113

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion					
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well	☐ Added Horizontal Leg	☐ Extended Horizontal Leg
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:		
Well Name and Number Zion 148-95-02B-11H			Spacing Unit Description Sections 2 & 11, T148N R95W		
Operator Enerplus Resources USA Corporation		Telephone Number (720) 279-5500		Field Eagle Nest	
Address 950 17th Street, Suite 2200			Pool Bakken		
City Denver	State CO	Zip Code 80202	Permit Type ☐ Wildcat ☒ Development ☐ Extension		

LOCATION OF WELL

At Surface 441 F S L	2140 F E L	Qtr-Qtr SWSE	Section 31	Township 149 N	Range 94 W	County Mckenzie
Spud Date February 18, 2017	Date TD Reached April 5, 2017	Drilling Contractor and Rig Number Stoneham 17		KB Elevation (Ft) 2508	Graded Elevation (Ft) 2482	
Type of Electric and Other Logs Run (See Instructions)						

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	String Type	Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	16" H40	0	80	26	65			50	Surface
Vertical Hole	Surface	9-5/8" J55	0	2448	13.5	36			188	Surface
Vertical Hole	Intermediate	7" P-110	0	11524	8.75	32			955	1543
Lateral1	Liner	4-1/2" P110	10717	21185	6	13.5			560	10743

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD Ft) Top Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perfd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	21205	Perforations	11600 20402			10/31/2017			

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11600 to 20402						Name of Zone (If Different from Pool Name)				
Date Well Completed (SEE INSTRUCTIONS) October 31, 2017			Producing Method Flowing		Pumping-Size & Type of Pump		Well Status (Producing or Shut-In) Producing			
Date of Test 11/12/2017	Hours Tested 24	Choke Size 24 /64	Production for Test		Oil (Bbls) 695	Gas (MCF) 668	Water (Bbls) 372	Oil Gravity-API (Corr.) 43.6 °	Disposition of Gas Flared	
Flowing Tubing Pressure (PSI) 870		Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate	Oil (Bbls) 695	Gas (MCF) 668	Water (Bbls) 372	Gas-Oil Ratio 961		

**Completion Report-24113
Attachment C3 (3 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 10/31/2017	Stimulated Formation Bakken	Top (Ft) 11600	Bottom (Ft) 20402	Stimulation Stages 38	Volume 7349403	Volume Units Gallons
Type Treatment Sand Frac	Acid % 15	Lbs Proppant 9304380	Maximum Treatment Pressure (PSI) 9192		Maximum Treatment Rate (BBLS/Min) 68.0	
Details 38 Stages with 9,304,380 lbs 20/40 and 100 mesh white sand, 7,349,403 gal of fluid.						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

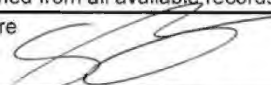
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

--	--

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address Sbunten@enerplus.com	Date 11/14/2017
	Signature 	Printed Name Sean Bunten



WELL COMPLETION OR RECOMPLETION REPORT - FORM 6

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

RECEIVED

JUN 23 2017

Well File No.
29878

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

ND Oil & Gas Div.

Designate Type of Completion			
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:
Well Name and Number Etstatis 32-29HS		Spacing Unit Description Sections 32 & 29, T149N-R94W	
Operator WPX Energy Williston, LLC		Telephone Number (539) 573-8958	
Address 3500 One Williams Center, M-D 38		Field Eagle Nest	
City Tulsa	State OK	Zip Code 74172	Pool 1B Three Forks <i>Bukken</i>
Permit Type ☐ Wildcat ☒ Development ☐ Extension			

LOCATION OF WELL

At Surface 797 F S L	819 F W L	Qtr-Qtr SWSW	Section 32	Township 149 N	Range 94 W	County McKenzie
Spud Date November 4, 2016	Date TD Reached November 21, 2016	Drilling Contractor and Rig Number Nabors B-09		KB Elevation (Ft) 2470	Graded Elevation (Ft) 2445	
Type of Electric and Other Logs Run (See Instructions) MWD, CBL; Casing Inspection, Gamma and CCL combined						

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	20	0	105	24	51			270	0
Surface Hole	Surface	9-5/8	0	2244	13.5	36			555	0
Vertical Hole	Intermediate	7	0	11828	8-3/4	32			925	3706
Lateral1	Liner	4-1/2	10865	21864	6	13.5			722	

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD,Ft) Top Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	21870	Perforations	11888 21688	12151					

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11,888' - 21,688'						Name of Zone (If Different from Pool Name) 1B Three Forks			
Date Well Completed (SEE INSTRUCTIONS) May 22, 2017			Producing Method Flowing		Pumping-Size & Type of Pump		Well Status (Producing or Shut-In) Producing		
Date of Test 06/11/2017	Hours Tested 24	Choke Size 26 /64	Production for Test		Oil (Bbls) 1597	Gas (MCF) 1742	Water (Bbls) 1257	Oil Gravity-API (Corr.) 42.0 °	Disposition of Gas Sold
Flowing Tubing Pressure (PSI) 0		Flowing Casing Pressure (PSI) 2800		Calculated 24-Hour Rate	Oil (Bbls) 1597	Gas (MCF) 1742	Water (Bbls) 1257	Gas-Oil Ratio 1091	

Completion Report-29878
Attachment C4 (3 pages)
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 04/19/2017	Stimulated Formation 1B Three Forks	Top (Ft) 11888	Bottom (Ft) 21688	Stimulation Stages 41	Volume 5874802	Volume Units Gallons
Type Treatment Sand Frac	Acid %	Lbs Proppant 6092160	Maximum Treatment Pressure (PSI) 9341		Maximum Treatment Rate (BBLS/Min) 84.3	
Details Stage 1 Sleeves @ 21,764 - 21,784						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

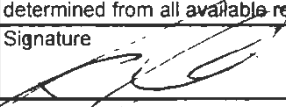
ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

Stimulation data is attached.

Location of well:

At top of production interval: 467' FSL 2289'FWL SESW Sec. 32 T149N-R94W

At TD: 318' FNL 2266'FWL NENW Sec. 29 T149N-R94W

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address Laura.Koval@WPXenergy.com		Date 06/15/2017
	Signature 	Printed Name Laura Koval	Title Regulatory Specialist

**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

Well File No.
29879

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion			
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other
Well Name and Number Etstatis 32-29HB		Spacing Unit Description Sections 32 & 29, T149N-R94W	
Operator WPX Energy Williston, LLC		Telephone Number (539) 573-8958	
Address 3500 One Williams Center, M-D 38		Field Eagle Nest	
City Tulsa		State OK	Zip Code 74172
Permit Type ☐ Wildcat ☒ Development ☐ Extension			

LOCATION OF WELL

At Surface 768 F S L	811 F W L	Qtr-Qtr SWSW	Section 32	Township 149 N	Range 94 W	County McKenzie
Spud Date November 4, 2016	Date TD Reached December 5, 2016	Drilling Contractor and Rig Number Nabors B-09		KB Elevation (Ft) 2470	Graded Elevation (Ft) 2445	
Type of Electric and Other Logs Run (See Instructions) MWD, CBL; Casing Inspection, Gamma and CCL combined						

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	20	0	105	24	51			270	0
Surface Hole	Surface	9-5/8	0	2240	13.5	36			655	0
Vertical Hole	Intermediate	7	0	11806	8-3/4	32			925	4462
Lateral1	Liner	4-1/2	10811	21849	6	13.5			725	

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD Ft) Top Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	21854	Perforations	11863 21657	11877					

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11,863' - 21,657'						Name of Zone (If Different from Pool Name) Middle Bakken		
Date Well Completed (SEE INSTRUCTIONS) May 30, 2017			Producing Method Flowing		Pumping-Size & Type of Pump		Well Status (Producing or Shut-In) Producing	
Date of Test 06/11/2017	Hours Tested 24	Choke Size 24 /64	Production for Test		Oil (Bbls) 2038	Gas (MCF) 2106	Water (Bbls) 1019	Disposition of Gas Sold
Flowing Tubing Pressure (PSI) 0		Flowing Casing Pressure (PSI) 2750		Calculated 24-Hour Rate	Oil (Bbls) 2038	Gas (MCF) 2106	Water (Bbls) 1019	Gas-Oil Ratio 1033

Completion Report-29879
Attachment C5
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 04/19/2017	Stimulated Formation Middle Bakken	Top (Ft) 11863	Bottom (Ft) 21657	Stimulation Stages 41	Volume 5773600	Volume Units Gallons
Type Treatment Sand Frac	Acid %	Lbs Proppant 6092229	Maximum Treatment Pressure (PSI) 9368		Maximum Treatment Rate (BBLS/Min) 82.5	
Details Stage 1 Sleeves @ 21,731 - 21,751						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

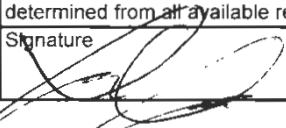
ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

Stimulation data is attached.

Location of well:

At top of production interval: 308' FSL 2525'FEL SWSE Sec. 32 T149N-R94W

At TD: 251' FNL 2511'FWL NWNE Sec. 29 T149N-R94W

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address Laura.Koval@WPXenergy.com		Date 06/29/2017
	Signature 	Printed Name Laura Koval	Title Regulatory Specialist

PLUGGING REPORT - FORM 7

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2467 (03-2004)

Received

APR 27 2017

ND Oil & Gas Division

Weil File No. 29880

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Operator WPX Energy Williston, LLC		Telephone Number (539) 573-8958	Well Name and Number Etstatis 32-29HX
Address 3500 One Williams Center, M-D 38			Field Eagle Nest
City Tulsa	State OK	Zip Code 74172	Deepest Pool Penetrated Three Forks

LOCATION

At Surface		739 F S L		803 F W L		Qtr-Qtr SWSW	Section 32	Township 149 N	Range 94 W	County McKenzie
Bottom Hole Location		253 F N L		1128 F W L		Qtr-Qtr NWNW	Section 29	Township 149 N	Range 94 W	County McKenzie
Spud Date November 3, 2016	Date TD Reached December 25, 2016	KB Elevation 2471	TD (Feet) 21750 MD 11284		TVD		No. of DSTs (See Back)	Directional Survey Run? ☐ No ☒ Yes		
Type of Electric and Other Logs Run (See Instructions) MWD, CBL; Casing Inspection, Gamma and CCL combined							Was Well Cored? ☒ No ☐ Yes List Intervals:			

Weight of Fluid Between Plugs (Lbs/Gal) 9.58		Name of Field Inspector Present During Plugging Allen Christensen
Date Well Plugged February 10, 2017	Drilling Contractor and Rig Number Nabors B-09	Plugging Contractor(s) Nabors B-09

CASING RECORD (Report all strings set in well)

Casing Size (Inches)	Measured Depth Set (Feet)	Amount Pulled	Hole Size (Inches)	Weight (Lbs/Ft)	Sacks Cement	Top of Cement
20	1052270		24		270	
9-5/8	2270		13.5		540	
7	11692		8-3/4		740	
4.5	21751		6		500	

ATTEMPTED COMPLETION DATA (If not previously reported)

Perforations	Holes Per Foot	Swab/Prod. Potential (Oil/Water)	Acid, Frac, Sg, Etc.	Amount and Kind of Material Used

PLUGGING RECORD

[illegible]

Plugging Report-29880

Attachment C6

PRAIRIE CHICKEN SWD 1

Independence ND, LLC

SESE Section 31-149-94

Eagle Nest Field

Eagle Nest Field
McKenzie County, ND

**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

RECEIVED**JUN 30 2017**

Well File No.
29881

ND Oil & Gas Div

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion			
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:
Well Name and Number Etstatis 32-29HA		Spacing Unit Description Sections 32 & 29, T149N-R94W	
Operator WPX Energy Williston, LLC		Telephone Number (539) 573-8958	
Address 3500 One Williams Center, M-D 38		Field Eagle Nest	
City Tulsa		State OK	
Zip Code 74172		Permit Type ☐ Wildcat ☒ Development ☐ Extension	

LOCATION OF WELL

At Surface 710 F S L	795 F W L	Qtr-Qtr SWSW	Section 32	Township 149 N	Range 94 W	County McKenzie
Spud Date November 2, 2016	Date TD Reached January 7, 2017	Drilling Contractor and Rig Number Nabors B-09		KB Elevation (Ft) 2470	Graded Elevation (Ft) 2445	
Type of Electric and Other Logs Run (See Instructions) MWD, CBL; Casing Inspection, Gamma and CCL combined						

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	String Type	Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	20	0	105	24	51			270	0
Surface Hole	Surface	9-5/8	0	2241	13.5	36			565	0
Vertical Hole	Intermediate	7	0	11590	8-3/4	32			902	2740
Lateral1	Liner	4-1/2	10670	21647	6	13.5			645	

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD,Ft) Top Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	21652	Perforations	11652 21469	11844					

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11,652 - 21,469'						Name of Zone (If Different from Pool Name) Middle Bakken				
Date Well Completed (SEE INSTRUCTIONS) May 28, 2017			Producing Method flowing		Pumping-Size & Type of Pump			Well Status (Producing or Shut-In) Producing		
Date of Test 06/07/2017	Hours Tested 24	Choke Size 22 /64	Production for Test		Oil (Bbls) 2016	Gas (MCF) 2255	Water (Bbls) 1190	Oil Gravity-API (Corr.) 42.0 °	Disposition of Gas Sold	
Flowing Tubing Pressure (PSI) 0		Flowing Casing Pressure (PSI) 3250		Calculated 24-Hour Rate	Oil (Bbls) 2016	Gas (MCF) 2255	Water (Bbls) 1190	Gas-Oil Ratio 1119		

**Completion Report-29881
Attachment C7 (3 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 04/30/2017	Stimulated Formation Middle Bakken	Top (Ft) 11652	Bottom (Ft) 21469	Stimulation Stages 41	Volume 5659283	Volume Units Gallons
Type Treatment Sand Frac	Acid %	Lbs Proppant 6092148	Maximum Treatment Pressure (PSI) 9492		Maximum Treatment Rate (BBLS/Min) 81.6	
Details Stage 1 Sleeves @ 21,546 - 21,567						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

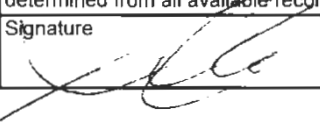
ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

Stimulation data is attached.

Location of well:

At top of production interval: 301' FSL 1689'FWL SESW Sec. 32 T149N-R94W

At TD: 252' FNL 1722'FWL NENW Sec. 29 T149N-R94W

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address Laura.Koval@WPXenergy.com		Date 06/27/2017
	Signature 	Printed Name Laura Koval	Title Regulatory Specialist

**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

RECEIVED**JUN 23 2017**

Well File No.
29882

ND Oil & Gas Div.

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion			
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:
Well Name and Number Etstatis 32-29HW		Spacing Unit Description Sections 32 & 29, T149N-R94W	
Operator WPX Energy Williston, LLC		Telephone Number (539) 573-8958	
Address 3500 One Williams Center, M-D 38		Field Eagle Nest	
City Tulsa		Pool Middle Bakken	
State OK		Zip Code 74172	
Permit Type ☐ Wildcat ☒ Development ☐ Extension			

LOCATION OF WELL

At Surface 681 F S L	787 F W L	Qtr-Qtr SWSW	Section 32	Township 149 N	Range 94 W	County McKenzie
Spud Date November 1, 2016	Date TD Reached January 20, 2017	Drilling Contractor and Rig Number Nabors B-09		KB Elevation (Ft) 2470	Graded Elevation (Ft) 2445	
Type of Electric and Other Logs Run (See Instructions) MWD, CBL; Casing Inspection, Gamma and CCL combined						

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	String Type	Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	20	0	105	24	51			270	0
Surface Hole	Surface	9-5/8	0	2240	13.5	36			565	0
Vertical Hole	Intermediate	7	0	11583	8-3/4	32			900	2840
Lateral1	Liner	4-1/2	10930	21657	6	13.5			640	

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD Ft)	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	21664	Perforations	11644 - 21483	11653					

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11,644' - 21,483'						Name of Zone (If Different from Pool Name) Middle Bakken		
Date Well Completed (SEE INSTRUCTIONS) May 25, 2017			Producing Method Flowing		Pumping-Size & Type of Pump		Well Status (Producing or Shut-In) Producing	
Date of Test 06/11/2017	Hours Tested 24	Choke Size 26 /64	Production for Test		Oil (Bbls) 1886	Gas (MCF) 1896	Water (Bbls) 1133	Disposition of Gas Sold
Flowing Tubing Pressure (PSI) 0		Flowing Casing Pressure (PSI) 2800		Calculated 24-Hour Rate	Oil (Bbls) 1886	Gas (MCF) 1896	Water (Bbls) 1133	Gas-Oil Ratio 1005

Completion Report-29882
Attachment C8 (3 pages)
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 04/30/2017	Stimulated Formation Middle Bakken	Top (Ft) 11644	Bottom (Ft) 21483	Stimulation Stages 61	Volume 8322626	Volume Units Gallons
Type Treatment Sand Frac	Acid %	Lbs Proppant 9087608	Maximum Treatment Pressure (PSI) 9464		Maximum Treatment Rate (BBLS/Min) 81.5	
Details Stage 1 Sleeves @ 21,558 - 21,578						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

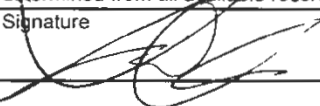
ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

Stimulation data is attached.

Location of well:

At top of production interval: 277' FSL 552'FWL SWSW Sec. 32 T149N-R94W

At TD: 318' FNL 574'FWL NWNW Sec. 29 T149N-R94W

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records. Signature 	Email Address Laura.Koval@WPXenergy.com		Date 06/22/2017
	Printed Name Laura Koval	Title Regulatory Specialist	

**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

RECEIVED

JUN 23 2017

Well File No.
31189

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

ND Oil & Gas Div.

Designate Type of Completion			
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:
Well Name and Number Poplar 32-29HE		Spacing Unit Description Sections 32 & 29, T149N-R94W Sec 29, 30, 31, + 32	
Operator WPX Energy Williston, LLC		Telephone Number (539) 573-8958	
Address 3500 One Williams Center, M-D 38		Field Eagle Nest	
City Tulsa		State OK	Zip Code 74172
		Permit Type ☐ Wildcat ☒ Development ☐ Extension	

LOCATION OF WELL

At Surface 652 F S L	779 F WL	Qtr-Qtr SWSW	Section 32	Township 149 N	Range 94 W	County McKenzie
Spud Date October 31, 2016	Date TD Reached February 1, 2017	Drilling Contractor and Rig Number Nabors B-09		KB Elevation (Ft) 2468	Graded Elevation (Ft) 2445	
Type of Electric and Other Logs Run (See Instructions) MWD, CBL; Casing Inspection, Gamma and CCL combined						

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	String Type	Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	20	0	105	24	51			270	0
Surface Hole	Surface	9-5/8	0	2262	13.5	36			655	0
Vertical Hole	Intermediate	7	0	11648	8-3/4	32			416	3352
Lateral1	Liner	4-1/2	10848	21678	6	13.5			645	

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD Ft)		Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	21698	Perforations	11708	21502	12032					

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11,708' - 21,502'						Name of Zone (If Different from Pool Name) 1B Three Forks				
Date Well Completed (SEE INSTRUCTIONS) May 19, 2017			Producing Method flo		Pumping-Size & Type of Pump			Well Status (Producing or Shut-In) Producing		
Date of Test 05/26/2017	Hours Tested 24	Choke Size 20 /64	Production for Test		Oil (Bbls) 1308	Gas (MCF) 1178	Water (Bbls) 974	Oil Gravity-API (Corr.) 42.0 °	Disposition of Gas Sold	
Flowing Tubing Pressure (PSI) 0		Flowing Casing Pressure (PSI) 2550		Calculated 24-Hour Rate	Oil (Bbls) 1308	Gas (MCF) 1178	Water (Bbls) 974	Gas-Oil Ratio 901		

**Completion Report-31189
Attachment C9 (3 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 04/30/2017	Stimulated Formation 1B Three Forks	Top (Ft) 11708	Bottom (Ft) 21502	Stimulation Stages 41	Volume 5871962	Volume Units Gallons
Type Treatment Sand Frac	Acid %	Lbs Proppant 6067882	Maximum Treatment Pressure (PSI) 9449		Maximum Treatment Rate (BBLS/Min) 80.7	
Details Stage 1 Sleeves @ 21,576 - 21,596						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

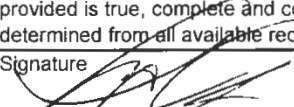
ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

Stimulation data is attached.

Location of well:

At top of production interval: 310' FSL 2'FWL SWSW Sec. 32 T149N-R94W

At TD: 254' FNL 10'FEL NENE Sec. 30 T149N-R94W

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address Laura.Koval@WPXenergy.com		Date 06/15/2017
	Signature 	Printed Name Laura Koval	Title Regulatory Specialist

**WELL COMPLETION OR RECOMPLETION REPORT - FORM 6**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)

RECEIVED**JUL 10 2017**Well File No. **29879 33344**

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

ND Oil & Gas Div.

Designate Type of Completion			
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:
Well Name and Number Etstatis 32-29HXR		Spacing Unit Description Sections 32 & 29, T149N-R94W	
Operator WPX Energy Williston, LLC		Telephone Number (539) 573-8958	
Address 3500 One Williams Center, M-D 38		Field Eagle Nest	
City Tulsa		Pool Bakken	
State OK		Zip Code 74172	
Permit Type ☐ Wildcat ☒ Development ☐ Extension			

LOCATION OF WELL

At Surface	826 F S L	827 F WL	Qtr-Qtr SWSW	Section 32	Township 149 N	Range 94 W	County McKenzie
Spud Date February 16, 2017	Date TD Reached March 2, 2017	Drilling Contractor and Rig Number Nabors B-09		KB Elevation (Ft) 2471	Graded Elevation (Ft) 2445		
Type of Electric and Other Logs Run (See Instructions) MWD, CBL; Casing Inspection, Gamma and CCL combined							

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	String Type	Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	20	0	105	24	51			270	0
Surface Hole	Surface	9-5/8	0	2425	13.5	36			560	0
Vertical Hole	Intermediate	7	0	11689	8-3/4	32			917	2632
Lateral1	Liner	4-1/2	10837	21723	6	13.5			640	

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD Ft) Top Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	21728	Perforations	11749 21543	12011					

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11,749' - 21,543'						Name of Zone (If Different from Pool Name) 1B Three Forks				
Date Well Completed (SEE INSTRUCTIONS) June 3, 2017			Producing Method Flowing		Pumping-Size & Type of Pump		Well Status (Producing or Shut-In) Producing			
Date of Test 06/11/2017	Hours Tested 24	Choke Size 24 /64	Production for Test		Oil (Bbls) 1700	Gas (MCF) 1762	Water (Bbls) 1452	Oil Gravity-API (Corr.) 42.0 °	Disposition of Gas Sold	
Flowing Tubing Pressure (PSI) 0		Flowing Casing Pressure (PSI) 2550		Calculated 24-Hour Rate	Oil (Bbls) 1700	Gas (MCF) 1762	Water (Bbls) 1452	Gas-Oil Ratio 1036		

Completion Report-33344
Attachment C10
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

Drill Stem Test

Drill Stem Test								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 04/19/2017	Stimulated Formation Three Forks	Top (Ft) 11749	Bottom (Ft) 21543	Stimulation Stages 41	Volume 5768614	Volume Units Gallons
Type Treatment Sand Frac	Acid %	Lbs Proppant 6087760	Maximum Treatment Pressure (PSI) 9267		Maximum Treatment Rate (BBLS/Min) 79.5	
Details Stage 1 Sleeves @ 21,622 - 21,642						

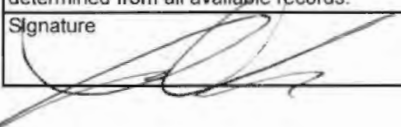
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

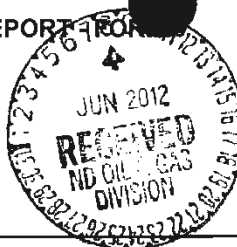
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

Stimulation data is attached.		
Location of well: At top of production interval: 322' FSL 1206' FWL SWSW Sec. 32 T149N-R94W At TD: 250' FNL 1197' FWL NWNW Sec. 29 T149N-R94W		
I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address Laura.Koval@WPXenergy.com	Date 07/03/2017
Signature 	Printed Name Laura Koval	Title Regulatory Specialist

**WELL COMPLETION OR RECOMPLETION REPORT**

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 2468 (04-2010)



Well File No.
20917

PLEASE READ INSTRUCTIONS BEFORE FILLING OUT FORM.
PLEASE SUBMIT THE ORIGINAL AND ONE COPY.

Designate Type of Completion			
☒ Oil Well	☐ EOR Well	☐ Recompletion	☐ Deepened Well
☐ Gas Well	☐ SWD Well	☐ Water Supply Well	☐ Other:
Well Name and Number LIKES EAGLE #2-31H		Spacing Unit Description Sec 2 T148N R95W and Sec 11	
Operator Enerplus Resources USA Corporation		Telephone Number (720) 279-5500	
Address 950 17th Street, Suite 2200		Field Eagle Nest	
City Denver		State CO	Zip Code 80202
Permit Type ☐ Wildcat ☒ Development ☐ Extension			

LOCATION OF WELL

At Surface 250 F N L	1320 F E L	Qtr-Qtr NENE	Section 2	Township 148 N	Range 95 W	County Dunn
Spud Date February 7, 2012	Date TD Reached March 14, 2012	Drilling Contractor and Rig Number Precision 560		KB Elevation (Ft) 2441	Graded Elevation (Ft) 2467	
Type of Electric and Other Logs Run (See Instructions) CBL/GR/CCL surface to 10615'						

CASING & TUBULARS RECORD (Report all strings set in well)

Well Bore	Type	String Size (Inch)	Top Set (MD Ft)	Depth Set (MD Ft)	Hole Size (Inch)	Weight (Lbs/Ft)	Anchor Set (MD Ft)	Packer Set (MD Ft)	Sacks Cement	Top of Cement
Surface Hole	Conductor	16" J55	0	104		84			26	Surface
Vertical Hole	Surface	9-5/8" J55	0	2390		36			785	Surface
Vertical Hole	Intermediate	7" HCL80/110	0	11432		32			965	4964'
Lateral1	Liner	4-1/2" P110	10532	20815		13.5			Liner	Liner

PERFORATION & OPEN HOLE INTERVALS

Well Bore	Well Bore TD Drillers Depth (MD Ft)	Completion Type	Open Hole/Perforated Interval (MD Ft) Top Bottom	Kick-off Point (MD Ft)	Top of Casing Window (MD Ft)	Date Perf'd or Drilled	Date Isolated	Isolation Method	Sacks Cement
Lateral1	20815	Other	11432 20815	1050		04/12/2012			Liner

PRODUCTION

Current Producing Open Hole or Perforated Interval(s), This Completion, Top and Bottom, (MD Ft) 11432-20815' Liner						Name of Zone (If Different from Pool Name) Bakken			
Date Well Completed (SEE INSTRUCTIONS) April 18, 2012			Producing Method Flowing		Pumping-Size & Type of Pump None		Well Status (Producing or Shut-In) Producing		
Date of Test 04/24/2012	Hours Tested 24	Choke Size 12 /64	Production for Test		Oil (Bbls) 490	Gas (MCF) 552	Water (Bbls) 500	Oil Gravity-API (Corr.) 38.6 °	Disposition of Gas Flared
Flowing Tubing Pressure (PSI) 2850		Flowing Casing Pressure (PSI)		Calculated 24-Hour Rate	Oil (Bbls) 490	Gas (MCF) 552	Water (Bbls) 500	Gas-Oil Ratio 1126	

**Completion Report-20917
Attachment C11 (3 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

GEOLOGICAL MARKERS

[illegible]

PLUG BACK INFORMATION

[illegible]

CORES CUT

Top (Ft)	Bottom (Ft)	Formation	Top (Ft)	Bottom (Ft)	Formation

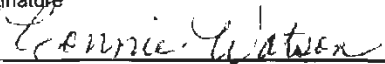
Drill Stem Test

Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								
Test Date	Formation	Top (Ft)	Bottom (Ft)	BH Temp (°F)	CL ppm	H2S ppm	Shut-in 1 (PSIG)	Shut-in 2 (PSIG)
Drill Pipe Recovery								
Sample Chamber Recovery								

Well Specific Stimulations

Date Stimulated 4/12/2012	Stimulated Formation Bakken	Top (Ft) 11432	Bottom (Ft) 20815	Stimulation Stages 25	Volume 908082	Volume Units Gallons
Type Treatment Sand Frac	Acid % 15	Lbs Proppant 2622061	Maximum Treatment Pressure (PSI) 8921		Maximum Treatment Rate (BBLS/Min) 40.2	
Details						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						
Date Stimulated	Stimulated Formation	Top (Ft)	Bottom (Ft)	Stimulation Stages	Volume	Volume Units
Type Treatment	Acid %	Lbs Proppant	Maximum Treatment Pressure (PSI)		Maximum Treatment Rate (BBLS/Min)	
Details						

ADDITIONAL INFORMATION AND/OR LIST OF ATTACHMENTS

Directional Survey Logs as listed above		
I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.	Email Address cwatson@enerplus.com	Date 06/05/2012
Signature 	Printed Name Connie Watson	Title Drilling Technician

**Related Links**[Premium Services](#)[Code Definitions](#)[Digital & Image Logs](#)[Map This Well](#)

Get Well Scout Ticket Data

Enter File Number: Or Enter API Number: NDIC File No: **22574** API No: **33-025-01651-00-00** County: **DUNN**Well Type: **ON CONFIDENTIAL STATUS**Location: **LOT 2 2-148-95** Footages: **250 FNL 1370 FEL** Latitude: **47.673462** Longitude: **-102.741965**Current Operator: **ENERPLUS RESOURCES USA CORPORATION**Original Operator: **ENERPLUS RESOURCES USA CORPORATION**Current Well Name: **GLACIER 148-95-02A-11H TF**Original Well Name: **GLACIER 148-95-02A-11H TF**Elevation: **2442 GL**Field: **[EAGLE NEST](#)**

Other Wells on The Same Multi-Well Pad:

NDIC File No: **[20917](#)** Well Name: **LIKE EAGLE #2-31H** Well Confidential: **No** FormationTops Available: **Yes**NDIC File No: **[22575](#)** Well Name: **ACADIA 148-95-02A-11H TF** Well Confidential:**Yes** Formation Tops Available: **No**[\[DMR Home\]](#) [\[Disclaimer\]](#) [\[Privacy\]](#) [\[Security\]](#) [\[Feedback\]](#) [\[My Account Information\]](#)**Scout Ticket-22574****Attachment C12**

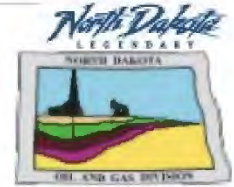
PRAIRIE CHICKEN SWD 1

Independence ND, LLC

SESE Section 31-149-94

Eagle Nest Field

McKenzie County, ND

**Related Links**[Premium Services](#)[Code Definitions](#)[Digital & Image Logs](#)[Map This Well](#)

Get Well Scout Ticket Data

Enter File Number: Or Enter API Number: NDIC File No: **22575** API No: **33-025-01652-00-00** County: **DUNN**Well Type: **ON CONFIDENTIAL STATUS**Location: **LOT 1 2-148-95** Footages: **250 FNL 1270 FEL** Latitude: **47.673460** Longitude: **-102.741559**Current Operator: **ENERPLUS RESOURCES USA CORPORATION**Original Operator: **ENERPLUS RESOURCES USA CORPORATION**Current Well Name: **ACADIA 148-95-02A-11H TF**Original Well Name: **ACADIA 148-95-02A-11H TF**Elevation: **2440 GL**Field: **EAGLE NEST**

Other Wells on The Same Multi-Well Pad:

NDIC File No: **20917** Well Name: **LIKE EAGLE #2-31H** Well Confidential: **No** Formation
Tops Available: **Yes**NDIC File No: **22574** Well Name: **GLACIER 148-95-02A-11H TF** Well Confidential:
Yes Formation Tops Available: **No**[\[DMR Home\]](#) [\[Disclaimer\]](#) [\[Privacy\]](#) [\[Security\]](#) [\[Feedback\]](#) [\[My Account Information\]](#)**Scout Ticket-22575****Attachment C13**

PRAIRIE CHICKEN SWD 1

Independence ND, LLC

SESE Section 31-149-94

Eagle Nest Field

McKenzie County, ND

E. NAME AND DEPTH OF USDWs (CLASS II)

Underground Sources of Drinking Water in Dunn County, ND can be found in both preglacial rocks and glacial drift. Glacial drift in Dunn County consists of till and glaciofluvial sand and gravel deposits. The major glacial drift aquifers in Dunn County are the Killdeer, Horse Nose Butte, Knife River, and Goodman Creek aquifers. However, these aquifers are not located near the proposed PRAIRIE CHICKEN SWD 1 site. According to information available from the North Dakota State Water Commission Map Services web site, the nearest shallow aquifer to the proposed PRAIRIE CHICKEN SWD 1 site is the Squaw Creek Aquifer at approximately 3 miles northeast. Little public data is available for this aquifer but it is potentially composed of glaciofluvial sand and gravel. Independence ND, LLC believes the proposed site poses no risk to this aquifer because of distance and the differing sub-watersheds.

Preglacial sedimentary rocks in Dunn county were deposited in intermittently subsiding Williston basin. The preglacial aquifers found in these sedimentary rocks near the proposed PRAIRIE CHICKEN SWD 1 occur in the Upper Cretaceous Fox Hills and Hell Creek Formations and in the Tertiary Cannonball, Ludlow, Tongue River, and Sentinel Butte Formations.

Sentinel Butte Formation

The Sentinel Butte Formation consists of interbedded clay, shale, claystone, siltstone, poorly consolidated sandstone, and lignite. It is continental in origin and occurs throughout Dunn County except in a few areas where it has been eroded. It is exposed in the area of the proposed PRAIRIE CHICKEN SWD 1 location (the Site) and is approximately 650 feet thick.

The aquifers within the Sentinel Butte Formation consist of poorly consolidated sandstone and fractured lignite. Most of the freshwater wells in Dunn County tap sandstone or lignite aquifers in the upper part of the Sentinel Butte Formation.

Sandstone aquifers — The sandstone aquifers within the Sentinel Butte Formation are composed largely of fine sand enclosed in a matrix of clay and silt. They range in thickness from a few feet to a maximum of about 119 feet and occur at depths throughout the formation. Water from the sandstone aquifers is typically a hard to very hard, sodium bicarbonate type that has a mean dissolved solids concentration of 1,742 mg/L.

Lignite aquifers – Lignite beds can be found randomly spaced throughout the entire thickness of the Sentinel Butte Formation. They range in thickness from 1 to about 20 feet and occur at depths ranging from about 15 to 600 feet. Water from the lignite aquifers is typically a hard to very hard, sodium bicarbonate or sodium bicarbonate-sulfate type that has a mean dissolved solids concentration of 1,526 mg/L.

The sandstone and lignite aquifers in the Sentinel Butte Formation are recharged by infiltration of precipitation.

Tongue River Formation (Currently recognized as the Bullion Creek Formation)

The Tongue River Formation consists of interbedded siltstone, claystone or shale, poorly consolidated sandstone, lignite, and occasional limestone lenses or concretions. It is continental in origin and underlies all of Dunn County. The formation underlies the site at an estimated 650 feet and is approximately 500 feet thick.



Aquifers in the Tongue River Formation consist of very fine to fine-grained sandstone beds that range in thickness from 10 to 100 feet. These sandstone beds frequently pinch out or grade laterally into siltstone or sandy clay. Aquifers in the Tongue River Formation are recharged by leakage from aquifers in the overlying Sentinel Butte Formation. Water from the aquifers is typically a soft, sodium bicarbonate type that has a mean dissolved solids concentration of 2,043 mg/L.

Undifferentiated Cannonball-Ludlow Formations

The Cannonball Formation, which is marine in origin, and the Ludlow Formation, which is continental in origin, are interfingered throughout Dunn County. The undifferentiated Cannonball-Ludlow Formations consist of interbedded siltstone, poorly consolidated sandstone, shale or clay, and lignite. The formation underlies the Site at an estimated 1,150 feet and is approximately 550 feet thick.

The aquifers in the undifferentiated Cannonball-Ludlow Formations consist mostly of fine to very fine silty sandstone beds that range in thickness from about 10 to 125 feet. There is no evidence of a hydraulic connection between the beds. Therefore, each bed is considered to be a separate aquifer. Lower aquifers in the formation are recharged beyond Dunn County while aquifers in the upper section are likely recharged by downward movement of water from the Tongue River Formation. Water from the aquifers is typically a soft, sodium bicarbonate type with a mean dissolved solids concentration of 1,855 mg/L.

Hell Creek Formation

The Hell Creek Formation is composed of interbedded siltstone, shale or claystone, poorly consolidated sandstone, and a few thin lignite beds. It is continental in origin and underlies all of Dunn County. The formation underlies the Site at an estimated 1,700 feet and it is approximately 200 feet thick.

The aquifers within the Hell Creek Formation consist of fine-grained sandstone beds that range in thickness from about 10 to 60 feet and have a maximum aggregate thickness of about 106 feet. Because there is no evidence of a hydraulic connection between the beds, each of the sandstone beds is considered to be a separate aquifer. Recharge to the aquifers in the Hell Creek Formation occurs outside of Dunn County. Water from the aquifers is a soft, sodium bicarbonate type with a mean dissolved solids concentration of 1,588 mg/L.

Fox Hills Formation

The Fox Hills Formation is composed of interbedded sandstone, shale, and siltstone. It is marine in origin and underlies all of Dunn County. The formation underlies the Site at an estimated 1,900 feet and is approximately 140 feet thick. It is underlain by the Pierre Formation.

The aquifers within the Fox Hills Formation are generally composed of very fine to medium-grained sandstone beds that range in thickness from about 6 to 92 feet and have a maximum aggregate thickness of about 158 feet. Recharge to the Fox Hills aquifer likely occurs where the formation crops out in the extreme southwestern part of North Dakota and in eastern Montana. Water from the aquifer is generally a soft, sodium bicarbonate type with a mean dissolved solids concentration of 1,486 mg/L.

Klausing, R. 1979. Ground-Water Resources of Dunn County, North Dakota. U.S. Geological Survey.



F. MAPS AND CROSS SECTIONS OF GEOLOGIC STRUCTURE OF AREA (N/A to Class II wells)

G. GEOLOGIC DATA ON INJECTION AND CONFINING ZONES

Upper Confining Zones:

Name: *Cretaceous Mowry Formation*

Lithologic Description: Shale; medium to dark gray; soft; flaky; traces of bluish gray bentonitic claystone; top is marked by a persistent bentonite that has a strong response on a gamma-ray log. Offshore marine deposits.

Estimated thickness: 120'

Estimated top: 5,070'

Industry accepted standard shale frac gradient = approximately 0.80

Estimated fracture pressure at bottom of zone: $5,190' \times 0.80 = 4,152$ psi
&

Name: *Cretaceous Skull Creek Formation*

Lithologic description: Shale; medium to dark gray; micaceous; soft, flaky to lumpy and sandstone; light gray; glauconitic, calcareous; fine-grained; friable.

Estimated thickness: 205'

Estimated top: 5,190'

Industry accepted standard shale frac gradient = approximately 0.80

Estimated fracture pressure at bottom of zone: $5,395' \times 0.80 = 4,316$ psi

Injection Zone:

Name: *Cretaceous Inyan Kara Formation*

Lithologic Description

- Upper part: Sandstone; light gray; quartzose; fine-grained to course-grained. Shale: gray; silty; lumpy. Marine to nonmarine.
- Lower part: Sandstone; gray; quartzose; medium-grained to course-grained; angular to subrounded; occasional lenses of shale; gray; bentonitic; contains manganese and siderite spheres. Most oilfield brine injection occurs in this unit. Primarily nonmarine.

Estimated thickness of gross zone: 435'

Estimated gross zone: 5,395'-5,830'

Estimated perforated interval: 5,655-5,825'

Industry accepted standard Inyan Kara frac gradient = approximately 0.67

Estimated fracture pressure at top of zone: $5,395' \times 0.67 = 3,615$ psi

Lower Confining Zone:

Name: *Jurassic Swift Formation*

Lithologic description: Shale; dark gray to greenish gray; interbedded with siltstone and sandstone; calcareous; fissile; waxy and grayish green, glauconitic sandstone. Shallow marine deposit

Estimated thickness: 500'

Estimated top: 5,830'

Industry accepted standard shale frac gradient = approximately 0.80

Estimated fracture pressure at top of zone: $5,830' \times 0.80 = 4,664$ psi

Lithologic Description: Shale; dark gray to greenish gray; interbedded with siltstone and sandstone; calcareous; fissile; waxy and grayish green, glauconitic sandstone. Shallow marine deposit.

**** Lithology Reference: North Dakota Stratigraphic Column.

Depths calculated from the NDIC's call of geologic tops in the offsetting BEAVER CREEK 149-94-31D-30H TF well (NDIC Well File No. 24111) and the estimated finished pad elevation of 2,443'. KB elevation predicted to be 2,458' (add 15' to depths above).



H. OPERATING DATA

1. Average and maximum daily injection: Average of 10,000 bbls/day, maximum of 17,000 bbls/day
2. Average and maximum injection pressure: Average 600 psi, maximum 1,480 psi

Maximum injection pressure was determined utilizing the following formula in accordance with § 146.23:

$$FP = [fg - (0.433 * sg)] * d$$

Where:

- FP = formation fracture pressure (measured at surface)
- fg = fracture gradient of confining zone (**** § 146.23) = 0.80 psi/ft
- sg = specific gravity of injected fluid- (See Attachment H1) = 1.21
- d = depth to top of injection zone = 5,395 ft

Therefore:

$$FP = [0.8 \text{ psi/ft} - (0.433 * 1.21)] * 5,395 \text{ ft}$$

$$FP = 1489 \text{ psi}$$

$$FP \sim 1480 \text{ psi}$$

3. Annulus Fluid: A mixture of fresh water and corrosion/scale inhibitors
4. Injection Water Analysis: (See Attachment H1)
5. Hazen-Williams calculation of friction loss at average and maximum rates

$$P_d = \frac{4.52 * Q^{1.85} * L}{C^{1.85} * d^{4.8655}}$$

Where:

- P_d = pressure drop over the length of pipe in psig due to friction
- L = length of pipe in feet (estimated top perf @ 5,655')
- $Q_{(avg)}$ = flow, gpm (average rate of 10,000 bbls/day or 292 gallons/minute)
- $Q_{(max)}$ = flow, gpm (maximum rate of 17,000 bbls/day or 496 gallons/minute)
- C = pipe roughness coefficient (150 – thin coating over steel pipe)
- d = inside pipe diameter, in (4"-conservative value does not include drift dia. or coating thickness)

$$P_{friction(avg)} = \frac{4.52 * 292^{1.85} * 5,655}{150^{1.85} * 4^{4.8655}}$$

$$P_{friction(max)} = \frac{4.52 * 496^{1.85} * 5,655}{150^{1.85} * 4^{4.8655}}$$

$$P_{friction(avg)} = \frac{4.52 * 36388 * 5,655}{10611 * 849}$$

$$P_{friction(max)} = \frac{4.52 * 96970 * 5,655}{10611 * 849}$$

$$P_{friction(avg)} = 103 \text{ psi}$$

$$P_{friction(max)} = 275 \text{ psi}$$



******§ 146.23 Operating, monitoring, and reporting requirements.**

(a) Operating requirements. Operating requirements shall, at a minimum, specify that:

(1) Injection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to the USDWs. In no case shall injection pressure cause the movement of injection or formation fluids into an underground source of drinking water.



MVTL**MINNESOTA VALLEY TESTING LABORATORIES, INC.**

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

**MEMBER
ACIL**

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

Page: 1 of 2

Amended 5Nov18 (Specific Gravity)

Independence ND LLC
301 1st Ave E Bakersfield
Newtown ND 58763-4405

Report Date: 1 Nov 18
Lab Number: 18-W3447
Work Order #: 82-2719
Account #: 048755
Date Sampled: 12 Oct 18 10:00
Date Received: 15 Oct 18 8:00
Sampled By: Client

Project Name: Independence
Sample Description: FBIR Black Medicine 24X-21A
Sample Site: 47.70397, -102.336100
Sample Location: SESW Sec 21 T149 R91

Temp at Receipt: 5.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Metal Digestion				EPA 200.2	16 Oct 18	SVS
pH	* 6.0	units	N/A	SM4500 H+ B	15 Oct 18 17:00	SVS
Conductivity (EC)	216210	umhos/cm	N/A	SM2510-B	15 Oct 18 17:00	SVS
Total Alkalinity	91	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Phenolphthalein Alk	< 20	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Bicarbonate	91	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Carbonate	< 20	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Hydroxide	< 20	mg/l CaCO3	20	SM2320-B	15 Oct 18 17:00	SVS
Tot Dis Solids (Summation)	289000	mg/l	12.5	SM1030-F	26 Oct 18 12:08	Calculated
Percent Sodium of Cations	78.7	%	NA	N/A	18 Oct 18 13:59	Calculated
Total Hardness as CaCO3	42000	mg/l	NA	SM2340-B	18 Oct 18 13:59	Calculated
Hardness in grains/gallon	2450	gr/gal	NA	SM2340-B	18 Oct 18 13:59	Calculated
Cation Summation	4440	meq/L	NA	SM1030-F	26 Oct 18 11:59	Calculated
Anion Summation	5240	meq/L	NA	SM1030-F	26 Oct 18 12:08	Calculated
Percent Error	-8.27	%	NA	SM1030-F	26 Oct 18 12:08	Calculated
Sodium Adsorption Ratio	170		NA	USDA 20b	18 Oct 18 13:59	Calculated
Specific Gravity	1.210 @ 65F		NA	ASTM D1298	16 Oct 18 13:14	RAG
Fluoride	1.01	mg/l	0.10	SM4500-F-C	15 Oct 18 17:00	SVS
Sulfate	11600	mg/l	5.00	ASTM D516-07	26 Oct 18 12:08	EV
Chloride	177000	mg/l	1.0	SM4500-Cl-E	25 Oct 18 15:42	EV
Nitrate-Nitrite as N	< 0.5 @	mg/l	0.10	EPA 353.2	17 Oct 18 15:37	RAG
Calcium - Total	14500	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Magnesium - Total	1400	mg/l	1.0	6010D	18 Oct 18 13:59	BB

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix

= Due to concentration of other analyte

! = Due to sample quantity

+ = Due to internal standard response

CERTIFICATION: ND # ND-00016

**Injection Fluid Analysis
Attachment H1 (2 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

MVTL**MINNESOTA VALLEY TESTING LABORATORIES, INC.**

1126 N. Front St. ~ New Ulm, MN 56073 ~ 800-782-3557 ~ Fax 507-359-2890

2616 E. Broadway Ave. ~ Bismarck, ND 58501 ~ 800-279-6885 ~ Fax 701-258-9724

51 W. Lincoln Way ~ Nevada, IA 50201 ~ 800-362-0855 ~ Fax 515-382-3885

**MEMBER
ACIL**

MVTL guarantees the accuracy of the analysis done on the sample submitted for testing. It is not possible for MVTL to guarantee that a test result obtained on a particular sample will be the same on any other sample unless all conditions affecting the sample are the same, including sampling by MVTL. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval.

AN EQUAL OPPORTUNITY EMPLOYER

Page: 2 of 2

Amended 5Nov18 (Specific Gravity)

Independence ND LLC
301 1st Ave E Bakersfield
Newtown ND 58763-4405

Report Date: 1 Nov 18
Lab Number: 18-W3447
Work Order #: 82-2719
Account #: 048755
Date Sampled: 12 Oct 18 10:00
Date Received: 15 Oct 18 8:00
Sampled By: Client

Project Name: Independence
Sample Description: FBIR Black Medicine 24X-21A
Sample Site: 47.70397, -102.336100
Sample Location: SESW Sec 21 T149 R91

Temp at Receipt: 5.0C

	As Received Result		Method RL	Method Reference	Date Analyzed	Analyst
Sodium - Total	80200	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Potassium - Total	4160	mg/l	1.0	6010D	18 Oct 18 13:59	BB
Barium - Total	6.05	mg/l	0.10	6010D	26 Oct 18 11:59	BB
Iron - Total	63.0	mg/l	0.10	6010D	26 Oct 18 11:59	BB
Manganese - Total	6.10	mg/l	0.05	6010D	26 Oct 18 11:59	BB
Chromium - Total	< 0.08 @	mg/l	0.0020	6020B	31 Oct 18 12:19	CC

* Holding time exceeded

Approved by:

*Claudette K. Carroll**Stacy Zander*

Claudette K. Carroll, Laboratory Manager, Bismarck, ND

Stacy Zander, Energy Laboratory Supervisor, Bismarck, ND

RL = Method Reporting Limit

The reporting limit was elevated for any analyte requiring a dilution as coded below:

@ = Due to sample matrix
! = Due to sample quantity

= Due to concentration of other analytes
+ = Due to internal standard response

CERTIFICATION: ND # ND-00016

I. FORMATION TESTING PROGRAM

Independence ND plans on testing the formation in accordance with the requirements of the final EPA permit. The testing program may include the following:

FORMATION TESTING PROGRAM	
TYPE OF TEST	DATE DUE
Injection Zone Water Sample	Required prior to receiving authorization to inject. A representative water sample (determined by stabilized specific conductivity from three consecutive swab runs) from the injection zone shall be analyzed for TDS, pH, specific gravity and specific conductivity. Analysis will determine whether an aquifer exemption is required.
Fluid Level	Record fluid level while swabbing well. This measurement will be utilized along with the specific gravity to perform the pore pressure test below.
Pore Pressure	May be required in the final permit prior to receiving authorization to inject.
Standard Annulus Pressure	Required prior to receiving authorization to inject and at least every five (5) years after the last successful test to demonstrate mechanical integrity.
Radioactive Tracer Survey	May be required prior to receiving authorization to inject if CBL does not show adequate cement. Also required every five (5) years after the last successful test.
Temperature Log	May be required prior to receiving authorization to inject if radioactive tracer survey is inconclusive. Also, required every five (5) years after the last successful test.
Step Rate Test	May be required to be completed within a limited 180-day authorization to inject. Step rate test must be as prescribed in final permit or pre-approved by EPA.
Pressure Fall-Off Test	May be required to be completed within a limited 180-day authorization to inject. Fall-off test must be as prescribed in final permit or pre-approved by EPA.



J. STIMULATION PROGRAM (Optional for Class II wells)

Independence ND is not proposing a stimulation program at this point in time. If, after receiving final approval to inject, Independence ND determines that a stimulation program is needed, they will work diligently with authorities at the EPA Region 8 and the NDIC to draft an acceptable stimulation program and submit a request for approval. Independence ND will not commence with a stimulation program until they have received written approval from all regulating agencies.

K. INJECTION PROCEDURES (See Attachment K1 – Operations Manual)



Attachment K1 - Operations Manual

Independence ND, LLC

Operations Manual – Version 1.0

- Health, Safety, and Environmental Guidelines
- Facility Layout and Process Flow
- Daily Operations
- Inspection and Maintenance Schedule

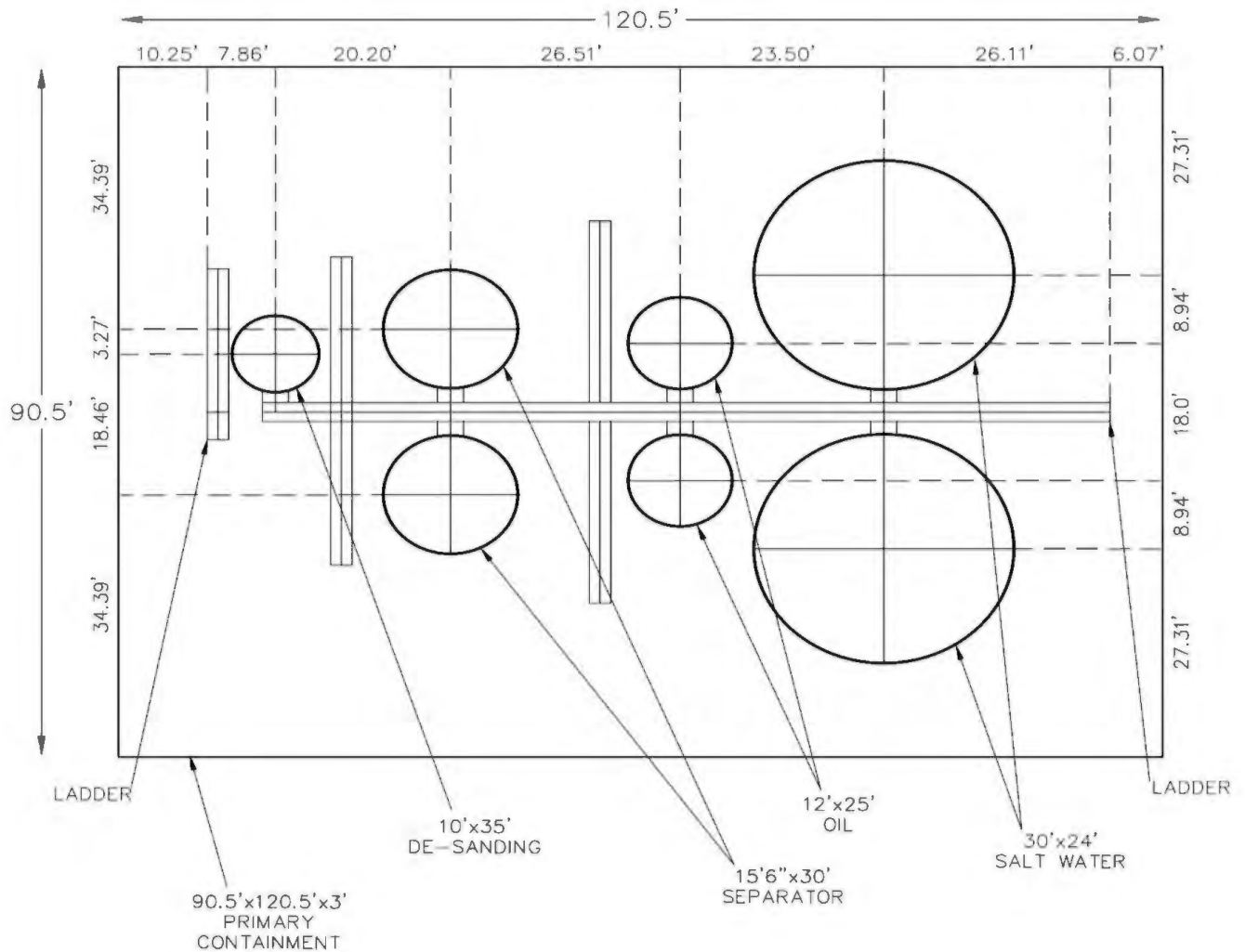
Health, Safety, and Environmental Guidelines

- Safety Culture
 - Independence ND facility operators are responsible for the safe operation of the disposal facility and for the safety of all personnel on location
- Personal Protective Equipment (PPE) Requirements
 - OSHA PPE requirements (29 CFR 1926) will always be followed
 - Safety glasses and Face Protection (when job requires)
 - Hard hat
 - Hearing protection
 - Reflective safety vest
 - Steel-toe boots
 - FR clothing (29 CFR 1910 standard)
- Hazardous Atmospheres
 - A four-gas monitor must always be worn
 - Special care must be taken when gauging tanks; always review tank-gauging guidelines carefully prior to taking measurements
- Daily Pre-Job Safety Analysis
 - At each shift change, a handover meeting must take place between operators
 - Review current operating conditions, forecasted weather, and any unusual conditions
 - Review any maintenance required, what tools and PPE will be required, and any additional precautions needed
- Stop-Job Authority
 - All operators have authority to shutdown injection and/or trucking operations if any conditions are observed that pose a threat to the safety of personnel, equipment, or the environment

- Facility Design and Safety Controls
 - Following permit approval, the disposal facility will be designed and signed off by a Professional Engineer using “API Recommended Practice 14” standards
- Spill Prevention
 - All primary, secondary, and tertiary containment systems must be maintained in good working condition
 - Continuous monitoring with the aide of automated shut downs and alarms will be employed to safeguard the facility
 - Tubing and casing pressures
 - Pump intake and discharge pressures
 - Tank Levels
 - In the unlikely event of a spill, all Tribal, state, and federal requirements will be followed with respect to cleanup and notifications
 - Reference SPCC Plan
- Hazardous Materials Disposal
 - Filter socks and tank bottom solids will be hauled to approved disposal facilities

Facility Layout and Process Flow

- Trucked production water is offloaded at the facility where it is first sent through a solids strainer and then metered
- Water is piped through a de-sander to settle out solids
- Water then is piped into the HWSB skim tanks where oil/water separation occurs
 - Oil can be recycled back through the HWSB tanks and is sent to the oil tanks for sale
 - Water is sent to the water tanks prior to injection into the well
- Water is gravity fed from the water storage tanks through piping to charge pumps
- Water is then piped through filter pots that remove fine particulates before reaching the primary injection pump (horizontal pump)
- Water is pumped from the horizontal pump through a meter and then to the injection tubing head



Daily Operations

- Follow Independence ND's HSE guidelines
- Monitor SCADA system pressures and watch for alarms
- Follow facility inspection/maintenance-frequency guidelines listed below in Table 1
- Assist truck operators in offloading water
 - Check and clean offload water strainers
 - Sample truck loads to confirm quality is acceptable
 - Collect a completed water ticket that clearly states the operator name, trucking company name, driver name, well name and location, quantity delivered, date and time, and any pertinent notes
 - If delivered water plugs the offload screens or remains cloudy, refuse to accept the delivery
 - Only accept produced water that originated from Bakken- or Three Forks-producing wells

- Monitor truck hookup and offload process to ensure no shortcuts are taken
- Walk the entire location and facility looking for leaks and any maintenance needs
- Gauge all water and oil storage tanks
 - Sample and test oil prior to scheduling pickup
 - Recycle oil through HWSB tanks to meet BS&W requirements
- Inspect filter socks and change out when needed
- Check solids levels in de-sander and storage tanks

Inspection and Maintenance Schedule

Equipment Inspection/Monitoring Frequency			
	Continuous	Daily	Weekly
Wellhead Tubing Pressure			
H Pump: Flowrate and Pressure			
SCADA System			
Wellhead Casing Pressure			
Location Perimeter Containment			
Facility Visual Check for Leaks			
Surface Flowlines			
Horizontal Pump			
Charge Pumps			
Offload Strainers			
Sample Truck Loads			
Storage Tanks: Check Fluid Levels and Visual Inspection			
Inspect Pump Seals			
Wellhead Casing Valves			
Offload/Recycle Pumps			
Storage Tanks: Thorough Visual Check (Valves, Fittings, Lines)			

Table 1

L. CONSTRUCTION PROCEDURES

Ground Elevation	2,445.5'
Estimated Finished Pad Elevation	2,443'
Estimated KB Elevation	2,458' (add 15' to depths below)

Mud Program	
Surface	Fresh Water
Production	Salt Water Gel System

Deviation Program	Tests (i.e. Totco drop surveys) to determine the deviation from the vertical shall be taken at least every 1000'
-------------------	--

Casing Program	
Surface	9-5/8" J-55 36ppf set at least 50' into the Pierre Shale to ~2,300'
Production	7" J-55 26 lb/ft set to ~6,050'

Cementing Program	
Surface	Cemented to surface with an estimated 780 sacks ****
Production	Cemented to surface with an estimated 715 sacks ****

Logging Program	(*Minimum-others as required by EPA permit letter)
Cement Bond Log	Run from TD to at least 100' above TOC
Gamma Ray	Run from TD to surface

Perforating Program	Anticipated to be 5,655' to 5,825' confirmed with GR ****
---------------------	---

Anticipated Formation Tops (Estimated) ****

Pierre	2,040' GL
Greenhorn	4,640' GL
Mowry	5,070' GL
Skull Creek Formation	5,190' GL
Inyan Kara (Gross Inj. Zone)	5,395' GL
Swift	5,830' GL
PBD	6,010' GL
TD	6,050' GL

Drilling Plan Summary

Independence ND, LLC plans to drill an Inyan Kara Formation (Dakota Group) salt water disposal well to 6,050' with rotary tools. This will be a new well in the Eagle Nest Field. A 13-1/2" surface hole will be drilled with fresh water mud to a depth of at least 50' below the base of the Fox Hills Formation. 9-5/8", J-55 36ppf surface casing will be set and cemented to surface with approximately 780 sacks of cement. A 8-3/4" bit will be used to drill out of the surface casing with a salt water gel system to an anticipated TD of 6,050'. 7", J-55 26ppf production casing will be set and cemented to surface with approximately 715 sacks. **A closed loop system will be utilized during the drilling of this well. Drilling fluids will be recirculated through a series of steel open-top storage tanks instead of an earthen pit. Cuttings will be captured and dried through the use of a shale shaker, mud cleaner, and decanter centrifuge and deposited in a 3-sided steel tank. Amendments may be added to help solidify the cuttings if necessary. All cuttings will be hauled off the site to the Indian Hills Waste Disposal located at 14070 43rd St NW, Alexander ND 58831.**

**** Depth to base of lowest freshwater zone was calculated from the Pierre Shale Top MM 23 map.-drilling oversight will be required to ensure that surface casing is set at least 50' into the Pierre Formation. Cement volumes are estimates for ideal conditions-actual cement volumes will be adjusted accordingly by operator/cement contractor to compensate for deviations in drilling plan, wellbore, cement type, formation influences, etc. and achieve the required isolation under existing regulations for both surface and production strings. Injection Interval is also estimated-actual Injection Interval will be determined from logs performed on the well during completion. All depths referenced from the proposed graded finished pad elevation of 2,443'. KB elevation estimated to be 2,458' (add 15' to depths above)



M. CONSTRUCTION DETAILS (See Attachment M1.1-M4)



WELL LOCATION PLAT

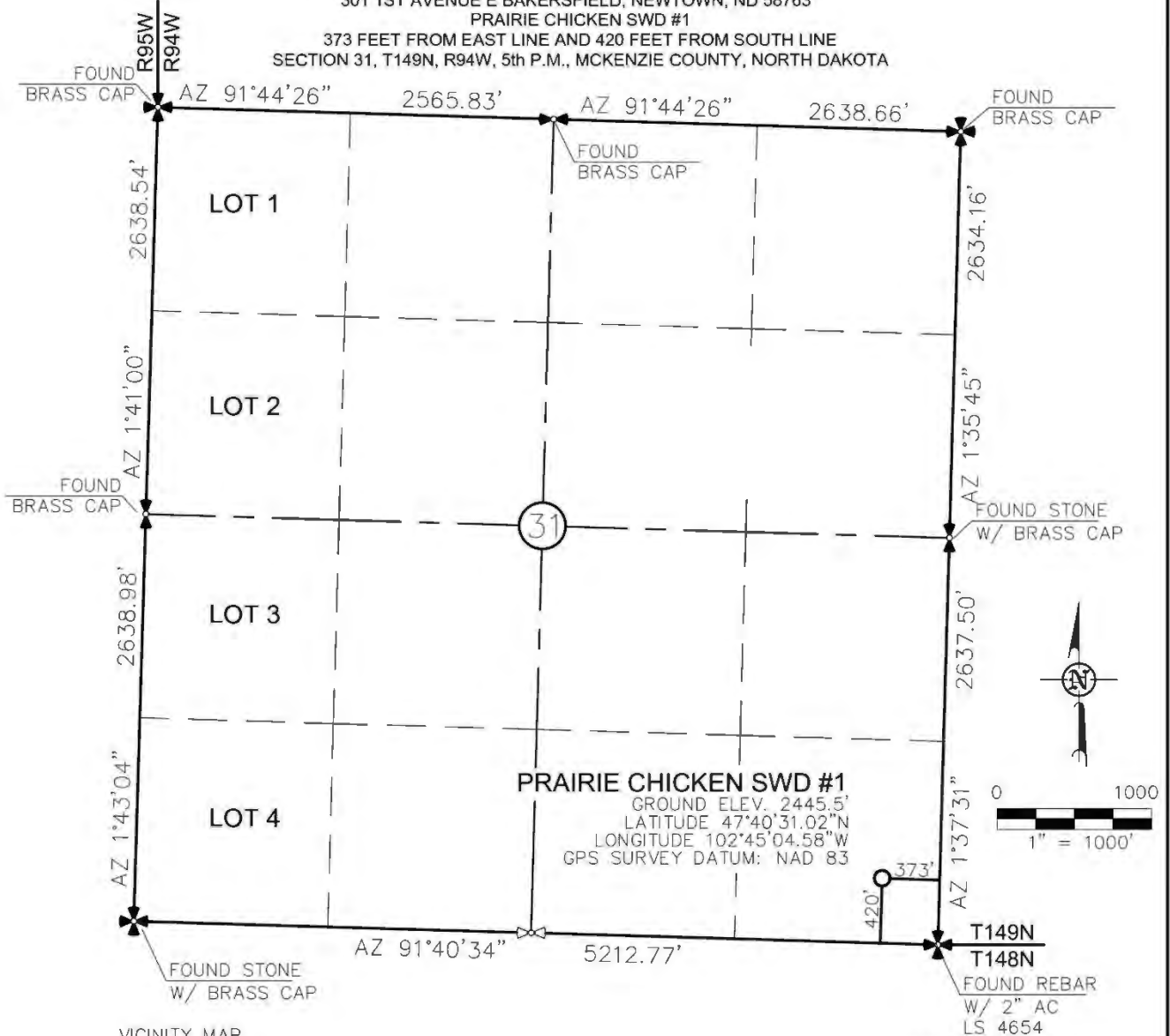
INDEPENDENCE ND LLC

301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763

PRAIRIE CHICKEN SWD #1

373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE

SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



PRAIRIE CHICKEN SWD #1

GROUND ELEV. 2445.5'

LATITUDE 47°40'31.02"N

LONGITUDE 102°45'04.58"W

GPS SURVEY DATUM: NAD 83

VICINITY MAP



MONUMENT - RECOVERED

MONUMENT - NOT RECOVERED

STAKED ON 7/24/18

VERTICAL CONTROL DATUM WAS BASED UPON CONTROL POINT 30-1 WITH AN ELEVATION OF 2429.6'

THIS SURVEY AND PLAT IS BEING PROVIDED AT THE REQUEST OF CHRIS DANEILSON OF NESET CONSULTING SERVICES. I CERTIFY THAT THIS PLAT CORRECTLY REPRESENTS WORK PERFORMED BY ME OR UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

Robert L. Procive



© 2018, INTERSTATE ENGINEERING, INC.

ROBERT L. PROCIVE, LS-2884

1/10
SHEET NO.

INTERSTATE ENGINEERING
Professionals you need, people you trust

Interstate Engineering, Inc.
P.O. Box 266
141 2nd Avenue Southwest
Belfield, North Dakota 58622
Ph (701) 575-2247
Fax (701) 575-2251
www.interstateeng.com
Other offices in Minnesota, Montana and South Dakota

INDEPENDENCE ND LLC

WELL LOCATION PLAT

SECTION 31, T149N, R94W

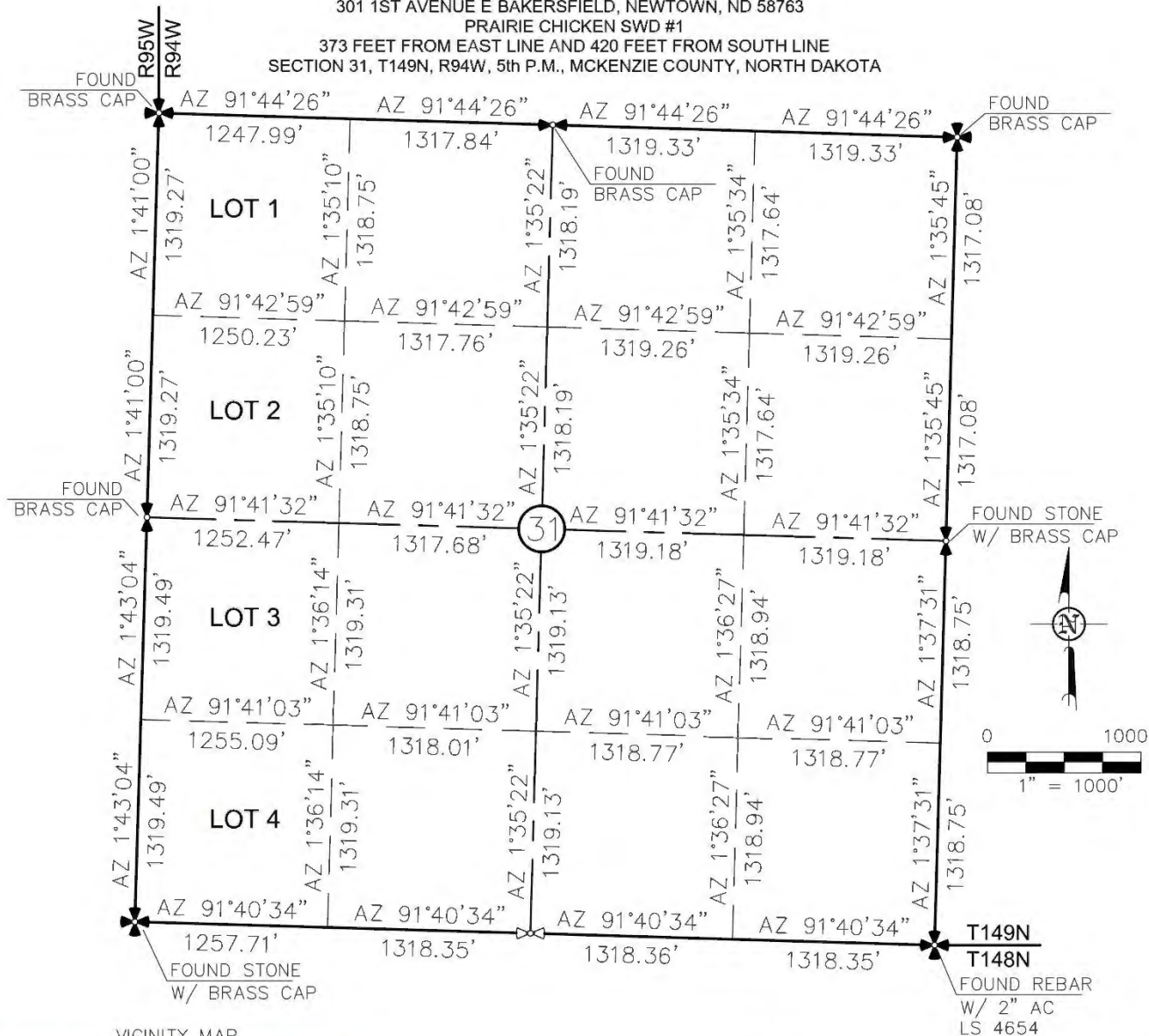
MCKENZIE COUNTY, NORTH DAKOTA

Drawn By: J.D.M. Project No.: S18-09-083
Checked By: R.L.P. Date: JULY 2018

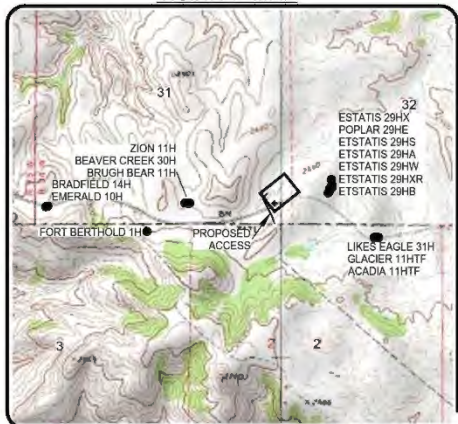
Well Location Survey
Attachment M1.1
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

SECTION BREAKDOWN

INDEPENDENCE ND LLC
301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763
PRAIRIE CHICKEN SWD #1
373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE
SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



VICINITY MAP



THIS DOCUMENT WAS ORIGINALLY ISSUED AND SEALED BY ROBERT L. PROCIVE, PLS, REGISTRATION NUMBER 3880 ON 10/15/18 AND THE ORIGINAL DOCUMENTS ARE STORED AT THE OFFICES OF INTERSTATE ENGINEERING, INC.

ALL AZIMUTHS ARE BASED ON G.P.S. OBSERVATIONS. THE ORIGINAL SURVEY OF THIS AREA FOR THE GENERAL LAND OFFICE (G.L.O.) WAS 1901. THE CORNERS FOUND ARE AS INDICATED AND ALL OTHERS ARE COMPUTED FROM THOSE CORNERS FOUND AND BASED ON G.L.O. DATA. NORTH DAKOTA STATE PLANE NORTH ZONE.

- ⛶ — MONUMENT — RECOVERED
- ⛶ — MONUMENT — NOT RECOVERED



© 2018, INTERSTATE ENGINEERING, INC.

2/10

SHEET NO.



Interstate Engineering, Inc.
P.O. Box 266
141 2nd Avenue Southwest
Belfield, North Dakota 58622
Ph (701) 575-2247
Fax (701) 575-2251
www.interstateeng.com
Other offices in Minnesota, Montana and South Dakota

INDEPENDENCE ND LLC
SECTION BREAKDOWN
SECTION 31, T149N, R94W
MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: J.D.M. Project No.: S18-09-063
Checked By: R.L.P. Date: JULY 2018

Section Breakdown
Attachment M1.2
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND



THIS DOCUMENT WAS ORIGINALLY
ISSUED AND SEALED BY ROBERT L.
PROCIWE, PLS, REGISTRATION NUMBER
3880 ON 10/15/18 AND THE
ORIGINAL DOCUMENTS ARE STORED AT
THE OFFICES OF INTERSTATE
ENGINEERING, INC.

CATASTROPHIC CONTAINMENT
ASSUMING 0.5 FOOT FREE BOARD ON THE BERM AROUND
THE CONTAINMENT POND AND CONTAINMENT WATER IS
ALLOWED TO BACK UP ONTO THE PAD, THE TOTAL
DESIGNED OVERALL CONTAINMENT VOLUME WILL BE
19,235 BARRELS

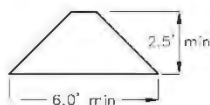


Proposed Contours

Original Contours

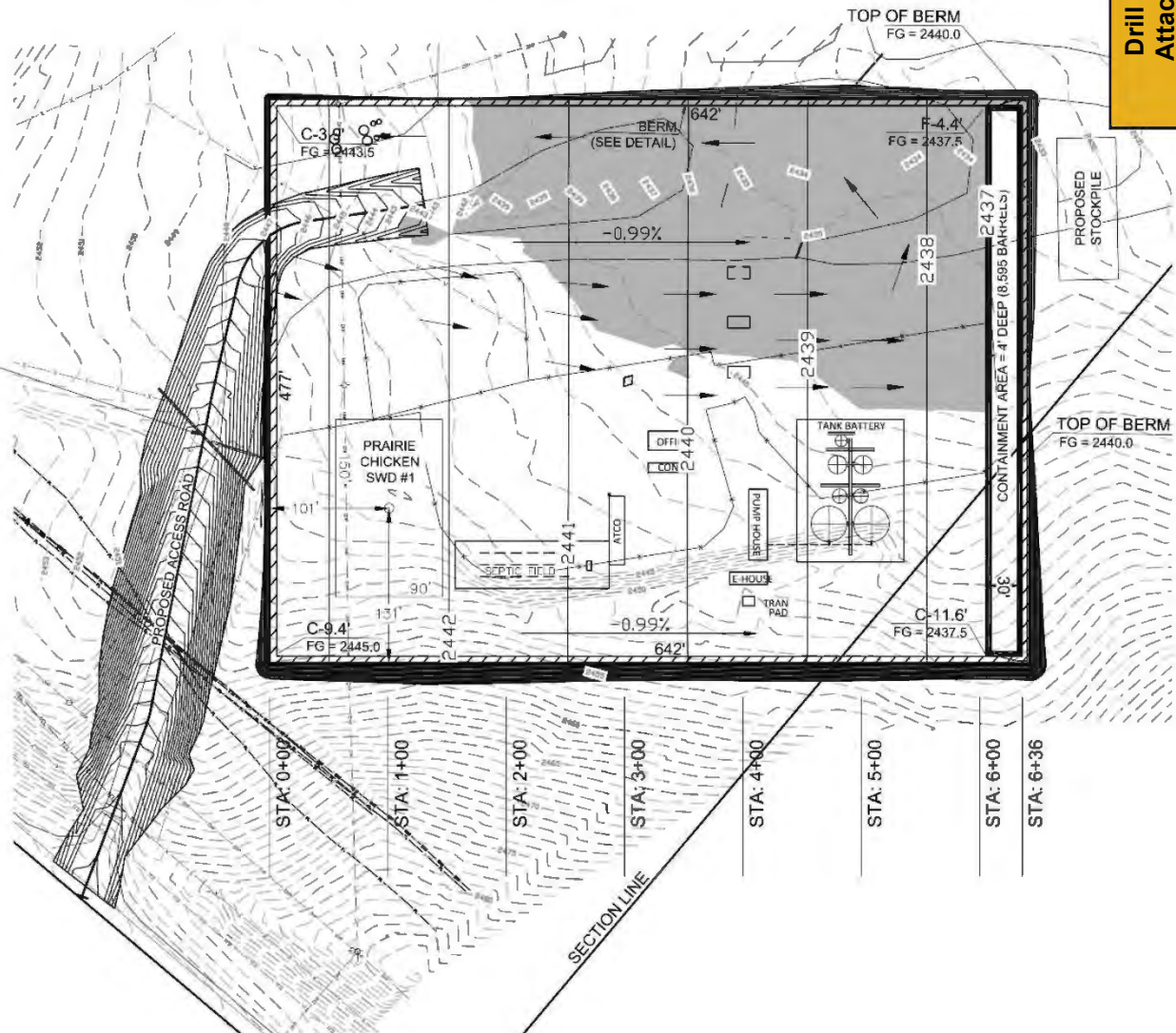


BERM DETAIL



REMOVE AND
REPLACE 18" CMP
ADD DITCH BLOCK

PAD LAYOUT
INDEPENDENCE ND LLC
301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763
PRAIRIE CHICKEN SWD #1
373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE
SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



**Drill Pad Layout
Attachment M1.3**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

© 2018, INTERSTATE ENGINEERING, INC.

Interstate Engineering, Inc. P.O. Box 268 141 2nd Avenue Southeast Bellevue, North Dakota 58002 Fax: (701) 576-2251 www.interstateeng.com Other offices in Wisconsin, Montana and South Dakota	
INDEPENDENCE ND LLC PAD LAYOUT SECTION 31, T149N, R94W MCKENZIE COUNTY, NORTH DAKOTA	Drawn By: JLM Checked By: JLP Project No.: 18-00-003 Date: 10.1.2018



3/10
SHEET NO.

NOTE: All utilities shown are preliminary only, a complete
utilities location is recommended before construction.

ACCESS APPROACH

INDEPENDENCE ND LLC
301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763
PRAIRIE CHICKEN SWD #1
373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE
SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

Access Approach Attachment M1.4

PRAIRIE CHICKEN SWD #1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

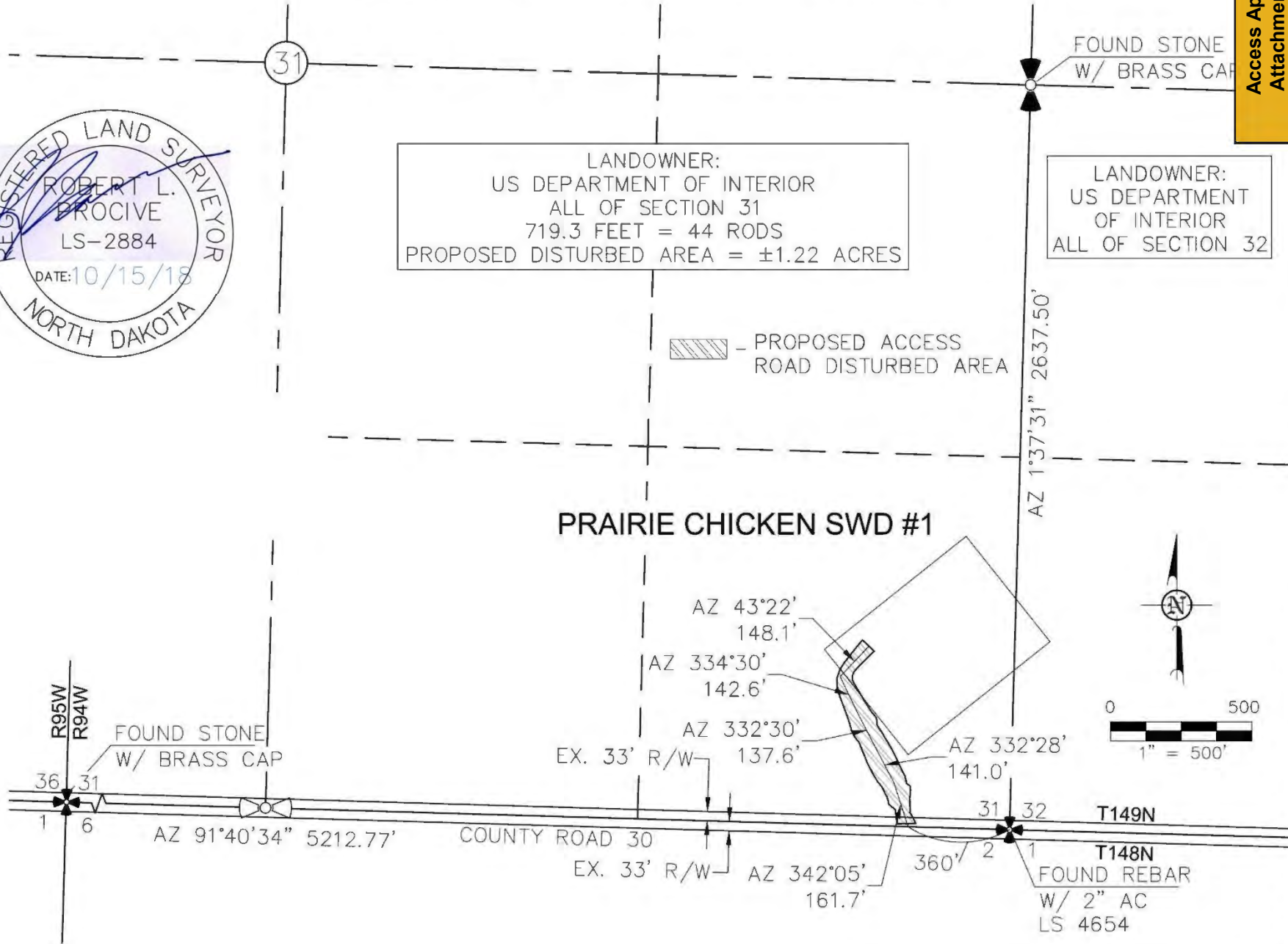


LANDOWNER:
US DEPARTMENT OF INTERIOR
ALL OF SECTION 31
719.3 FEET = 44 RODS
PROPOSED DISTURBED AREA = ±1.22 ACRES

LANDOWNER:
US DEPARTMENT OF INTERIOR
ALL OF SECTION 32

- PROPOSED ACCESS ROAD DISTURBED AREA

PRAIRIE CHICKEN SWD #1



INDEPENDENCE ND LLC
ACCESS APPROACH
SECTION 31, T149N, R94W
MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: J.D.M. Project No.: S18-094
Checked By: R.L.P. Date: JULY 20

Interstate Engineering, Inc.
P.O. Box 266
141 2nd Avenue Southwest
Belfield, North Dakota 58622
Ph (701) 575-2247
Fax (701) 575-2251
www.interstateeng.com
Other offices in Minnesota, Montana and South Dakota

© 2018, INTERSTATE ENGINEERING, INC.



4/10
SHEET NO.

COUNTY ROAD MAP

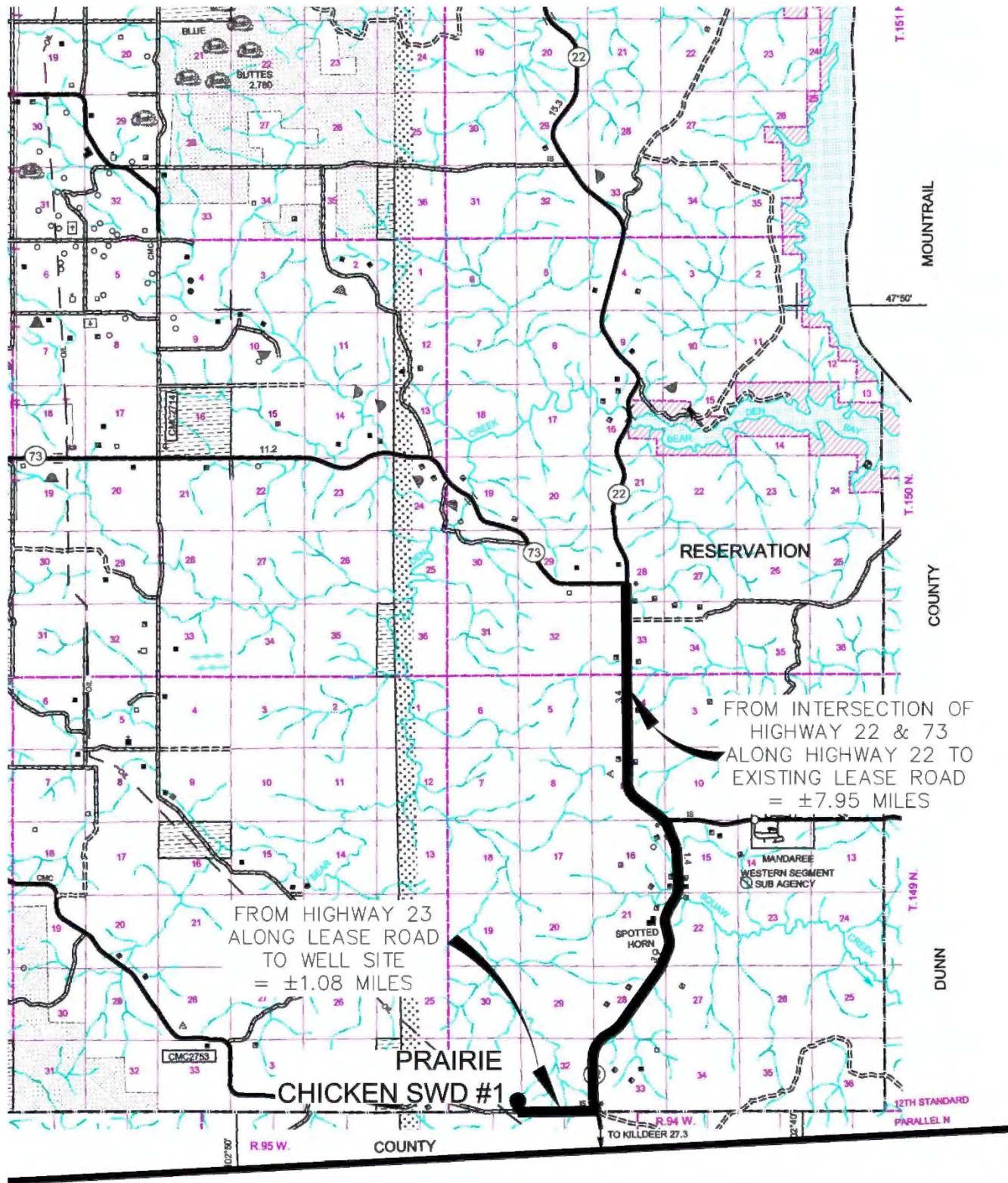
INDEPENDENCE ND LLC

301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763

PRAIRIE CHICKEN SWD #1

373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE

SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



© 2018, INTERSTATE ENGINEERING, INC.

6/10
SHEET NO.

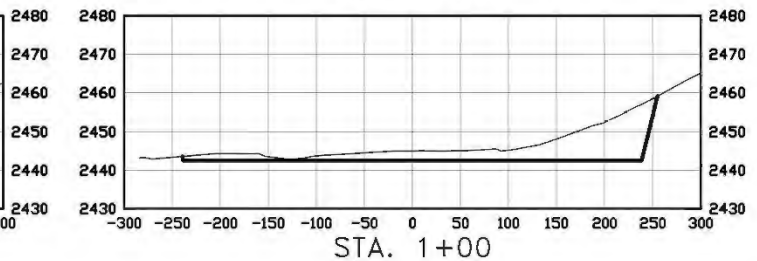
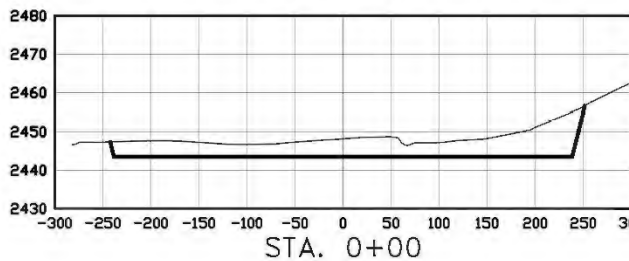
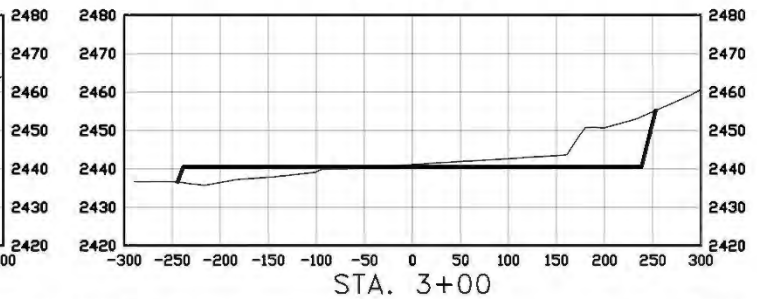
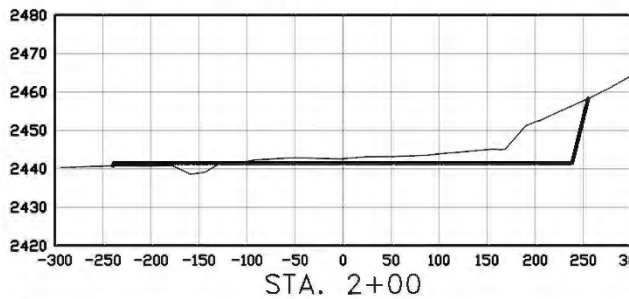
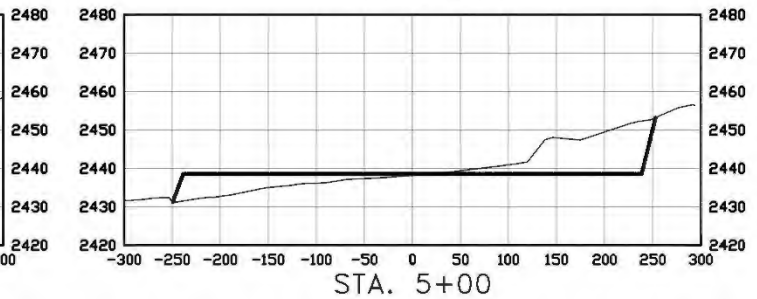
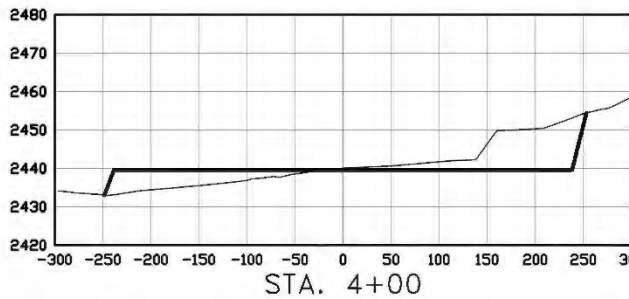
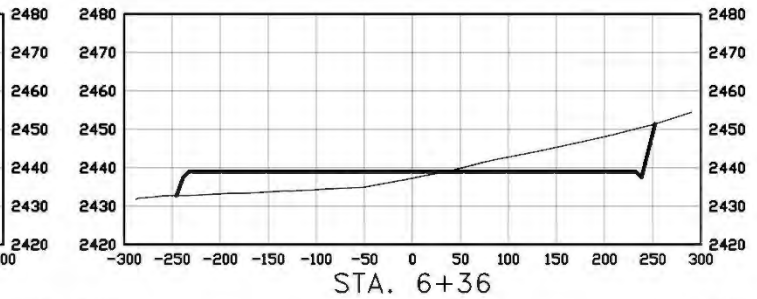
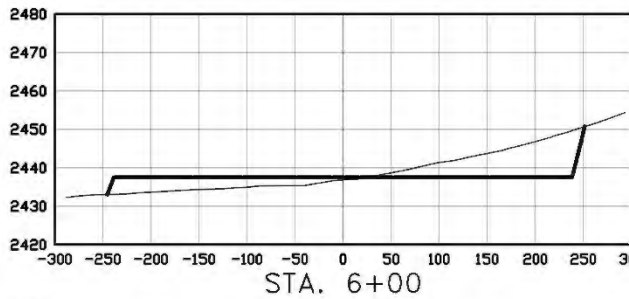
INTERSTATE ENGINEERING
Professionals you need, people you trust

Interstate Engineering, Inc.
P.O. Box 266
141 2nd Avenue Southwest
Belfield, North Dakota 58622
Ph (701) 575-2247
Fax (701) 575-2251
www.interstateeng.com
Other offices in Minnesota, Montana and South Dakota

INDEPENDENCE ND LLC
COUNTY ROAD MAP
SECTION 31, T149N, R94W
MCKENZIE COUNTY, NORTH DAKOTA
Drawn By: J.D.M. Project No.: S18-09-0
Checked By: R.L.P. Date: JULY 2018

**County Road Map
Attachment M1.6**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

CROSS SECTIONS
 INDEPENDENCE ND LLC
 301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763
 PRAIRIE CHICKEN SWD #1
 373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE
 SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



THIS DOCUMENT WAS ORIGINALLY
 ISSUED AND SEALED BY ROBERT L.
 PROCIVE, PLS, REGISTRATION NUMBER
 3880 ON 10/15/18 AND THE
 ORIGINAL DOCUMENTS ARE STORED AT
 THE OFFICES OF INTERSTATE
 ENGINEERING, INC.



SCALE
 HORIZ 1"=200'
 VERT 1"=50'

© 2018, INTERSTATE ENGINEERING, INC.

7/10
 SHEET NO.

**INTERSTATE
 ENGINEERING**
 Professionals you need, people you trust

Interstate Engineering, Inc.
 P.O. Box 266
 141 2nd Avenue Southwest
 Belfield, North Dakota 58622
 Ph (701) 575-2247
 Fax (701) 575-2251
 www.interstateeng.com
 Other offices in Minnesota, Montana and South Dakota

INDEPENDENCE ND LLC
 CROSS SECTIONS
 SECTION 31, T149N, R94W
 MCKENZIE COUNTY, NORTH DAKOTA
 Drawn By: J.D.M. Project No.: S18-09-05
 Checked By: R.L.P. Date: JULY 2018

**Cross Sections
 Attachment M1.7**
 PRAIRIE CHICKEN SWD 1
 Independence ND, LLC
 SESE Section 31-149-94
 Eagle Nest Field
 McKenzie County, ND

SITE QUANTITIES
INDEPENDENCE ND LLC
301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763
PRAIRIE CHICKEN SWD #1
373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE
SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA

WELL SITE ELEVATION	2445.5
WELL PAD ELEVATION	2442.5

PAD EXCAVATION (INCLUDES CONTAINMENT)	(34,488)
ROAD EXCAVATION	(96)
	(34,584)

PAD EMBANKMENT	9,806
ROAD EMBANKMENT	10,320
PLUS SHRINKAGE (30%)	6,038
	26,164

STOCKPILE TOP SOIL (6")	5,831
-------------------------	-------

BERM	710
------	-----

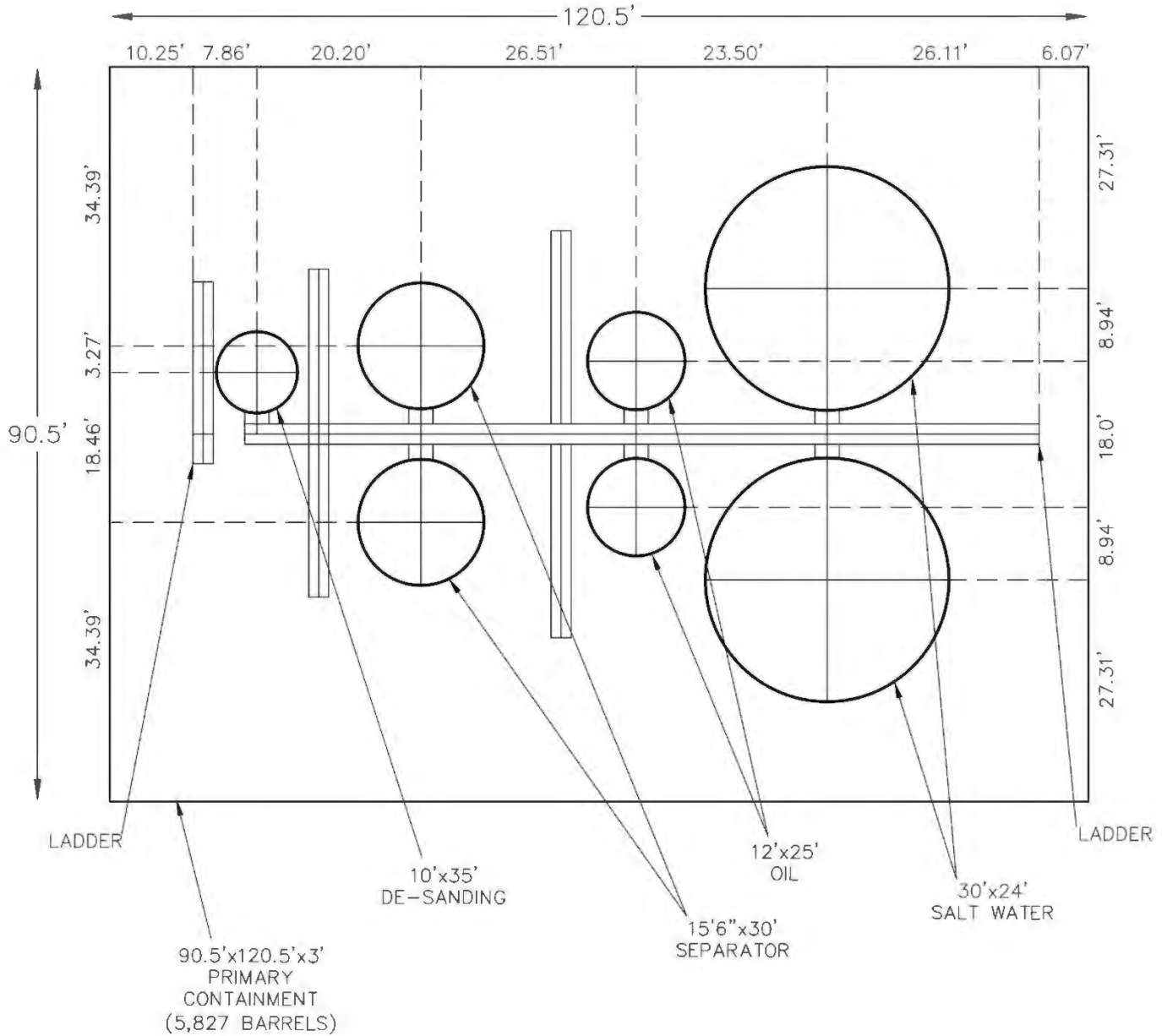
STOCKPILE MATERIAL	1,879
--------------------	-------

DISTURBED AREA FROM PAD	7.23 ACRES
-------------------------	------------

NOTE: ALL QUANTITIES ARE IN CUBIC YARDS (UNLESS NOTED)
CUT END SLOPES AT 1:1
FILL END SLOPES AT 1.5:1

WELL SITE LOCATION
373' FEL
420' FSL

TANK DETAIL
 INDEPENDENCE ND LLC
 301 1ST AVENUE E BAKERSFIELD, NEWTOWN, ND 58763
 PRAIRIE CHICKEN SWD #1
 373 FEET FROM EAST LINE AND 420 FEET FROM SOUTH LINE
 SECTION 31, T149N, R94W, 5th P.M., MCKENZIE COUNTY, NORTH DAKOTA



NOTE: HDPE LINER TO ENCOMPASS BASE OF TANK CONTAINMENT

© 2018, INTERSTATE ENGINEERING, INC.

10/10
SHEET NO.



Interstate Engineering, Inc.
 P.O. Box 266
 141 2nd Avenue Southwest
 Belfield, North Dakota 58622
 Ph (701) 575-2247
 Fax (701) 575-2251
 www.interstateeng.com
 Other offices in Minnesota, Montana and South Dakota

INDEPENDENCE ND LLC
 TANK DETAIL
 SECTION 31, T149N, R94W
 MCKENZIE COUNTY, NORTH DAKOTA
 Drawn By: J.D.M. Project No: S18-09-01
 Checked By: R.L.P. Date: JULY 2018

Tank Size and Purpose
Attachment M2
 PRAIRIE CHICKEN SWD 1
 Independence ND, LLC
 SESE Section 31-149-94
 Eagle Nest Field
 McKenzie County, ND

GSE HD Smooth Geomembrane

GSE HD is a smooth high density polyethylene (HDPE) geomembrane manufactured with the highest quality resin specifically formulated for flexible geomembranes. This product is used in applications that require excellent chemical resistance and endurance properties.



AT THE CORE:

An HDPE geomembrane used in applications that require excellent chemical resistance and endurance properties.

Product Specifications

These product specifications meet GRI GM 13

Tested Property	Test Method	Frequency	Minimum Average Value				
			30 mil	40 mil	60 mil	80 mil	100 mil
Thickness, mil	ASTM D 5199	every roll	30	40	60	80	100
Lowest individual reading			27	36	54	72	90
Density, g/cm ³	ASTM D 1505	200,000 lb	0.940	0.940	0.940	0.940	0.94
Tensile Properties (each direction)	ASTM D 6693, Type IV Dumbbell, 2 ipm	20,000 lb	114	152	228	304	380
Strength at Break, lb/in-width			63	84	126	168	210
Strength at Yield, lb/in-width			700	700	700	700	700
Elongation at Break, %			12	12	12	12	12
Elongation at Yield, %	G.L. 2.0 in G.L. 1.3 in						
Tear Resistance, lb	ASTM D 1004	45,000 lb	21	28	42	56	70
Puncture Resistance, lb	ASTM D 4833	45,000 lb	54	72	108	144	180
Carbon Black Content, % (Range)	ASTM D 1603*/4218	20,000 lb	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0	2.0 - 3.0
Carbon Black Dispersion	ASTM D 5596	45,000 lb	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾	Note ⁽¹⁾
Notched Constant Tensile Load, hr	ASTM D 5397, Appendix	200,000 lb	500	500	500	500	500
Oxidative Induction Time, mins	ASTM D 3895, 200°C; O ₂ 1 atm	200,000 lb	>100	>100	>100	>100	>100
TYPICAL ROLL DIMENSIONS							
Roll Length ⁽²⁾ , ft			1,120	870	560	430	340
Roll Width ⁽²⁾ , ft			22.5	22.5	22.5	22.5	22.5
Roll Area, ft ²			25,200	19,575	12,600	9,675	7,650

NOTES:

- ⁽¹⁾Dispersion only applies to near spherical agglomerates. 9 of 10 views shall be Category 1 or 2. No more than 1 view from Category 3.
- ⁽²⁾Roll lengths and widths have a tolerance of ±1%.
- GSE HD is available in rolls weighing approximately 3,900 lb.
- All GSE geomembranes have dimensional stability of ±2% when tested according to ASTM D 1204 and LTB of <-77°C when tested according to ASTM D 746.
- *Modified.

**** The PRAIRIE CHICKEN SWD 1 primary tank containment will be lined with a 30mil geomembrane

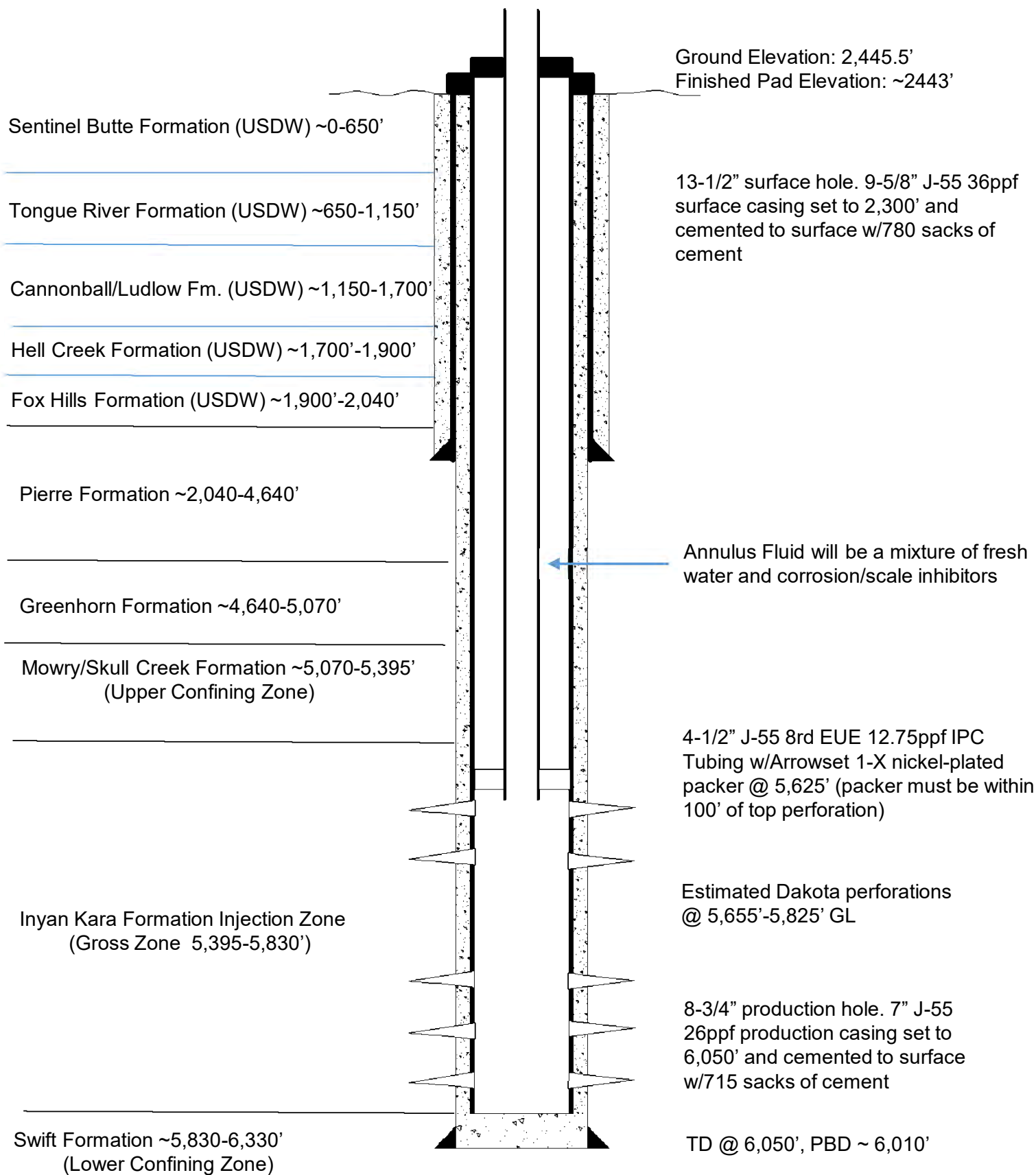
GSE is a leading manufacturer and marketer of geosynthetic lining products and services. We've built a reputation of reliability through our dedication to providing consistency of product, price and protection to our global customers.

Our commitment to innovation, our focus on quality and our industry expertise allow us the flexibility to collaborate with our clients to develop a custom, purpose-fit solution.

[DURABILITY RUNS DEEP] For more information on this product and others, please visit us at GSEworld.com, call 800.435.2008 or contact your local sales office.

Liner Specification Sheet Attachment M2.1

PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND



**** Not to Scale. All depth referenced from estimated 2,443' graded elevation. KB Elevation estimated to be 2,458' (add 15' to depths above)

**Proposed Wellbore
Attachment M3**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

PRAIRIE CHICKEN SWD Cement Volume Calculator									
Casing Description	Cement Description	Cement Interval	Cement Length	CUFT/FT	Volume CUFT	Excess Factor	Volume w/Excess CUFT	Yield CUFT/Sack	Cement Sacks
9-5/8" Casing in 13-1/2" Hole	Surface Lead Set C	0-2050'	2050	0.4887	1001.8	1.5	1502.8	2.66	565
9-5/8" Casing in 13-1/2" Hole	Surface Tail G (250')	2050-2300'	250	0.4887	122.2	2	244.4	1.15	215
							Total Cement Sacks for Surface>>		780
7" Casing in 9-5/8" 36# Casing	Production Lead Lite	0-2300'	2300	0.1668	383.6	1.35	517.9	2.05	255
7" Casing in 8-3/4" Hole	Production Lead Lite	2300-4950'	2650	0.1503	398.3	1.35	537.7	2.05	265
7" Casing in 8-3/4" Hole	Production Tail G (500' above IK)	4950-6050'	1100	0.1503	165.3	1.35	223.2	1.15	195
							Total Cement Sacks for Production>		715

**Cement Details
Attachment M4**

PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

N. CHANGES IN INJECTED FLUID (N/A to Class II wells)

O. PLANS FOR WELL FAILURES

Independence ND does not anticipate any well failures, but if a scheduled Mechanical Integrity Test (MIT) or our monitoring program reveals a loss of mechanical integrity, the well would immediately be shut in for repairs and the EPA and NDIC would be notified within 24 hours. Independence ND would work diligently with the EPA and NDIC to diagnose and repair the well. Following the repairs, Independence ND would perform a subsequent MIT in the presence of a regulatory authority and results would be submitted to the EPA and the NDIC prior to returning to injection operations.

P. MONITORING PROGRAM

Independence ND plans to install a SCADA system that would constantly monitor all aspects of the operation including injection rate, receipt rate, tank levels, pressures, spill detection, and other sensors that would prevent the receipt of additional fluids and shut the system in if any anomaly occurred. Additionally, Independence ND will physically monitor the system in accordance with the details of the final permit. This monitoring program will likely include the following:

OBSERVE WEEKLY AND RECORD AT LEAST ONCE EVERY THIRTY DAYS	
OBSERVE AND RECORD	Injection pressure (psig)
	Annulus pressure(s) (psig)
	Injection rate (bbl/day)
	Fluid volume injected since the well began injecting (bbls)
ANNUALLY	
ANALYZE	Injected fluid total dissolved solids (mg/l)
	Injected fluid specific gravity
	Injected fluid specific conductivity
	Injected fluid pH
ANNUALLY	
REPORT	Each month's maximum and averaged injection pressures (psig)
	Each month's maximum and minimum annulus pressures(s) (psig)
	Each month's injected volume (bbl)
	Fluid volume injected since the well began injecting (bbls)
	Written results of annual injected fluid analysis
	Sources of all fluids injected during the year



Q. PLUGGING AND ABANDONMENT PLAN (Also note Attachments Q1-Q3)

Well Information as Proposed

Ground Elevation: 2,445.5'

Estimated Finished Pad Elevation: ~ 2,443'

Estimated KB: ~2,458'

Estimated PBD: ~6,010'

Surface Casing: 9-5/8" J-55 36ppf set to 2,300' and cemented to surface w/780 sacks of cement

Production Casing: 7" J-55 26ppf set to 6,050' and cemented to surface w/715 sacks of cement

Tubing: 4-1/2" J-55 8rd EUE 12.75ppf Internally Plastic Coated

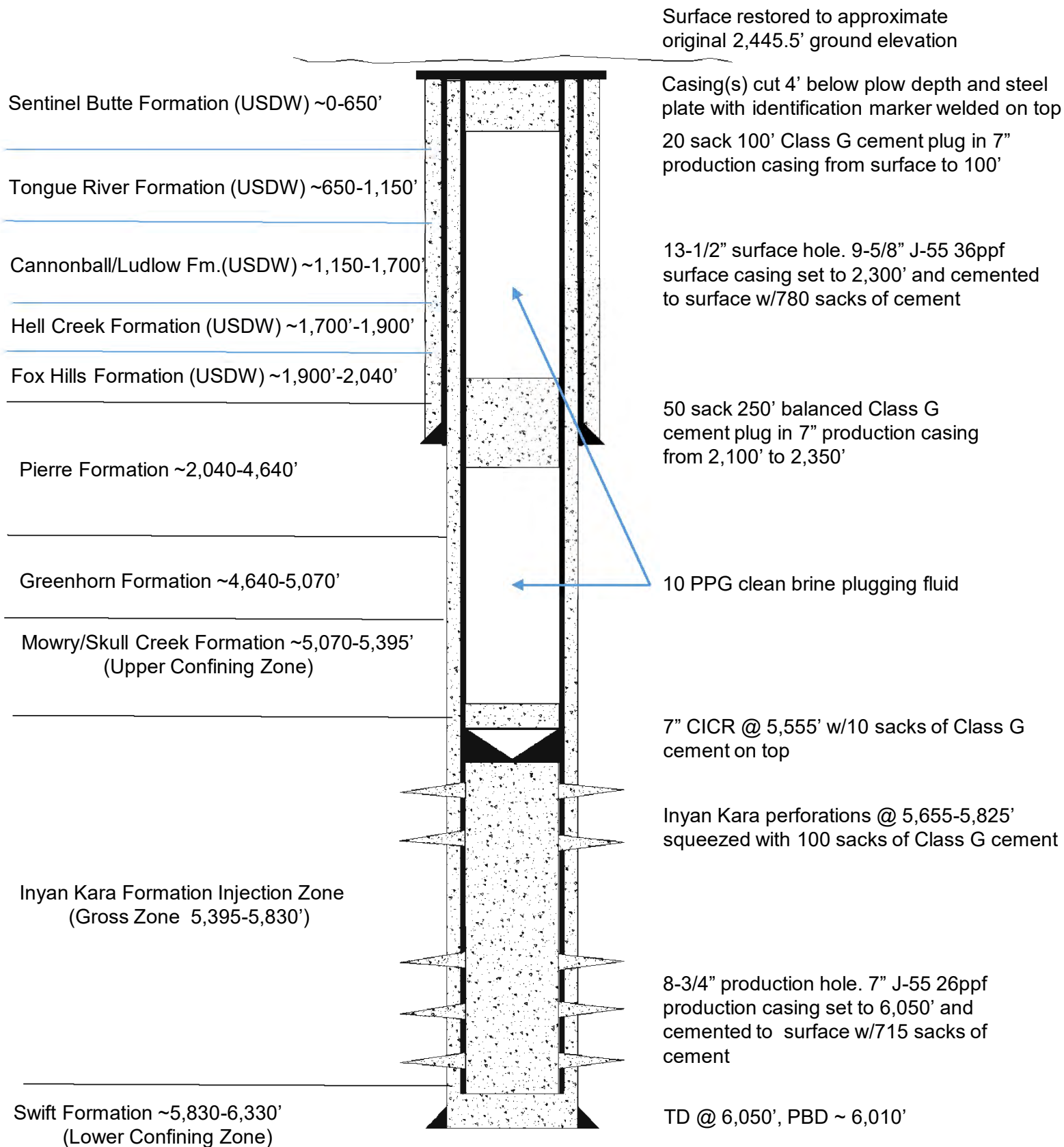
Packer: Arrowset 1-X nickel-plated set at 5,625'

**** Note: A squeeze of the surface casing will NOT be required if surface/production casing annulus is isolated as proposed. All plugs will be placed in 7" 26ppf J-55 production casing. All depths referenced from the estimated finished pad elevation of 2,443'. Estimated KB elevation is approximately 2,458' (add 15' to depths below).

Plug and Abandonment Procedure

1. Review CBL to ensure production string is adequately isolated to surface.
2. Notify EPA Director of proposed plugging at least 45 days prior and submit changes to previously approved plugging and abandonment plan on new EPA Form 7520-14. Await approval.
3. Submit plugging and abandonment plan on sundry request to NDIC and await approval.
4. Notify NDIC field inspector, EPA, and BLM at least 48 hours prior to commencing with operations.
5. MIRU workover rig. Pressure test annulus to 500 psi for 15 minutes. LD surface equipment. ND injection wellhead, NU BOP.
6. Release 1-X packer and TOH w/injection string and packer, inspect, and lay down.
7. PU CICR, RIH and set at 5,555' (~100' above top perforation). Pressure test tubing. Roll hole with clean 10 PPG brine. Establish injection rate into Dakota perforations.
8. Spot cement at end of tubing, sting into retainer and squeeze 100 sacks of Class G cement below CICR and into perforations.
 - If no pump pressure is observed during cement placement, the perforations will be cleared and a second attempt with an additional 100 sacks of Class G cement will be made to isolate the Dakota injection zone.
 - If the second attempt is unsuccessful, a 30 sack/150' Class G cement plug will be set on top of the retainer.
9. If pump pressure is observed during squeeze, sting out and spot 10 sacks of Class G cement on top of retainer. Estimated TOC at 5,505'.
10. Trip out of hole to 2,350' (50' below surface casing shoe). Spot 50 sack, 250' Class G plug in 7", 26ppf production casing to 2,100'.
11. Pull up and circulate tubing clean. Wait on cement. Tag plug and record.
12. Trip out of hole to 100'. Pump 20 sacks Class G plug to surface.
13. Wait on cement. Cut well head 4' below plow level and weld on marker plate.
14. Complete Form 7 Plug & Abandonment report and submit to NDIC.
15. Complete and submit EPA Form 7520-13 to Director within 60 days of plugging.
16. Notify NDIC Field Inspector, EPA, and BLM prior to restoring location.





**** Not to Scale. All depth referenced from estimated 2,443' graded elevation. KB Elevation estimated to be 2,458' (add 15' to depths above)

**Proposed P&A'd Wellbore
Attachment Q1**

PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND



United States Environmental Protection Agency
Washington, DC 20460

PLUGGING AND ABANDONMENT PLAN

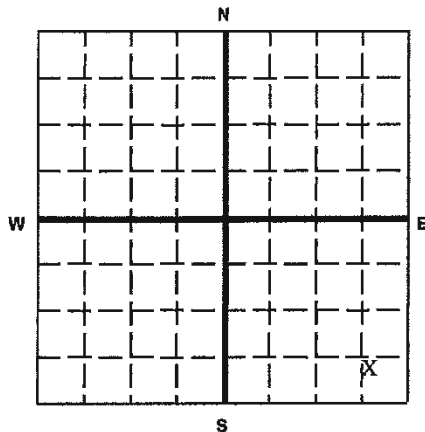
Name and Address of Facility

PRAIRIE CHICKEN SWD 1
(Mailing address to be determined)

Name and Address of Owner/Operator

INDEPENDENCE ND, LLC
301 1ST AVE E BAKERSFIELD | NEWTOWN ND | 58763-4405

Locate Well and Outline Unit on
Section Plat - 640 Acres



State
ND

County
MCKENZIE

Permit Number

Surface Location Description

NW 1/4 of SE 1/4 of SE 1/4 of SE 1/4 of Section 31 Township 149 Range 94

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface

Location 420 ft. from (N/S) S Line of quarter section
and 373 ft. from (E/W) E Line of quarter section.

TYPE OF AUTHORIZATION

- ☒ Individual Permit
☐ Area Permit
☐ Rule

Number of Wells 1

Lease Name

PRAIRIE CHICKEN SWD

WELL ACTIVITY

- ☐ CLASS I
☒ CLASS II
☒ Brine Disposal
☐ Enhanced Recovery
☐ Hydrocarbon Storage
☐ CLASS III

Well Number 1

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
9-5/8"	36	2300	2300	13-1/2"
7"	26	6050	6050	8-3/4"

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- ☒ The Balance Method
☐ The Dump Bailer Method
☐ The Two-Plug Method
☒ Other

CEMENTING TO PLUG AND ABANDON DATA:

	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inches)	7"	7"	7"				
Depth to Bottom of Tubing or Drill Pipe (ft)	5555	2350	100				
Sacks of Cement To Be Used (each plug)	110	50	20				
Slurry Volume To Be Pumped (cu. ft.)	126.5	57.5	23				
Calculated Top of Plug (ft.)	5505	2100	0				
Measured Top of Plug (if tagged ft.)		TBD					
Slurry Wt. (Lb./Gal.)	15.8	15.8	15.8				
Type Cement or Other Material (Class III)	Class G	Glass G	Class G				

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (if any)

From	To	From	To
5655	5825		

Estimated Cost to Plug Wells

**EPA 7520-14
Attachment Q2**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)

JC JOHNSON PRESIDENT

Signature

J.C. Johnson

Date Signed

11-5-18

Attachment Q3 - Plugging Estimates

Independence ND, LLC

Plug & Abandonment - Estimate #1

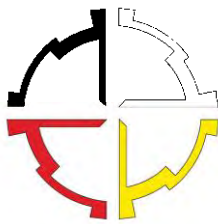
Category	Vendor	Amount	Description
Service Rig	Baker Consulting	\$ 19,000.00	Rig Estimate w/BOP & Tools
Cement	BJ Services	\$ 17,771.44	P&A Cement Bid
Tools	Baker Hughes	\$ 3,500.00	CICR for 7" 26 lb/ft Casing
Site Supervision	Elk River Consulting	\$ 5,950.00	Jobsite Coordinator
Total Bid		<u>\$ 46,221.44</u>	

Plug & Abandonment - Estimate #2

Category	Vendor	Amount	Description
Service Rig	Neptune Operating	\$ 27,900.00	Rig Estimate w/BOP & Tools
Cement	Schlumberger	\$ 21,281.48	P&A Cement Bid
Tools	Halliburton	\$ 6,438.85	CICR for 7" 26 lb/ft Casing
Site Supervision	Elk River Consulting	\$ 5,950.00	Jobsite Coordinator
Total Bid		<u>\$ 61,570.33</u>	

Plug & Abandonment - Estimate #3

Category	Vendor	Amount	Description
Turnkey P&A	Triple C	\$ 100,000.00	All-In Bid for Entire P&A
Site Supervision	Elk River Consulting	\$ 5,950.00	Jobsite Coordinator
Total Bid		\$ 105,950.00	



BAKER
CONSULTING

Baker Consulting, LLC
2820 102nd Ave NW
Mandaree, ND 58757
701.759.3292
www.jpbakerconsulting.com

Monday, November 05, 2018
Independence ND, LLC
ATTN: James Owen
jowen@independence-llc.com

Proposal for Prairie Chicken SWD 1 P & A project on Fort Berthold Indian Reservation (FBIR).

Dear Mr. Owen,

Thank you for the opportunity to provide P&A services to Independence. We are pleased to submit this bid for our services per your RFP to service Independence on FBIR.

Baker Consulting has been in business since 2010, and has steadily built a reputation of integrity, professionalism, and safety. We are an established oilfield service company, and have successfully completed projects in all aspects of our operations (upstream, midstream, and downstream) across western North Dakota and eastern Montana.

In response to this RFP, we have prepared a proposal outlining all of the services and supporting roles we are able to provide to you at this time to complete your project. Baker Consulting is a TERO approved Tier One Certified Indian Contractor approved to provide this, and many other services, on FBIR. We have maintained a satisfactory grade in ISNet, (account #400-196952 to support our operations. We have the resources and experience to handle many job designs and tasks. Our maintenance and safety programs are comprehensive and create highly efficient operations. We have completed all types of unique and challenging jobs in this basin with continued success. I have no doubt the Baker team will exceed your expectations.

Per your request, we have completed pricing for this with the following items included to complete the SOW in your RFP package. This is to include one of our service rigs, tool pusher, crew, pump, mobilization, demobilization, and capping of well. We will work with your concrete vendor to circulate and pump in the desired zones and cut and cap the well per the NDIC regulations. "Tier 1 fees" are not broken out in our bids or invoicing as separate line items as we ensure pricing submitted is the total amount, no extra fees. We have direct involvement within this service offering and have all of the necessary equipment, labor force, certifications, and knowledge to complete this project successfully.

Thank you again for this opportunity to work with you on this project. Please contact me with any questions about the proposal package.

Total Price: \$19,000.00

M. Ryan Buday

M. Ryan Buday
307-413-6536
Chief Operating Officer
ryan@jpbakerconsulting.com

BJ Cementing Services | Quotation

Independence ND, LLC | **Prairie Chicken SWD 1** |

7.000 (in) | Plug & Abandon

| Dickinson, ND | Nov 07,2018

PREPARED FOR		PREPARED BY		SERVICE REPRESENTATIVES	
CLIENT CONTACT	James Owen	QUOTE WRITER	Devon Hanson	ACCOUNT REP	Thomas Irwin
TITLE		TITLE	Field Engineer I, Cement	TITLE	Driver Trainer
COMPANY	Independence ND, LLC	OFFICE PHONE		OFFICE PHONE	701-290-9129
OFFICE PHONE		EMAIL	Devon.Hanson@bjservices.com	MOBILE	
MOBILE	720-530-3198	MOBILE	701-590-5946	EMAIL	Thomas.Irwin@BJSERVICES.COM
EMAIL	jowen@independence-llc.com				



Job at a Glance

P&A

Job Code	Plug & Abandon
Depth (TVD) (ft)	6,050.000
Depth (MD) (ft)	6,050.000
Hole Size (in)	
Casing Size (in)/Weight (lb/ft)	
Pump Via	Tubing
Total Mix Water Required (gals)	896.000

CEMENTING FLUIDS

FLUID	VOL (bbls)	DEN (ppg)	YIELD (Cu Ft/sk)
SQUEEZE SLURRY : CICR @ 5,555	22.40	15.8000	1.1510
DISPLACEMENT : Displacement 1	31.80	8.3400	
PLUG SLURRY : Balance Plug 2,100'-2,350'	10.20	15.8000	1.1480
DISPLACEMENT : Displacement 2	12.00	8.3400	
PLUG SLURRY : Surface Plug	4.10	15.8000	1.1645

Well Data

INNER / OUTER GEOMETRY

TYPE	OD (in)	ID (in)	WEIGHT (lbs/ft)	MD (ft)	TVD (ft)	EXCESS (%)	GRADE
Previous Casing	7.000	6.276	26.000	6,050.000	6,050.000		J-55
Tubing	2.875	2.441	6.400	5,555.000	5,555.000		

PARAMETERS

Landing Collar Depth (ft)	6,050.00
Mud Density (ppg)	
Mud Type	
Estimated Static Temp (°F)	
Estimated Circulating Temp (°F)	

VOLUME CALCULATIONS

0 ft	x	0.03250 cf/ft	with	0 % excess	=	0.000 cf



Fluid Specifications

	DEN (ppg)	YIELD (Cu Ft/sk)	PLN TOP OF FLUID (Ft)	LG (Ft)	VOL (Cu Ft)	VOL (sks)	VOL (bbls)
SQUEEZE SLURRY : CICR @ 5,555	15.8000	1.1510	5,505.00	0.00	126.00	110	22.40
CEMENT, CLASS G, 100.0000 PCT							
DISPERSANT, CD-32, 0.3000 BWOB							
FLUID LOSS, FL-52, 0.4000 BWOB							
DISPLACEMENT : Displacement 1	8.3400		0.00		0.00		31.80
PLUG SLURRY : Balance Plug 2,100'-2,350'	15.8000	1.1480	2,100.00	0.00	57.00	50	10.20
CEMENT, CLASS G, 100.0000 PCT							
DISPLACEMENT : Displacement 2	8.3400		0.00		0.00		12.00
PLUG SLURRY : Surface Plug	15.8000	1.1645	0.00	0.00	23.00	20	4.10
CEMENT, CLASS G, 100.0000 PCT							
ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS, 2.0000 BWOB							

Cement Properties

	MIX WATER (gals/sk)	MIX FLUID (gals/sk)
SQUEEZE SLURRY : CICR @ 5,555	4.96	4.96
PLUG SLURRY : Balance Plug 2,100'-2,350'	5.00	5.00
PLUG SLURRY : Surface Plug	5.00	5.00

Notes

Customer will be charged for any additional hours, 6 hours after requested time of service.

Price Estimates

PRODUCT CHARGES

PRODUCT	QUANTITY	UOM	UNIT PRICE	GROSS AMOUNT	DISC. %	NET UNIT PRICE	NET AMOUNT
CEMENT, CLASS G	180.0000	SK	\$47.08	\$8,474.40	40.000	\$28.25	\$5,084.64
DISPERSANT, CD-32	32.0000	LB	\$8.32	\$266.24	40.000	\$4.99	\$159.74
FLUID LOSS, FL-52	42.0000	LB	\$23.28	\$977.76	40.000	\$13.97	\$586.66
ACCELERATOR, SALT, CHLORIDE, CALCIUM, A-7P, PELLETS	38.0000	LB	\$2.40	\$91.20	40.000	\$1.44	\$54.72
FOAM PREVENTER, FP-6L	10.0000	GAL	\$131.36	\$1,313.60	40.000	\$78.82	\$788.16
RETARDER, R-8L	10.0000	GAL	\$44.72	\$447.20	40.000	\$26.83	\$268.32
PRODUCT SUBTOTAL:				\$11,570.40			\$6,942.24

SERVICE CHARGES

SERVICE	QUANTITY	UOM	UNIT PRICE	GROSS AMOUNT	DISC. %	NET UNIT PRICE	NET AMOUNT
Bulk delivery Charges	536.5080	TMI	\$5.20	\$2,789.84	50.000	\$2.60	\$1,394.92
Bulk materials Blending Charge	182.8982	CU FT	\$5.23	\$956.56	50.000	\$2.62	\$478.28
Cement Crew Mobilization-Demobilization Fee	1.0000	EA	\$10,880.00	\$10,880.00	50.000	\$5,440.00	\$5,440.00
Cement pump charge, 5,001-6,000 feet/1,501 -1,800 m	1.0000	6/HR	\$7,032.00	\$7,032.00	50.000	\$3,516.00	\$3,516.00
Cement pump charge, Additional Hours	0.0000	HR	\$2,720.00	\$0.00	50.000	\$0.00	\$0.00
SERVICE SUBTOTAL:				\$21,658.40			\$10,829.20
TOTALS:				\$33,228.80	46.52		\$17,771.44

Client will be charged for all 'SPECIAL PROPPANTS' delivered to location, whether they are pumped or not. All proppants other than standard grade frac. Sand are considered 'SPECIAL PROPPANTS'. The technical data contained in this proposal is based on the best information available at the time of writing and is subject to further analysis and testing. The pricing data contained in this proposal are estimates only and may vary depending on the work actually performed. Pricing does not include federal, state and local taxes or royalties. This quotation is based on BJ Services being awarded the work on a first call basis and within thirty (30) days of the proposal date. These prices will be subject to review if the work is done after thirty (30) days from the proposal date, or on a second or third call basis.

BJ Services Terms and Conditions

ALL WORK ORDERS FOR SERVICES ("SERVICES" OR "WORK") AND PURCHASE ORDERS FOR THE SUPPLY OF PRODUCTS OR CHEMICALS ("PRODUCTS") (COLLECTIVELY, "WORK ORDERS") TO BE PROVIDED IN THE UNITED STATES AND/OR CANADA BY BJ SERVICES, LLC OR ITS SUBSIDIARIES OR AFFILIATES (COLLECTIVELY "BJ") TO ITS CUSTOMERS (EACH A "CUSTOMER") ARE SUBJECT TO ACCEPTANCE BY BJ, AND ANY WORK ORDERS SO ACCEPTED WILL BE GOVERNED BY THE PRICING PROPOSAL, THE WORK ORDER, AND THESE TERMS AND CONDITIONS, UNLESS THE CUSTOMER AND BJ (COLLECTIVELY THE "PARTIES") HAVE EXECUTED A MASTER SERVICE AGREEMENT, WHICH TERMS SHALL CONTROL.

1. PAYMENT TERMS

UNLESS ALTERNATE PAYMENT TERMS ARE SPECIFIED OR APPROVED BY THE BJ CREDIT DEPARTMENT, ALL CHARGES BILLED BY BJ MUST BE PAID WITHIN THIRTY (30) DAYS OF THE DATE OF INVOICE. FOR INVOICES, UNPAID AFTER THIRTY (30) DAYS, DISCOUNTS FROM LIST PRICE MAY BE REVOKED. INTEREST MAY BE CHARGED AT THE RATE OF TEN PERCENT (10%) PER ANNUM OR THE MAXIMUM LEGAL RATE. LIENS AND SECURITY INTERESTS MAY BE FILED AND REGISTERED, AND CUSTOMER SHALL PAY BJ ALL COSTS OF COLLECTION, INCLUDING REASONABLE ATTORNEYS' FEES AND COURT COSTS, IN ADDITION TO OTHER AMOUNTS DUE. OPERATING, PRODUCTION OR WELL CONDITIONS THAT PREVENT SATISFACTORY OPERATION OF SERVICES OR PRODUCTS DO NOT RELIEVE CUSTOMER OF ITS PAYMENT RESPONSIBILITY. BJ RESERVES THE RIGHT TO REQUIRE PAYMENT COD BASED ON CREDIT REVIEW AT TIME OF WORK.

2. CANCELLATION AND RETURNS

A. PRODUCTS: PRODUCT ORDERS MAY ONLY BE CANCELED WITH WRITTEN AUTHORIZATION FROM BJ. CUSTOMER MAY BE CHARGED A RESTOCKING CHARGE OF TWENTY-FIVE PERCENT (25%), PLUS ANY PACKING AND TRANSPORTATION COSTS INCURRED. PRODUCTS SPECIALLY MANUFACTURED TO CUSTOMER SPECIFICATIONS, OR ORDERS FOR SUBSTANTIAL QUANTITIES MAY NOT BE CANCELED. DELIVERED PRODUCTS MAY ONLY BE RETURNED FOR CREDIT (LESS THE RESTOCKING FEE AND TRANSPORT COSTS) IN UNUSED, REUSABLE CONDITION, IN ORIGINAL UNOPENED CONTAINERS.

B. SERVICES: IN THE EVENT CUSTOMER CANCELS AN ORDER FOR SERVICES WITHOUT CAUSE, CUSTOMER SHALL BE LIABLE FOR ALL REASONABLE COSTS INCURRED BY BJ INCLUDING MOBILIZATION/DEMOBILIZATION.

3. THIRD-PARTY CHARGES, TAXES

CUSTOMER SHALL PAY ALL THIRD-PARTY CHARGES, IN COMPLIANCE WITH BJ'S CURRENT PRICE LIST, AND ANY SALES, USE, RENTAL OR OTHER TAXES THAT MAY BE APPLICABLE. CUSTOMER SHALL PAY ALL APPLICABLE CUSTOMS, DUTY, IMPORT AND OTHER DUTIES UNLESS OTHERWISE AGREED IN WRITING BY BJ. CUSTOMER SHALL PROVIDE NECESSARY IMPORT LICENSES AND EXTENSIONS.

4. INDEPENDENT CONTRACTOR

IT IS EXPRESSLY UNDERSTOOD THAT BJ IS AN INDEPENDENT CONTRACTOR, AND THAT NEITHER BJ NOR ITS PRINCIPALS, PARTNERS, SHAREHOLDERS, MEMBERS, DIRECTORS, OFFICERS, EMPLOYEES OR SUBCONTRACTORS ARE SERVANTS, AGENTS OR EMPLOYEES OF CUSTOMER. WHERE BJ PROVIDES SERVICES IN LOUISIANA, THE SERVICES PROVIDED BY BJ AND ITS SUBCONTRACTORS ARE AN INTEGRAL PART OF, AND ARE ESSENTIAL TO THE ABILITY OF CUSTOMER TO GENERATE CUSTOMER'S GOODS, PRODUCTS, AND SERVICES, AND THEREFORE BJ AND CUSTOMER AGREE THAT CUSTOMER IS THE STATUTORY EMPLOYER OF BJ'S EMPLOYEES AND ITS SUBCONTRACTORS' EMPLOYEES UNDER LA. R.S. 23:1061 (A) (B).

5. LIABILITIES, RELEASES AND INDEMNIFICATION:

A. IN THESE TERMS AND CONDITIONS (I) "BJ GROUP" MEANS BJ, ITS SUBSIDIARY AND AFFILIATED COMPANIES; ITS SUBCONTRACTORS AT ANY TIME; AND THE OFFICERS, DIRECTORS, EMPLOYEES, CONSULTANTS, AND AGENTS OF ALL OF THE FOREGOING; (II) "CLAIMS" MEANS ALL CLAIMS, DEMANDS, CAUSES OF ACTION, LIABILITIES, DAMAGES, JUDGMENTS, FINES, PENALTIES, AWARDS, LOSSES, COSTS, EXPENSES (INCLUDING, WITHOUT LIMITATION, ATTORNEYS' FEES AND COSTS OF LITIGATION) OF ANY KIND OR CHARACTER ARISING OUT OF, OR RELATED TO, THE PERFORMANCE OF THE SERVICES OR PRODUCTS PROVIDED; (III) "CONSEQUENTIAL DAMAGES" MEANS ANY INDIRECT, SPECIAL, PUNITIVE, EXEMPLARY OR CONSEQUENTIAL DAMAGES OR LOSSES UNDER APPLICABLE LAW; (IV) "CUSTOMER GROUP" MEANS CUSTOMER, ITS PARENT, SUBSIDIARY AND AFFILIATED OR RELATED COMPANIES; ITS LESSEES, CO-OWNERS, PARTNERS, JOINT OPERATORS AND JOINT VENTURES; ITS CLIENT OR CUSTOMER IF IT IS NOT THE END USER OF THE SERVICES OR PRODUCTS; ITS OTHER CONTRACTORS AT ANY TIME; AND THE OFFICERS, DIRECTORS, EMPLOYEES, CONSULTANTS, AND

AGENTS OF ALL OF THE FOREGOING; (V) "POLLUTION CLAIMS" MEANS ALL CLAIMS RELATING TO POLLUTION OR CONTAMINATION OF WATER, LAND, OR AIR, INCLUDING WITHOUT LIMITATION, ADVERSE EFFECTS ON THE ENVIRONMENT OR ANY FORM OF PROPERTY, OR ANY VIOLATION OR ALLEGED VIOLATION OF ENVIRONMENTAL STATUTES, ORDINANCES, LAWS, ORDERS, RULES AND REGULATIONS; (VI) "TOOLS" MEANS ANY OF BJ GROUP'S INSTRUMENTS, EQUIPMENT, OR TOOLS, AND (VII) "WASTE" MEANS ANY CUTTINGS, MUDS, WASTE, WATER, OR MATERIALS FROM THE WELL THAT WHERE SERVICES ARE PERFORMED BY BJ.

B. BJ SHALL RELEASE, INDEMNIFY, DEFEND AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS ARISING OUT OF OR RELATED TO (I) PERSONAL OR BODILY INJURY, ILLNESS, SICKNESS, DISEASE OR DEATH OF ANY MEMBER OF BJ GROUP, AND (II) LOSS, DAMAGE OR DESTRUCTION OF REAL OR PERSONAL PROPERTY, WHETHER OWNED, LEASED, OR CHARTERED, OF ANY MEMBER OF BJ GROUP.

C. CUSTOMER SHALL RELEASE, INDEMNIFY, DEFEND AND HOLD BJ GROUP HARMLESS FROM AND AGAINST ANY AND ALL CLAIMS ARISING OUT OF OR RELATED TO (I) PERSONAL OR BODILY INJURY, ILLNESS, SICKNESS, DISEASE OR DEATH OF ANY MEMBER OF CUSTOMER GROUP, AND (II) LOSS, DAMAGE OR DESTRUCTION OF REAL OR PERSONAL PROPERTY WHETHER OWNED, LEASED, OR CHARTERED, OF ANY MEMBER OF CUSTOMER GROUP.

D. SUBJECT TO THE PERSONAL INJURY PROVISIONS OF ARTICLE 5(B) ABOVE, BJ SHALL PROTECT, DEFEND AND INDEMNIFY CUSTOMER GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS AND CAUSES OF ACTION, INCLUDING POLLUTION CLAIMS, ARISING FROM POLLUTION OR CONTAMINATION WHICH ORIGINATES ABOVE THE SURFACE OF THE LAND OR WATER AND IS DIRECTLY ASSOCIATED WITH BJ GROUP'S EQUIPMENT OR OTHER EQUIPMENT IN ITS CONTROL, AND SHALL ASSUME ALL RESPONSIBILITY FOR CONTROL AND REMOVAL OF SAME.

E. SUBJECT TO THE PERSONAL INJURY PROVISIONS OF 5(C) ABOVE, CUSTOMER SHALL PROTECT, DEFEND AND INDEMNIFY BJ GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION ARISING DIRECTLY OR INDIRECTLY FROM ANY EXISTING POLLUTION AT THE SITE AND FROM ALL OTHER POLLUTION OR CONTAMINATION, INCLUDING BUT NOT LIMITED TO POLLUTION RESULTING FROM FIRE, BLOWOUT, CRATERING, SEEPAGE OR OTHER UNCONTROLLED FLOW OF OIL, GAS, OR OTHER SUBSTANCE; OR RELATED TO THE TRANSPORTATION, STORAGE, TREATMENT, DISPOSAL OR HANDLING OF WASTE, AND SHALL ASSUME ALL RESPONSIBILITY FOR CONTROL AND REMOVAL OF SAME.

F. NOTWITHSTANDING ANYTHING TO THE CONTRARY HEREIN, CUSTOMER SHALL RELEASE, PROTECT, DEFEND, AND INDEMNIFY BJ GROUP FROM AND AGAINST ALL CLAIMS, DEMANDS, AND CAUSES OF ACTION OF EVERY KIND AND CHARACTER, IN THE EVENT OF CATASTROPHIC LOSSES INCLUDING BUT NOT LIMITED TO: (I) LOSS OR DAMAGE TO A HOLE(S) OR WELL(S), INCLUDING ITS CASING, (II) LOSS OR DAMAGE TO ANY GEOLOGICAL FORMATION, STRATA OR OIL OR GAS RESERVOIR OR MINERAL OR WATER RESOURCE, (III) IMPAIRMENT OF PROPERTY RIGHTS OR OTHER INTERESTS IN OR TO LAND, OIL, GAS, MINERAL, OR WATER RESOURCES, OR THE QUIET ENJOYMENT THEREOF, (IV) SUBSURFACE TRESPASS, (V) DAMAGE FROM ANY RADIOACTIVE SOURCES AND (VI) REGAINING CONTROL OF ANY WILD WELL OR OUT OF CONTROL WELL, UNDERGROUND OR ABOVE THE SURFACE, INCLUDING REMOVAL OF WRECK AND DEBRIS, MEDIATING ENVIRONMENTAL DAMAGE AND ALL COSTS RELATED THERETO.

G. CUSTOMER SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD BJ GROUP HARMLESS FROM AND AGAINST ANY CLAIMS FOR CONSEQUENTIAL DAMAGES ASSERTED BY OR IN FAVOR OF ANY MEMBER OF CUSTOMER GROUP. BJ SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ANY CLAIMS FOR CONSEQUENTIAL DAMAGES ASSERTED BY OR IN FAVOR OF ANY MEMBER OF BJ GROUP.

H. THE EXCLUSIONS OF LIABILITY, RELEASES AND INDEMNITIES SET FORTH IN THIS ARTICLE APPLY TO ANY CLAIM(S) WITHOUT REGARD TO THE CAUSE(S) THEREOF, INCLUDING BUT NOT LIMITED TO PRE-EXISTING CONDITIONS, WHETHER SUCH CONDITIONS BE PATENT OR LATENT, THE UNSEAWORTHINESS OF ANY VESSEL OR VESSELS, IMPERFECTION OF MATERIAL, DEFECT OR FAILURE OF PRODUCTS OR EQUIPMENT, BREACH OF REPRESENTATION OR WARRANTY (EXPRESS OR IMPLIED), ULTRA-HAZARDOUS ACTIVITY, STRICT LIABILITY, TORT, BREACH OF CONTRACT, BREACH OF DUTY (STATUTORY OR OTHERWISE), BREACH OF ANY SAFETY REQUIREMENT OR REGULATION, OR THE NEGLIGENCE, GROSS NEGLIGENCE, OR OTHER LEGAL FAULT OR RESPONSIBILITY OF ANY PERSON, PARTY, OR ENTITY (INCLUDING THE INDEMNIFIED OR RELEASEE).

BJ Services Terms and Conditions

PERSON, PARTY, OR ENTITY (INCLUDING THE INDEMNIFIED OR RELEASED PARTY), WHETHER SUCH FORM OF NEGLIGENCE BE SOLE, JOINT OR CONCURRENT, ACTIVE OR PASSIVE.

6. INSURANCE

EACH PARTY AGREES TO SUPPORT THE INDEMNITY OBLIGATIONS CONTAINED IN ARTICLE 5 BY CARRYING INSURANCE (OR QUALIFIED SELF-INSURANCE) WITH REPUTABLE INSURANCE COMPANIES IN THE FOLLOWING MINIMUM AMOUNTS:

A. WORKERS' COMPENSATION INSURANCE COMPLYING WITH APPLICABLE STATE, PROVINCIAL AND FEDERAL LAWS, AND EMPLOYERS' LIABILITY INSURANCE IN THE AMOUNT OF \$1,000,000 EACH ACCIDENT FOR BODILY INJURY BY ACCIDENT/\$1,000,000 EACH EMPLOYEE FOR BODILY INJURY BY DISEASE/\$1,000,000 POLICY LIMIT.

B. COMMERCIAL GENERAL LIABILITY INSURANCE INCLUDING PRODUCTS AND COMPLETED OPERATIONS AGGREGATE, SUDDEN AND ACCIDENTAL POLLUTION (WHICH MAY BE PROVIDED FOR IN A SEPARATE POLICY), IN THE AMOUNT OF \$1,000,000 COMBINED SINGLE LIMIT PER OCCURRENCE/\$2,000,000 IN THE AGGREGATE.

C. AUTOMOBILE LIABILITY INSURANCE IN THE AMOUNT OF \$1,000,000 COMBINED SINGLE LIMIT FOR BODILY INJURY AND PROPERTY DAMAGE, INCLUDING COVERAGE FOR ALL OWNED, HIRED, AND NON-OWNED VEHICLES.

D. EXCESS LIABILITY INSURANCE OVER THAT REQUIRED IN A (FOR EMPLOYER'S LIABILITY ONLY), B AND C IN THE MINIMUM AMOUNT OF \$5,000,000 EACH OCCURRENCE AND IN THE AGGREGATE, SPECIFICALLY INCLUDING CONTRACTUAL LIABILITY COVERAGE. UPON WRITTEN REQUEST, EACH PARTY SHALL FURNISH TO THE OTHER PARTY CERTIFICATES OF INSURANCE EVIDENCING THAT ADEQUATE INSURANCE TO SUPPORT EACH PARTY'S OBLIGATIONS HAS BEEN SECURED. TO THE EXTENT OF EACH PARTY'S RELEASE AND INDEMNITY OBLIGATIONS, EACH PARTY AGREES THAT ALL SUCH INSURANCE POLICIES SHALL (I) BE PRIMARY TO THE OTHER PARTY'S INSURANCE, (II) INCLUDE THE OTHER PARTY, ITS PARENT, SUBSIDIARY AND AFFILIATED OR RELATED COMPANIES, ITS SUBCONTRACTORS AND OTHER CONTRACTORS, AND ITS AND THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, CONSULTANTS AND AGENTS AS ADDITIONAL INSURED, AND (III) BE ENDORSED TO WAIVE SUBROGATION AGAINST THE OTHER PARTY, ITS PARENT, SUBSIDIARY AND AFFILIATED OR RELATED COMPANIES, ITS SUBCONTRACTORS AND OTHER CONTRACTORS, AND ITS AND THEIR RESPECTIVE OFFICERS, DIRECTORS, EMPLOYEES, CONSULTANTS AND AGENTS.

7. CONFIDENTIALITY

EACH PARTY SHALL MAINTAIN ALL DATA AND INFORMATION OBTAINED FROM THE OTHER PARTY IN STRICT CONFIDENCE, SUBJECT ONLY TO DISCLOSURE REQUIRED BY LAW OR LEGAL PROCESS. THE DESIGN, CONSTRUCTION, APPLICATION AND OPERATION OF BJS SERVICES AND PRODUCTS EMBODY PROPRIETARY AND CONFIDENTIAL INFORMATION. CUSTOMER SHALL MAINTAIN THIS INFORMATION IN STRICT CONFIDENCE AND SHALL NOT DISCLOSE IT TO OTHERS, SUBJECT ONLY TO DISCLOSURE REQUIRED BY LAW OR LEGAL PROCESS.

8. ACCESS TO WELL AND WELL SITE STORAGE

CUSTOMER SHALL PROVIDE AT ITS EXPENSE ADEQUATE ACCESS TO AND FROM THE WELL SITE, AND SHALL OBTAIN ALL PERMITS, LICENSES OR OTHER AUTHORIZATION REQUIRED FOR BI TO ENTER UPON WORK AREAS FOR THE PURPOSES CONTEMPLATED. CUSTOMER SHALL PROVIDE PROPER STORAGE SPACE AT THE WELL SITE, MEETING ALL APPLICABLE SAFETY AND SECURITY REQUIREMENTS AND CONSISTENT WITH GOOD INDUSTRY PRACTICES, FOR THE TOOLS AND PRODUCTS, INCLUDING, WITHOUT LIMITATION, ALL RADIOACTIVE MATERIALS. BI RESERVES THE RIGHT NOT TO PERFORM WORK IF THE JOB OR CONDITIONS OF THE LOCATION RENDER SUCH PERFORMANCE INADVISABLE.

9. STANDARD OF PERFORMANCE

A. SERVICES: BI WARRANTS (I) THAT ALL SERVICES SHALL BE PERFORMED IN COMPLIANCE WITH ALL LAWS, RULES AND REGULATIONS (INCLUDING ALL SAFETY CODES, STATUTES, REGULATIONS, PRECAUTIONS, AND PROCEDURES) AND UTILIZING ALL NECESSARY

ACCORDANCE WITH THE TERMS HEREOF, THE SPECIFICATIONS SET FORTH IN THE APPLICABLE ORDER, AND GOOD INDUSTRY STANDARDS OF PERFORMANCE AND IN A TIMELY MANNER; AND (II) THAT BI, ITS SUBCONTRACTORS AND THEIR EMPLOYEES ARE SUFFICIENTLY EXPERIENCED AND SUITABLY TRAINED TO PERFORM THE SERVICES. IN THE EVENT THAT THE SERVICES FAIL TO CONFORM TO SUCH SPECIFICATIONS, BI SHALL REPERFORM THAT PART OF THE NON-CONFORMING SERVICES, PROVIDED BI IS NOTIFIED IN WRITING BY CUSTOMER PRIOR TO DEMOBILIZATION.

B. PRODUCTS: BI WARRANTS THAT THE PRODUCTS SHALL CONFORM TO BJS PUBLISHED SPECIFICATIONS OR THE SPECIFICATIONS AGREED TO IN WRITING. IF ANY OF THE PRODUCTS FAIL TO CONFORM, BI SHALL REPAIR OR REPLACE THE NON-CONFORMING PRODUCTS, OR ISSUE CREDIT TO THE CUSTOMER. IN THE EVENT BI IS REQUESTED TO DEVELOP, MANUFACTURE, TEST OR USE PRODUCTS THAT ARE INTENDED TO SATISFY A UNIQUE NEED IDENTIFIED BY CUSTOMER AND ARE NOT "STANDARD" PRODUCTS OF BI ("SPECIALTY PRODUCTS"), CUSTOMER RECOGNIZES AND AGREES THAT SPECIALTY PRODUCTS MAY NOT HAVE OR CONTAIN THE SAME OR SIMILAR CHARACTERISTICS AS BJS STANDARD PRODUCTS, INCLUDING HISTORICAL PERFORMANCE AGAINST WHICH FUTURE PERFORMANCE CAN BE MEASURED. IN DEVELOPING, MANUFACTURING, TESTING AND USING ANY SPECIALTY PRODUCT, BI WILL BE RELYING UPON INFORMATION AND SPECIFICATIONS PROVIDED BY CUSTOMER REGARDING ITS UNIQUE NEEDS, AND WILL HAVE NO RESPONSIBILITY FOR THE DESIGN, MANUFACTURE OR ENGINEERING OF ANY SUCH SPECIALTY PRODUCT. UPON INSPECTION, IF THE SPECIALTY PRODUCT FAILS TO MEET THE SPECIFICATIONS AGREED TO IN WRITING BY CUSTOMER, THEN BI SHALL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING SPECIALTY PRODUCTS WITH THE TYPE ORIGINALLY FURNISHED TO CUSTOMER OR SUBSTITUTE WITH STANDARD PRODUCTS. BI'S WARRANTY OBLIGATIONS ARE NON-TRANSFERABLE AND VOID IF THE NON-CONFORMITY WERE CAUSED BY (I) CUSTOMER'S FAILURE TO PROPERLY STORE OR MAINTAIN THE PRODUCTS, (II) ABNORMAL WELL CONDITIONS, ABRASIVE MATERIALS, CORROSION DUE TO AGGRESSIVE FLUIDS OR INCORRECT SPECIFICATIONS PROVIDED BY CUSTOMER, (III) UNAUTHORIZED ALTERATION OF THE PRODUCTS, (IV) LOSS OR DAMAGE WHILE ON CUSTOMER'S SITE DUE TO ANY NEGLIGENCE, VANDALISM OR FORCE MAJEURE, OR (V) USE OR HANDLING BY CUSTOMER IN A MANNER INCONSISTENT WITH BI'S RECOMMENDATIONS. FURTHER, BI'S WARRANTY OBLIGATIONS SHALL TERMINATE IF CUSTOMER FAILS TO PERFORM ITS OBLIGATIONS UNDER THESE TERMS AND CONDITIONS. ALL TRANSPORTATION CHARGES AND REMOVAL AND REINSTALLATION CHARGES RELATED TO THE REPAIR OR REPLACEMENT OF NON-CONFORMING PRODUCTS SHALL BE BORNE BY CUSTOMER, INCLUDING SHIPMENT TO BI'S FACILITY.

C. GOODS: BI SHALL ASSIGN ANY VENDOR OR SUPPLIER'S WARRANTY TO CUSTOMER FOR ANY PRODUCTS OR GOODS PURCHASED, TO THE EXTENT SUCH WARRANTIES ARE ASSIGNABLE.

D. RECOMMENDATIONS: INTERPRETATIONS, RESEARCH, ANALYSIS, RECOMMENDATIONS, ADVICE OR INTERPRETATIONAL DATA (SPECIFICALLY INCLUDING, WITHOUT LIMITATION, ANY ENGINEERING DESIGNS, GEOLOGICAL STUDIES OR ANALYSIS, WELL PROGRAMS, RESERVOIR MODELS, PRODUCTION OPTIMIZATION OR MANAGEMENT PROGRAMS) ("RECOMMENDATIONS") FURNISHED BY BI ARE OPINIONS BASED UPON MODELS, PRODUCTION OPTIMIZATION OR MANAGEMENT PROGRAMS ("RECOMMENDATIONS") FURNISHED BY BI ARE OPINIONS BASED UPON INFERENCES FROM MEASUREMENTS, EMPIRICAL RELATIONSHIPS AND ASSUMPTIONS, AND INDUSTRY PRACTICE. THE INFERENCES, ASSUMPTIONS AND PRACTICES ARE NOT INFALLIBLE, AND WITH RESPECT TO WHICH PROFESSIONAL GEOLOGISTS, ENGINEERS, DRILLING CONSULTANTS, AND ANALYSTS MAY DIFFER. ACCORDINGLY, BI DOES NOT WARRANT THE ACCURACY, CORRECTNESS, OR COMPLETENESS OF ANY INTERPRETATIONS OR RECOMMENDATIONS, OR THAT RELIANCE ON ITS INTERPRETATIONS AND/OR RECOMMENDATIONS WILL ACCOMPLISH ANY PARTICULAR RESULTS. CUSTOMER ASSUMES FULL RESPONSIBILITY FOR THE USE OF SUCH RECOMMENDATIONS AND FOR ITS DECISIONS. OTHER THAN THE PROVISIONS IN THIS ARTICLE 9, BI MAKES NO WARRANTY OR GUARANTEE OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING NO IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE REGARDING ANY SERVICES, EQUIPMENT OR PRODUCTS. IN NO EVENT SHALL BI BE LIABLE FOR CONSEQUENTIAL DAMAGES INCURRED BY CUSTOMER GROUP AS A RESULT OF DEFECTIVE OR NON-CONFORMING SERVICES, EQUIPMENT OR PRODUCTS.

BJ Services Terms and Conditions

10. INTELLECTUAL PROPERTY

A. BJ INTENDS TO PROTECT ITS INTELLECTUAL PROPERTY. CUSTOMER SHALL NOT RESELL THE PRODUCTS (OR DRAWINGS RELATED THERETO) TO OTHERS OR REVERSE ENGINEER OR PERMIT OTHERS TO REVERSE ENGINEER FOR THE PURPOSE OF MANUFACTURING SIMILAR PRODUCTS. BJ OWNS AND HAS LEGAL RIGHTS TO PRACTICE CERTAIN COPYRIGHTS, TRADEMARKS, INDUSTRIAL DESIGNS, PATENTS OR PENDING APPLICATIONS ON CERTAIN TECHNOLOGY AND ITEMS RELATED TO THE SERVICES OR PRODUCTS FURNISHED. IN THE EVENT THAT BJ MAKES ANY IMPROVEMENTS ON SUCH TECHNOLOGY, THEN BJ SHALL OWN ALL SUCH IMPROVEMENTS, INCLUDING DRAWINGS, SPECIFICATIONS, CALCULATIONS AND OTHER DOCUMENTS.

B. BJ WARRANTS THAT THE USE OR SALE OF PRODUCTS WILL NOT INFRINGE VALID PATENTS OF OTHERS BY REASON OF THE USE OR SALE OF SUCH PRODUCTS, AND HEREBY AGREES TO RELEASE, DEFEND, INDEMNIFY AND HOLD CUSTOMER GROUP HARMLESS FROM AND AGAINST ALL CLAIMS FOR INFRINGEMENT OF ANY SUCH PATENT, PROVIDED THAT CUSTOMER SHALL PROMPTLY NOTIFY BJ IN WRITING UPON RECEIPT OF ANY CLAIM FOR INFRINGEMENT, OR UPON THE FILING OF ANY SUCH SUIT FOR INFRINGEMENT, WHICHEVER FIRST OCCURS, AND SHALL AFFORD BJ FULL OPPORTUNITY, AT BJ'S OPTION AND EXPENSE, TO ANSWER SUCH CLAIM OR THREAT OF SUIT, ASSUME THE CONTROL OF THE DEFENSE OF SUCH SUIT, AND SETTLE OR COMPROMISE SAME IN ANY WAY BJ SEES FIT. BJ DOES NOT WARRANT THAT SUCH PRODUCTS: (I) WILL NOT INFRINGE ANY SUCH PATENT WHEN NOT OF BJ'S MANUFACTURE, OR SPECIALLY MADE, IN WHOLE OR IN PART TO THE CUSTOMER'S DESIGN CERTIFICATIONS; OR (II) IF USED OR SOLD IN COMBINATION WITH OTHER MATERIALS OR APPARATUS OR USED IN THE PRACTICE OF PROCESSES, WILL NOT, AS A RESULT OF SUCH COMBINATION OR USE, INFRINGE ANY SUCH PATENT, AND BJ SHALL NOT BE LIABLE, AND CUSTOMER SHALL RELEASE, DEFEND, INDEMNIFY AND HOLD BJ HARMLESS FOR DAMAGES OR LOSSES OF ANY NATURE WHATSOEVER RESULTING FROM ALLEGED PATENT INFRINGEMENT ARISING PURSUANT TO (I) AND (II) ABOVE.

11. FORCE MAJEURE

IF EITHER PARTY IS UNABLE BECAUSE OF FORCE MAJEURE TO CARRY OUT ANY OF ITS OBLIGATIONS UNDER THESE TERMS AND CONDITIONS, OTHER THAN OBLIGATIONS TO PAY MONEY, THEN ON SUCH PARTY GIVING NOTICE AND PARTICULARS IN WRITING TO THE OTHER PARTY WITHIN A REASONABLE TIME AFTER THE OCCURRENCE OF THE CAUSE RELIED UPON, SUCH OBLIGATIONS SHALL BE SUSPENDED. "FORCE MAJEURE" SHALL INCLUDE ANY EVENT THAT IS BEYOND THE REASONABLE CONTROL OF THE PARTY SO AFFECTED INCLUDING, WITHOUT LIMITATION, ACTS OF GOD, LAWS AND REGULATIONS, GOVERNMENT ACTION, WAR, CIVIL DISTURBANCES, HUACK, PIRACY, CRIMINAL ACTION BY A THIRD PARTY, THREATS OR ACTS OF TERRORISM, STRIKES AND LABOR PROBLEMS, DELAYS OF VENDORS OR CARRIERS, LIGHTENING, FIRE, FLOOD, WASHOUT, STORM, BREAKAGE OR ACCIDENT TO EQUIPMENT OR MACHINERY, AND SHORTAGE OF RAW MATERIALS. IF ANY SUSPENSION DUE TO FORCE MAJEURE EXCEEDS TEN (10) CONSECUTIVE DAYS, EITHER PARTY MAY TERMINATE THESE TERMS AND CONDITIONS BY WRITTEN NOTICE TO THE OTHER PARTY AND CUSTOMER SHALL BE LIABLE FOR DEMOBILIZATION AND ANY OTHER REASONABLE COSTS INCURRED BY BJ INCIDENTAL TO SUCH TERMINATION.

12. LAWS, RULES, REGULATIONS, AND EXPORT CONTROL

BJ AND CUSTOMER AGREE TO COMPLY WITH ALL LAWS, RULES, REGULATIONS AND DECREES OF ANY GOVERNMENTAL OR REGULATORY BODY HAVING JURISDICTION OVER THE SERVICES OR PRODUCTS TO BE PROVIDED BY BJ OR THE WORK SITE OR THAT MAY OTHERWISE BE APPLICABLE TO BJ'S OR CUSTOMER'S PERFORMANCE UNDER THESE TERMS AND CONDITIONS. SERVICES AND PRODUCTS AND/OR RELATED TECHNICAL DATA COVERED BY THESE TERMS AND CONDITIONS MAY BE SUBJECT TO U.S. CANADIAN AND/OR FOREIGN TRADE CONTROLS. CUSTOMER AGREES THAT IT WILL NOT SELL, RE-EXPORT OR TRANSFER PRODUCTS AND/OR RELATED TECHNICAL DATA EXCEPT IN FULL COMPLIANCE WITH ALL GOVERNMENTAL REQUIREMENTS INCLUDING BUT NOT LIMITED TO ECONOMIC SANCTIONS AND EXPORT CONTROLS ADMINISTERED BY THE U.S. DEPARTMENT OF TREASURY, U.S. DEPARTMENT OF COMMERCE AND U.S. DEPARTMENT OF STATE.

CUSTOMER AGREES TO COMPLY WITH ALL BJ REQUESTS FOR TRADE COMPLIANCE INFORMATION, STATEMENTS, AND OTHER ASSURANCES INCLUDING, WITHOUT LIMITATION, REQUESTS FOR END USER AND ROUTED TRANSACTION CERTIFICATIONS. BJ RESERVES THE RIGHT TO REFUSE TO FULFILL ANY WORK ORDER OR OTHERWISE PERFORM UNDER THESE TERMS AND CONDITIONS IF BJ IN ITS SOLE DISCRETION DETERMINES THAT SUCH ACTION MAY VIOLATE ANY LAW OR REGULATION.

13. GOVERNING LAW, JURY WAIVER, AND VENUE

FOR ALL WORK PERFORMED ON A WORKSITE WITHIN THE UNITED STATES OF AMERICA, THIS MSA SHALL BE EXCLUSIVELY GOVERNED BY THE LAWS OF THE STATE OF TEXAS, WITHOUT REGARD TO ANY CHOICE OF LAWS OR CONFLICTS OF LAW PROVISIONS. VENUE SHALL BE EXCLUSIVELY IN THE STATE OR FEDERAL COURTS OF HARRIS COUNTY, TEXAS AND CUSTOMER CONSENTS TO PERSONAL JURISDICTION THEREIN. IN THE EVENT TEXAS LAW CANNOT BE APPLIED TO SUCH WORK, THE LAW OF THE STATE WHERE THE WORK WAS PERFORMED WILL GOVERN.

FOR ALL WORK PERFORMED ON A WORKSITE WITHIN CANADA, THIS MSA SHALL BE CONSTRUED AND THE LEGAL RELATIONS DETERMINED IN ACCORDANCE WITH THE LAWS OF THE PROVINCE OF ALBERTA. THE PARTIES AGREE TO SUBMIT TO BINDING ARBITRATION IN CALGARY, ALBERTA, CANADA. EACH PARTY WAIVES ANY OBJECTION THAT THE DESIGNATED COURTS ABOVE ARE AN INCONVENIENT FORUM OR VENUE. REFERENCES IN THESE TERMS AND CONDITIONS TO ANY ACT, LAW, STATUTE, RULE OR REGULATION SHALL BE DEEMED TO INCLUDE REFERENCES TO SUCH AS THE SAME MAY BE AMENDED, REPLACED, OR REENACTED FROM TIME TO TIME.

EACH PARTY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT IT MAY HAVE TO A TRIAL BY JURY IN RESPECT TO ANY ACTION, CLAIM, SUIT OR PROCEEDING ARISING OUT OF OR RELATING TO THESE TERMS AND CONDITIONS.

14. ASSIGNMENT

BJ SHALL HAVE THE RIGHT TO ASSIGN THESE TERMS AND CONDITIONS TO ANY OF ITS AFFILIATED COMPANIES WITHOUT THE CONSENT OF CUSTOMER.

15. GENERAL

FAILURE OF EITHER PARTY TO ENFORCE ANY OF THESE TERMS AND CONDITIONS SHALL NOT BE A WAIVER OF THE RIGHT TO ENFORCE THESE TERMS AND CONDITIONS. THESE TERMS AND CONDITIONS CONTAIN ALL REPRESENTATIONS OF THE PARTIES AND SUPERSEDES ALL PRIOR ORAL OR WRITTEN AGREEMENTS OR REPRESENTATIONS AND MAY ONLY BE AMENDED BY AN AGREEMENT EXECUTED BY BOTH PARTIES. IN THE EVENT OF CONFLICT BETWEEN THE PROVISIONS OF THESE TERMS AND CONDITIONS AND ANY OTHER TERMS IN CUSTOMER'S PURCHASE ORDERS, FIELD WORK ORDERS, WORK TICKETS, INVOICES, STATEMENTS, OR ANY OTHER TYPE OF MEMORANDUM OR OTHER DOCUMENTS USED BY CUSTOMER, WHETHER ORAL OR WRITTEN, THE PROVISIONS OF THESE TERMS AND CONDITIONS SHALL GOVERN.



Customer: James Owens
Field:
Well:
Lease:

Proposal : James Owens
Revision :
Date Prepared: 11/13/2018
District: Dickinson, ND

Item	Size	Weight	Thread	Grade	Depth
Casing	7	26-lb/ft		L-80	10,000'
Tie Back					
Liner					
Workstring				L-80	

Item	Qty	Material	Description of Equipment and Services	Unit Amount	Discount	Net Amount
Saleables						
1	1	H400213BB70STD	3BB Cement Retainer	\$2,080.00		\$2,080.00
2	1					
3	1					
4	1					
Saleables Total:						\$2,080.00

Rental & Service						
5	1	H400603500RT	K-1 Runing Tool - Per Run	\$ 300.00		\$300.00
6						
Rentals Total:						\$300.00

Personnel & Mileage						
7	1	10001347	Tool Supervisor First 8 Hrs	\$1,120.00		\$1,120.00
			Tool Supervisor Additional Hrs	\$140.00		
8	0	10005155	Round trip Mileage from Williston, ND (per mile)	\$3.75		
9	0	10073025	Environmental Waste Charge	\$247.50		
Personnel & Mileage Total:						\$1,120.00

Estimated Job Total less Tax: \$3,500.00

Elk River Consulting, LLC

532 S Clarkson St.

Denver, CO 80209

720-530-3198

Cost Estimate Description

Plug and Abandonment Cost Estimate Provided for Independence ND, LLC

- Jobsite supervision for the plugging and abandonment of a 6,000 ft. deep SWD
- Ensure job meets or exceeds all Tribal, state, and federal regulations and requirements
- Oversee jobsite safety and environmental compliance
- Supervise simultaneous operations with workover rig, cement team and all supporting equipment and personnel

Job Duration Estimate

3 Days

Costs

Consulting & Supervision, per day	\$1,300.00
Per Diem	\$100.00
Travel (1 Day)	\$1,300.00
Vehicle Mileage @ \$1.50/mile	\$450.00
Estimated Total	\$5,950.00

Neptune Operating Company
4402 13th St NW Lot 28
Garrison, ND 58540

January 19, 2019

Independence ND, LLC
301 1ST AVE E Bakersfield
New Town, ND 58763

Dear Mr. Johnson,

Please see below for details on Neptune Operating Company's estimate to provide service rig, BOP, and support equipment for the plug and abandonment of Independence ND's Prairie Chicken SWD #1. Our estimate is based on an estimated job duration of three days, but we've included our hourly and day rates for additional time and add-on services. Please contact me with any questions.

Sincerely,

Kelsey Mitchell

Equipment Description:

- Rig Details:
 - 250 Horsepower
 - Max pull rating: 250,000 lbs
 - Derrick Height: 104 ft
 - Base Beam
 - Hydraulic Catwalk
 - Triplex Mud Pump
 - Power Swivel
- Well Control:
 - 5,000 psi BOP
 - Accumulator
 - Choke manifold

Cost Detail:

- Rig Rate \$ 500/hr
- Toolpusher: \$750/day
- Additional Crew Member: \$75/hr
- Crew Travel: \$250/hr
- Circulating Equipment (5,000 psi pump, flat tank, and iron): \$1,000/day
- Rig Standby Rate \$3,000/day
- Pipe Wrangler, Racks: \$800/day
- Front End Loader, w/Attachments: \$275/day
- Power Swivel: \$750/day
- Rig Heater: \$275/day
- Light Plant: \$150/day

Cost Estimate Summary:

Rig Rate (500/hr for 3 days)	\$18,000
Toolpusher (\$750/day for 3 days)	\$2,250
Crew Travel (3 hrs/day for 3 days)	\$2,250
Rig Pump (\$1,000/day for 3 days)	\$3,000
Pipe Handling Equipment (\$800/day for 3 days)	\$2,400

3 – Day Estimated Total	\$27,900
--------------------------------	-----------------



Schlumberger Cementing

Company	Independence ND, LLC
Prepared For	James Owen
Well Name	Prairie Chicken SWD 1
Surface Location	47.6813469, -102.7603438

UWI Number	TBD
Well Master Number	TBD
Service from District	Williston
District Phone	720-255-1637
Proposal Number	v0
Date	11/13/2018
Primary Contact	Matthew Cleveland

Objective	Plug and Abandon Treatment: Squeezes and Plugs
-----------	--

Executive Summary – P&A

This proposal is in response to your inquiry to secure cementing services for Stab In.

The estimated total cost of our services is **\$21,281.48**. This proposal/agreement is only a summary of Schlumberger's offerings and any prices provided are for illustrative purposes only. Actual cost will be dependent on time, material and equipment used during the project and any costs associated with unanticipated circumstances. Taxes are not included and all dates and services are dependent on the availability of cementing services and credit approval from Schlumberger's credit department. Attached for your convenience is Schlumberger's Commercial and General Terms and Conditions for your consideration, the final version of which is subject to mutual agreement and management approval before execution.

This proposal shall remain valid for sixty (60) days from the submission date provided above and a minimum notice of twenty four (24) hours prior to a job is required to deliver quoted price(s).

Thank you for considering Schlumberger. Please do not hesitate to contact me with any questions or concerns.

Sincerely,

Matthew Cleveland
WIT Sales Engineer
MCleveland@exchange.slb.com
Office: +1 303 352 1225
Cell: +1 701 509 4409



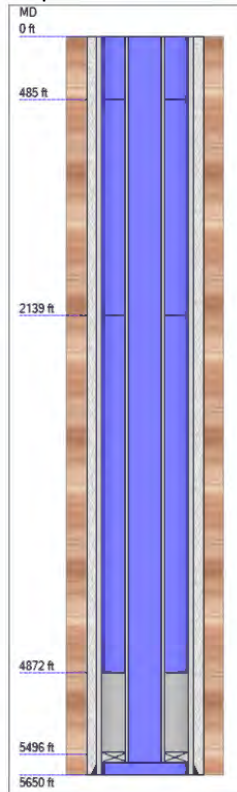
Schlumberger

Well Data – P&A

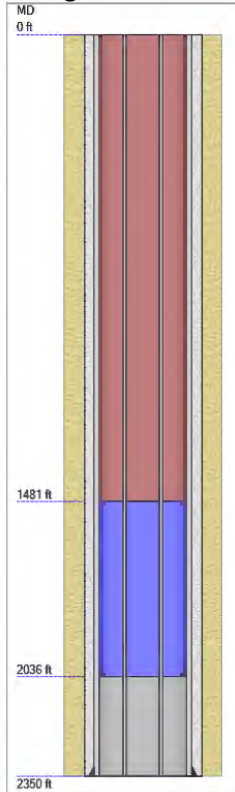
IMPORTANT

The well data shown on this page is based on information available when this treatment program was prepared. This data must be confirmed on location with the customer representative prior to the treatment. Any changes in the well design need to be reviewed for their impact on the treatment design.

Squeeze 1



Plug 2



Well Data

Job Type:	Stab In
Total Depth (Measured):	5,650.0 ft
TVD:	5,650.0 ft
BHST (Tubular Bottom Static Temperature):	150.0 degF
BHCT (Tubular Bottom Circulating Temperature):	150.0 degF
Drilling Fluid:	-

Open Hole

Excess Type	OH Diameter	MD	Annular Excess	Equiv. OH Diameter	Annular Capacity
Annular	8.750 in	5,650.0 ft	0.0 %	8.750 in	0.055 bbl/ft

Previous Casing

OD, in	Weight, lbm/ft	Grade	Inner Capacity, bbl/ft	Bottom Depth, ft	Casing Capacity, bbl/ft
7	26.0	P-110	0.038	5,650.0	0.03826

Drill Pipe

OD, in	Weight, lbm/ft	Grade	Inner Capacity, bbl/ft	Bottom Depth, ft	Casing Capacity, bbl/ft
2 7/8	6.8				

Fluid Systems – P&A

Fresh Water			
System	Wash		
Density	8.32 lb/gal		
Total Volume	217.2 bbl		
Additives	Code	Description	Concentration

15.8 ppg Squeeze Slurry (110 sacks, 94.0 lbm per sack of Blend) Squeeze 1			
System	Conventional		
Density	15.80 lb/gal		
Yield	1.16 ft ³ /sk		
Mix Water	5.10 gal/sk		
Mix Fluid	5.10 gal/sk		
Total Volume	22.7 bbl		
Additives	Code	Description	Concentration
	D907	Cement	94.00 lb/sk BWOB
	D013	Retarder	0.30 % BWOB
	D065	Dispersant	0.30 % BWOB

Contingency Additional Cement for Squeeze 1 (100 sacks, 94.0 lbm per sack of Blend)			
System	Conventional		
Density	15.80 lb/gal		
Yield	1.16 ft ³ /sk		
Mix Water	5.10 gal/sk		
Mix Fluid	5.10 gal/sk		
Total Volume	20.6 bbl		
Additives	Code	Description	Concentration
	D907	Cement	94.00 lb/sk BWOB
	D013	Retarder	0.30 % BWOB
	D065	Dispersant	0.30 % BWOB

15.8 Neat G (50 sacks, 94.0 lbm per sack of Blend) Plug 2			
System	Conventional		
Density	15.80 lb/gal		
Yield	1.16 ft ³ /sk		
Mix Water	5.13 gal/sk		
Mix Fluid	5.13 gal/sk		
Total Volume	10.2 bbl		
Additives	Code	Description	Concentration
	D907	Cement	94.00 lb/sk BWOB

15.8 Neat G (20 sacks, 94.0 lbm per sack of Blend) Top Out			
System	Conventional		
Density	15.80 lb/gal		
Yield	1.16 ft ³ /sk		
Mix Water	5.13 gal/sk		
Additives	Code	Description	Concentration
	D907	Cement	94.00 lb/sk BWOB

Some of the chemicals specified in this program may have toxic properties. All personnel should be familiar with the inherent dangers and appropriate safeguards to prevent accidental injury. Use of these chemicals may be governed by certain laws and regulations and should only be used in accordance with such. Please refer to the MSDS for the recommended safety precautions and required minimum personal protective equipment.



Schlumberger

Price Estimate – P&A

Primary Pricebook Code: BBVI

Equipment and Services						
Code	Standard Description	Quantity	Unit List Price	Total List Price \$	Discount Rate %	Discounted Price \$
48019100	Cement Bulk Unit	1 EA	1,380.00	1,380.00	12.00	1,214.40
49100000	Cement Service Charge	283 CF	2.80	792.40	12.00	697.31
49102000	Cement Transport	791 MI	2.50	1,977.50	12.00	1,740.20
58498001-JOB	Remedial Cementing Day Rate	1 JOB	9,500.00	9,500.00	12.00	8,360.00
59200002	Equipment Mileage	120 MI	5.91	709.20	12.00	624.10
59200005	Car/PU Mileage	120 MI	3.47	416.40	12.00	366.43
59697004	Job Monitoring	1 JOB	880.00	880.00	12.00	774.40
Subtotals:			USD	15,655.50	USD	13,776.84

Materials						
Code	Standard Description	Quantity	Unit List Price	Total List Price \$	Discount Rate %	Discounted Price \$
D013	Retarder	60 LB	3.30	198.00	12.00	174.24
D065	TIC Dispersant	60 LB	9.10	546.00	12.00	480.48
D907	Cement, Class G	280 CF	27.80	7,784.00	12.00	6,849.92
Subtotals:			USD	8,528.00	USD	7,504.64

Total List Price:	USD	24,183.50
Applied Discount:	USD	2,902.02
Job Price Estimate:	USD	21,281.48



Schlumberger

From: John Isom <john@cachetrucking.com>

Sent: Thursday, December 6, 2018 8:02 AM

To: James Owen

Subject: Re: Independence ND, LLC: P&A Estimate

Hi James

We bid on several PA jobs and we partnered with CnJ to do the cement

A rough all in cost was 100,000

Call me with any questions

John Isom

7016091442

R. NECESSARY RESOURCES

Independence ND will submit evidence such as a surety bond or financial statement to verify that the resources necessary to close, plug and abandon the well are available in the final draft of the application.

S. AQUIFER EXEMPTIONS

Independence ND has been unable to locate an analysis of a nearby Inyan Kara source well which would confirm the need for an aquifer exemption. Independence ND seeks to proceed with the permit application contingent on the requirement to sample and analyze the water from the well and receiving full EPA authorization prior to proceeding with an injection or a stimulation program.



T. EXISTING EPA PERMITS

Under 40 C.F.R. Section 124.3(a)(2), which incorporates by reference the application requirements of 40 CFR Section 144.31, this application is required to provide a listing of all permits or construction approvals received or applied for under any of the following programs:

- (i)§ 144.31(e)(6)(i) Hazardous Waste Management program under RCRA.
- (ii)§ 144.31(e)(6)(ii) UIC program under SDWA.
- (iii)§ 144.31(e)(6)(iii) NPDES program under CWA.
- (iv)§ 144.31(e)(6)(iv) Prevention of Significant Deterioration (PSD) program under the Clean Air Act.
- (v)§ 144.31(e)(6)(v) Nonattainment program under the Clean Air Act.
- (vi)§ 144.31(e)(6)(vi) National Emission Standards for Hazardous Pollutants (NESHAPS) preconstruction approval under the Clean Air Act.
- (vii)§ 144.31(e)(6)(vii) Ocean dumping permits under the Marine Protection Research and Sanctuaries Act.
- (viii)§ 144.31(e)(6)(viii) Dredge and fill permits under section 404 of CWA.
- (ix)§ 144.31(e)(6)(ix) Other relevant environmental permits, including State permits.

Hazardous Waste Management: The PRAIRIE CHICKEN SWD 1 will be a Class II Disposal well and not a treatment, storage or disposal facility requiring a TSD permit. Solid waste (including filter socks or oily waste from tank bottoms or filters) will be disposed of by contractors, currently including Clean Harbors and OWL.

UIC Permit: A permit application under the North Dakota UIC program will be submitted to the North Dakota Industrial Commission (NDIC).

NPDES Permit Program: The construction will involve more than one acre on the Fort Berthold Indian Reservation and will be managed in accordance with EPA's 2017 Construction and Development General Permit. Stormwater discharges during the operation of the installation will be managed in accord with EPA's multi-sector general permit (MSGP). An appropriate Stormwater Pollution Prevention Plan (SWP3) will be developed in accord with that permit. Additionally, the installation will not have a process wastewater discharge to surface waters.

Clean Air Act Permits: North Dakota is in attainment for criteria pollutants.

<https://www.epa.gov/green-book/green-book-national-area-and-county-level-multi-pollutant-information>

Additionally, the proposed installation will be powered electrically and will emit far less emissions needed to trigger the application for the PSD and NESHAPS programs.

Ocean Dumping Permits: Not applicable.

Dredge-fill permits: The proposed facility does not include jurisdictional wetlands and does not trigger the application of section 404 of the Clean Water Act.

Other permits: Biological & Cultural Resource Investigations have been performed and are detailed in Attachments T1 and T2.



BIOLOGICAL ASSESSMENT

PRAIRE CHICKEN SWD



Prepared for

Juniper, LLC
315 East Broadway Avenue
Bismarck, ND 58501

On behalf of
Independence ND, LLC, New Town, ND

Prepared by

Sedivec Natural Resource Consultation
Kevin K. Sedivec, Ph.D., Range Scientist/Botanist/Wildlife Biologist
373 – 160th Ave NE
Cummings, ND 58223

Date: October 1, 2018

**Bbiological Assessment
Attachment T1 (46 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

[Blank Page]

Table of Contents

List of Tables	iv
List of Figures	v
Executive Summary	1
Introduction.....	2
Consultation History.....	3
Project Location	3
Project Description.....	5
Impact Avoidance and Minimization Measures	6
Action Area	7
Species and Habitat Information.....	10
Species and Critical Habitat Addressed in BA	10
Federally Listed and Proposed Threatened and Endangered Species	10
Excluded Species: “No Effect”	10
Impacted Species.....	13
Critical Habitat	19
General Setting.....	20
Environmental Baseline.....	21
Terrestrial Species and Habitat	22
Aquatic Species and Habitat	23
Analysis of Effects	24
Direct Effects	24
Designated Critical Habitat	25
Indirect effects	25
Cumulative Effects	26
Conclusions and Effect Determinations.....	26
References	29
Appendices.....	33
Appendix A. Official Species List.....	34

List of Tables

Table 1. Consultation History..... 3

Table 2. Project proposer and location information of Action Area..... 4

Table 3. Threatened, endangered, candidate/proposed species with the potential to occur within the action/analysis area. The USDI Fish and Wildlife Service (2018b) species list was obtained and reviewed and species not having the potential to occur were excluded from further review with no effect determination..... 16

List of Figures

Figure 1. Area surveyed that included proposed Project Area in east-central McKenzie County, ND (Google Earth 2018).....	4
Figure 2. Location of Project Area and Analysis Area (Action Area) for the project Prairie Chicken SWD found in east-central McKenzie County, ND.	8
Figure 3. View of the Project Area that will be used for construction of the well pad showing new reclaimed pipeline, existing oil pad, and native grasslands. Picture was taken September 7, 2018.....	9

[Blank Page]

Executive Summary

Juniper Environmental Consulting is submitting this Biological Assessment (BA) to the Environmental Protection Agency, as part of a consultation process pursuant to Section 7(a)(2) of the Endangered Species Act (ESA). This BA was prepared by Sedivec Natural Resource Consultation in accordance with legal requirements set forth in Section 7 of the ESA (16 U.S.C. 1536; see also 50 CFR Part 402). This BA defines and evaluates the potential effects of constructing a new well pad on Section 31, Township 149N, R94W 5th P.M. in McKenzie County, North Dakota.

This specific activity constitutes of the Proposed Action for purposes of this consultation and evaluated for potential effects to listed and candidate species, or designated critical habitat found in McKenzie County. This activity on the site for pad development and associated land impacted by this project relates to: building a new well pad on land currently in a rangeland directly north of a maintained gravel road and between an active well pad and a ranch. This BA defines the Proposed Action on the land, and evaluates potential effects on listed and candidate species and their designated critical habitats attributed to the Proposed Action.

The land proposed for construction has had tremendous energy development occur to the west and within, and an active ranch to east. The area not disturbed is native rangeland classified as a Kentucky bluegrass (*Poa pratensis*)/needlegrass/wheatgrass/buffaloberry (*Shepherdia argente*) plant community. The Proposed Action area lies between the active oil well and the active ranch, and has a new pipeline development crossing directly across the southern region. A gravel borrow pit is also located in the southeast corner of the Project Area. The native upland prairie would be classified as poor to fair Dakota skipper (*Hesperia dacotae*; USDI Fish and Wildlife Service 2016).

The Proposed Area does lie within the piping plover and least tern breeding range (USDI Fish and Wildlife Service 2011); however, it doesn't lie within designated critical habitat (USDI Fish and Wildlife Service 2002). The Missouri River is designated critical habitat for piping plover (*Charadrius melodus*), a bird classified as a threatened species by the US Department of Interior Fish and Wildlife Service (1985). Piping plover and least tern may be found along the shores of

Missouri River and Lake Sakakawea. The Action Area is 10.5 miles from the shoreline of Lake Sakakawea, thus a “no impact” on these two birds was designated as no breeding or foraging habitat is found within the Action Area or 0.5 miles from Action Area, with closest large body of water 1.6 miles to the north.

Piping plover designated critical habitat is 11 miles from the Project Area and 10.5 miles from the Action Area, thus “no impact” on designated critical habitat. The nearest Dakota skipper designated critical habitat is ND Unit 12 in McKenzie County and found 28 miles from the Project Area. The nearest location of a historic Dakota skipper record is 1.25 miles west in east-central McKenzie County (USDI Fish and Wildlife Service 2016).

This project has “no effect” on all threatened and endangered species, candidate species, and designated critical habitat, except Dakota skipper, gray wolf (*Canis lupus*) and northern long-eared bat (*Myotis septentrionalis*). Marginal habitat for the Dakota skipper was present in the Proposed Area. Suitable habitat for the gray wolf and northern long-eared bat was not present within the Proposed Action area; however, habitat for these two species was found within the Action Area (0.5 mile radius of the Proposed Area), thus a “may impact, not likely to adversely affect” status was determined for these three species.

Introduction

This biological assessment (BA) analyzes the potential effects of the proposed construction of a well pad in east-central McKenzie County. The Endangered Species Act (ESA) of 1973 (16 U.S.C. 153 et seq.), as amended (ESA or Act) requires the need for a permit from a federal agency under federal jurisdiction to conserve and recover listed species and use their authorities to further the purposes of the Act by carrying out programs for the conservation of threatened and endangered species, candidate species, and critical habitat, and determine impacts (50 CFR § 402). The ESA directs all federal agencies to consult (referred to as section 7 consultation) with the US Fish and Wildlife Service (USFWS) when activities “may affect” a listed species or designated critical habitat (USDI US Fish and Wildlife Service 2018b). The Act also mandates that federal agencies contribute to the conservation of federally listed species by utilizing their authorities to conserve (recover) federally

listed species so that listing is no longer necessary. Federally, state, or locally listed threatened and endangered, candidate animal and plant species, and designated critical habitat meeting the following criteria are addressed in this assessment:

1. Known to occur in the McKenzie and Dunn Counties, based on confirmed sightings;
2. May occur in McKenzie and Dunn Counties, based on unconfirmed sightings;
3. Potential habitat exists for the species in McKenzie and Dunn Counties; or
4. Potential effects may occur to these species.

Consultation History

This section presents a brief summary of consultation history with a description of proposed actions identified. Consultation between Kevin Sedivec, Range Scientist/Wildlife Biologist and US Fish and Wildlife Service staff include the following correspondences, **Table 1**.

Table 1. Consultation History of Sedivec with agencies.

DATE	MEETING ATTENDEES	DISCUSSION
August 28, 29 2018	Kevin Shelley (USFWS, Region Director)	Discussions regarding biological assessments and threatened and endangered species.

Project Location

The proposed construction (Project Area) includes the development of a new well pad disturbing approximately 7.23 acres, with the pad 1.22 acres in size when completed, **Table 2**. The project is located in Township 149N, Range 94W, Section 31 (general latitude: 47°40'31" N, longitude: 102°45'04" W). The Project Area is in east-central McKenzie County, ND, and borders BIA Road 30 to the south. The area surveyed consisted of 25 acres from which the Project Area is located within, **Figure 1**.

Table 2. Project proposer and location information of Project and Action Area.

ITEM	DETAIL
Project proposer	Independence ND, LLC
Project name	PRAIRIE CHICKEN SWD
Project implementation/timeline	Construction commencing in Spring 2019, pending final approvals
Project duration	Contractor Dependent
Project type	Survey of Proposed Project Area, Analysis Area (0.5 mile radius of Project Area)
County/State	McKenzie County, North Dakota
Survey location	S31, T149N, R94W 25 acres for Project Area, 500 acres Analysis Area



Figure 1. Area surveyed that included proposed Project Area in east-central McKenzie County, ND (Google Earth 2018).

Project Description

This is standard well construction using standard construction equipment. The plat has the metric details as far as cut fill and disturbances. Anticipated spring 2019 construction with 30 day construction period. All work will be confined to the pad area not additional staging or equipment areas. The project is related to the overall development in the area and is not dependent upon certain project. It's interrelated too many different project because it is a disposal well location.

Impact Avoidance and Minimization Measures

Impact avoidance and minimization measures are discussed for threatened and endangered species, and candidate species that may be impacted during the construction phase of this project, and designated critical habitat impacted by the project. Although three species may occur (Dakota skipper, gray wolf, and northern long-eared bat) within the Action Area (Proposed Area and Analysis Area), no species would use the Proposed Area except the Dakota skipper. The impact would be “no effect” for all species; except Dakota skipper, northern long-eared bat and gray wolf.

Loafing and breeding habitat for Dakota skipper (upland prairie containing little bluestem (*Schizachryium scoparium*), prairie sandreed (*Calamovilfa longifolia*), flowering forbs) is present within the Action Area (Analysis and Project Area). Avoidance and minimization measures should be incorporated to eliminate or reduce the impact on the Dakota skipper habitat and include:

- 1) Avoid disturbance of native rangeland found within the Action Area.
- 2) If disturbing native rangeland containing little bluestem, black samson, tiger lily and prairie sandreed, disturb after September 1 when no adults will be present. Larvae would still be present, but no “take” of a live individual will occur.

The northern long-eared bat may use the green ash (*Fraxinus pennsylvanica*) draws (green ash trees with cavities may be used for roosting and nursey habitat) found within the Analysis Area (no green ash draws occurred in the Project Area). Avoidance and minimization measures should be incorporated to eliminate or reduce the impact on the northern long-eared bat and include:

- 1) Avoid removal of trees within the Analysis Area.
- 2) If trees need to be removed, they should be harvested between October 1 and April 1 when no adult northern long-eared bats are found in North Dakota.

Noise and human activity is high in this area and will deter the gray wolf, thus precluding the “may affect, not likely to adversely affect” status. An active oil well pad lies directly to the west

and an active ranch lies directly to the east, both within the Analysis Area, so human activity and noise is constant at this time. It will be impossible to reduce noise and human activity (minimization measure) due to the presence of the oil well pad and ranch, and the construction of this project. Impact avoidance would also be impossible during the construction phase of the project if a gray wolf migrated through. However, preferred habitat is plentiful away from the construction site to the south.

A resource protection area should be created on the adjacent disturbed pipeline area and could be used for large equipment, fuel, oil and storage tanks. This area shall be kept clean and free from discarded material. A closed loop fuel delivery system and dual-walled fuel storage tanks should prevent the spread of liquids in case of leaking in the tanks or piping. Such dike, curbed area or device shall have a capacity at least equal in volume to that of the tanks plus 10 percent.

After the project is completed, disturbed areas should be restored to pre-project conditions. Reclamation following the completion of the project should include trees planted to replace removed trees (if occur) and grasslands planted to match pre-project plant community. Consult the local NDSU County Extension office or USDA Natural Resource Conservation Service for recommended tree species and native plants to reclaim the disturbed area.

Action Area

The proposed location of the project spans a pipeline reclaimed area, small gravel pit and adjacent native rangelands that contain upland prairie with scattered buffalo berry shrubs throughout. The Action Area includes all areas directly or indirectly impacted by the proposed project. The Action Area includes the Project Area and Analysis Area, **Figure 2**. The Project Area refers to the vicinity of the proposed project disturbances. The Project Area includes the locations of the expected construction activities (~ 7 acres) and a reasonable buffer (~ 10 acres).

The Analysis Area (0.5-mile radius of the proposed project) for conducting this BA encompassed a larger area and was reviewed to provide documentation of the existing conditions to aid in the evaluation of cumulative effects. The Analysis Area includes native upland prairie, green ash draws,

gravel road (1), oil well pad (1), reclaimed pipeline, borrow gravel pit, and storage tank pad (1). **Figure 2** shows the Action Area which includes the Project Area (yellow boundary) and added Analysis Area (red boundary).

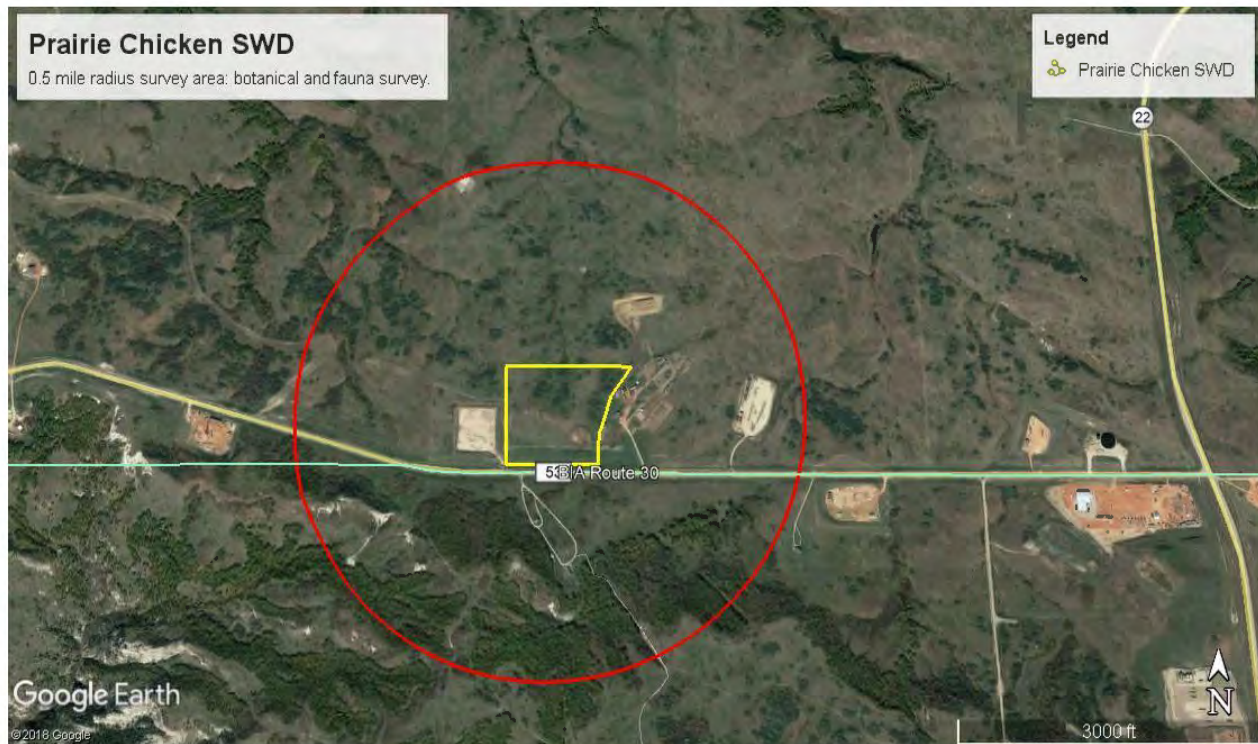


Figure 2. Location of Project Area and Analysis Area (Action Area) for the project Prairie Chicken SWD found in east-central McKenzie County, ND.

The native rangeland found within the Action Area was surveyed for Dakota skipper habitat and tree area found within the Analysis Area surveyed for northern long-eared bat habitat. Land uses, habitat, weeds, wildlife, and wildlife locations were identified and described. Structural features were identified with aerial photography and existing GIS data (GIS Hub, 2017). Their existence was verified in the field when reasonably accessible.

The vegetation in the Project Area was classified as native rangeland (see **Appendix A** for list of plant species found during the survey) with oil and gas development disturbance, **Figure 3**.

The rangeland was a loamy ecological sites and comprised approximately 50 percent of the area. The loamy prairie was classified as a Kentucky bluegrass/needlegrass/western wheatgrass/buffalo berry plant community and considered poor to fair Dakota skipper habitat (due to lack of desirable plant species); however, small inclusions of habitat occurred.

Green ash draws were common outside the Project Area and within the Analysis Area. Three green ash draws were found within the Analysis Area, **Figure 2**. Other tree species found in the draws include box elder (*Acer negundo*) and bur oak (*Quercus macrocarpa*). Although northern long-eared bats would rarely use this area due to distance from the Missouri River systems, these draws would be classify as habitat.



Figure 3. View of the Project Area that will be used for construction of the well pad showing new reclaimed pipeline, existing oil pad, and native grasslands. Picture was taken September 7, 2018.

Species and Habitat Information

Species and Critical Habitat Addressed in BA

Federally Listed and Proposed Threatened and Endangered Species

Assessments for federally listed Threatened and Endangered Species were conducted by evaluating historic and current occurrences and determining if potential habitat exists within the Project and Analysis Area. A determination was made concerning direct, indirect, and cumulative effects of the proposed activities on each species and designated critical habitat. Determinations made for federally listed species and critical habitat are:

“No effect”

“May affect, not likely to adversely affect”

“Beneficial impact”

“May affect, likely to adversely affect”

“Likely to jeopardize/adversely modify proposed species/critical habitat”

“Not likely to jeopardize the continued existence or adversely modify proposed critical habitat”

Potential impacts, avoidance, and mitigation practices are provided under the species discussion unless a *“no effect”* determination is made. If a determination of *“no effect”* is made, avoidance or mitigation practices are not necessary.

Excluded Species: “No Effect”

Species were excluded from further evaluation and discussion if habitat requirements and known range do not exist within the Project or Analysis Areas (Action Area), and lack of confirmed sightings of the species have been made within the designated area or near vicinity. Species excluded from further evaluation are listed in **Table 3**.

The black-footed ferret (*Mustela nigripes*), until recently, has been extirpated from North Dakota for decades. Although two individuals have been recently (2014) found along the North and South Dakota border near McLaughlin, South Dakota; no occurrences have been found in McKenzie County

for decades. The black-footed ferret also depends exclusively on prairie dog burrows for shelter (Black-footed Ferret Recovery Team, 2009; USDI Fish and Wildlife Service 2015a), with no known prairie dog colonies found within 0.5 miles of Action Area.

Historically, the rusty patched bumble bee (*Bombus affinis*) was broadly distributed across the eastern United States and Upper Midwest, from Maine in the U.S. and southern Quebec and Ontario in Canada, south to the northeast corner of Georgia, reaching west to the eastern edges of North and South Dakota. Since 2000, this bumble bee has been reported from only 13 states and 1 Canadian province: Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Minnesota, North Carolina, Ohio, Pennsylvania, Tennessee, Virginia, Wisconsin – and Ontario, Canada. Based on this bumble bees most westerly historic range being Stutsman County, ND, this bee has never been recorded as far west as Stutsman County (US Fish and Wildlife Service 2018b).

The western prairie fringed orchid (*Platanthera praeclara*) and Poweshiek skipperling (*Oarisma Poweshiek*) are not found in McKenzie County (USDI Fish and Wildlife Service, 2018b). The Poweshiek skipperling is classified as extirpated from North Dakota. No preferred habitat exists for either species within the Action Area.

Approximately 100 pairs of interior least tern (*Sternula antillarum*) breed and nest on sandbars along the Yellowstone and Missouri River systems in North Dakota (USDI Fish and Wildlife Service 2015b). The interior least tern nest is a small, bowl-shaped depression on barren sands. They nest in colonies, with nesting period between mid-May and mid-August. Least terns nest on barren to sparsely vegetated sandbars along rivers, sand and gravel pits, lake and reservoir shorelines, and occasionally gravel rooftops (USDI Fish and Wildlife Service 2015b). There were 706 least tern adults counted on the Missouri River in 2009, dropping below the threshold recognized as the recovery goal for the first time in four years (800 adults, as set in the 1990 Interior Least Tern Recovery Plan). Much of the “drop-in” populations may be attributable to higher storage levels in the reservoirs, particularly Lake Oahe and Lake Sakakawea (US Army Corps of Engineers, 2010). No preferred habitat exists within the Action Area for the least tern.

The pallid sturgeon is found in the Mississippi, Missouri, and Yellowstone River systems. Although the pallid sturgeon (*Scaphirhynchus albus*) has been historically found in the Missouri

River, the current recovery plan shows present day range from the confluence of the Yellowstone and Missouri River as the eastern most range in North Dakota, with the exception of the tailrace below the Garrison dam (Dryer and Sandvol 1993, USDI Fish and Wildlife Service 2014a).

Secondly, preferred habitat is the bottom of large, turbid, relatively warm, free-flowing rivers (Dryer and Sandvol 1993, Montana Fish, Wildlife and Parks 2014). No preferred habitat exists within the Action Area for the pallid sturgeon.

At one time during the 19th century, whooping cranes (*Grus americana*) nested in North Dakota. Currently, whooping cranes only migrate through North Dakota in the spring and fall. Along their migration route, whooping crane use large, shallow marshes for roosting and loafing while feeding in harvested grain fields. Pearse et al. (2015) identified 1,095 20-square-kilometer grid cells that contained stopover sites for whooping cranes and categorized occupied grid cells based on density of stopover sites and the amount of time cranes spent in the area. This assessment resulted in four categories of stopover site use: unoccupied, low intensity, core intensity, and extended-use core intensity. The Action Areas lie within the migration corridor of Aransas-Wood Buffalo whooping cranes (Esri, U.S. Fish and Wildlife Service, and U.S. Geological Survey digital data, various resolutions – taken from Pearse et al. 2015); however, the cells that this proposed project lies within are classified as unoccupied cells for whooping crane stopover use (Pearse et al. 2015), thus preferred habitat exists within the Action Area.

North Dakota's piping plover population was 496 breeding pairs in 1991, reducing to 399 breeding pairs by 1996; and 897 adults on Missouri River in 2009 (US Army Corps of Engineers, 2010). The USDI Fish and Wildlife Service (2011) reported approximately 75% of piping plovers in North Dakota nest on prairie alkali lakes and 25% use the Missouri River. However, Wiltermuth et al. (2015) showed piping plovers also use mainland and island shorelines of reservoirs that were created when large hydroelectric dams were constructed between 1940 and 1964. By 2005, 64 % of plovers counted along Missouri River used reservoir habitat, while 43 % of Missouri River plovers were observed at Lake Sakakawea (Wiltermuth et al 2015). No preferred habitat exists within the Action Area for the piping plover.

Red knot rufas (*Calidris canutus*) winter and migrate in large flocks containing hundreds of birds. While we can guess at some of the benefits of traveling in large flocks, such as protection from predators, we can also see the downside - susceptibility to habitat change and loss, oil spills, diseases, collisions with wind turbines, storms, and hunting. The red knot's life history depends on suitable habitat, food, and weather conditions from across the Western Hemisphere, from the extreme south of Tierra del Fuego to the far north of the central Canadian Arctic. Further, red knots need to encounter these favorable habitats, food, and weather conditions within narrow seasonal windows as the birds hopscotch along migration stopovers between wintering and breeding areas. For example, the red knot population decline that occurred in the 2000s was caused primarily by reduced food availability from increased harvests of horseshoe crabs, exacerbated by small changes in the timing that red knots arrived at the Delaware Bay. Red knots may also be particularly vulnerable to global climate change, which is likely to affect the arctic tundra ecosystem where the knots breed; the quality and quantity of coastal habitats due to rising sea levels; the quantity and timing of invertebrate food resources throughout the bird's range; and the severity, timing, and location of storm and weather patterns (USDI Fish and Wildlife Service 2013). Although recognized as a coastal bird, the red knot rufa has been sighted at four locations in North Dakota (NatureServe 2016). The closest location would be south of Bismarck along the Missouri River. Since the red knot rufa breeds in the tundra and the Arctic Cordillera in the far north of Canada, Europe, and Russia (Baker et al. 2013); these sightings would be classified as migratory sightings. No preferred habitat exists within the Action Area for the red knot rufas.

Impacted Species

Dakota skipper (*Hesperia dacotae*)

The Dakota skipper recently became protected under the ESA, listed threatened (final rule effective November 23, 2014; Federal Register Vol. 79, No. 206 (Oct. 24, 2014) with the closest proposed designated (Federal Register Vol. 78, No. 206, Oct. 24, 2013) critical habitat in McKenzie County. The Dakota skipper is a thick bodied, small butterfly with a one (1) inch wingspan. This small butterfly undergoes four stages of life; egg, larvae, pupa, and adult.

Adults emerge for an approximate three (3) week lifespan in June through July. During this time, females lay eggs on the understory of leaves, whereby eggs hatch into larvae (caterpillars) approximately ten (10) days later. Larvae inhabit at or below ground, feeding at night, summer through autumn, and are dormant through the winter, residing at the bases of native bunchgrasses.

Habitat requirements for the Dakota skipper include upland prairie environments that are dominated with bluestem grasses and diverse native flowering forb. High quality habitat is characterized by black samson (*Echinacea angustifolia*) along with abundant bluestem grasses and needlegrass. Dakota skippers are also found in moist bluestem prairie environments with wood lily (*Lilium philadelphicum*), harebell (*Campanula rotundifolia*), and smooth camas (*Zygadenus elegans*).

Royer (1988) described Dakota skipper preferred habitat as lightly grazed grasslands, favoring little bluestem (*Schizachyrium scoparium*) with diverse flowering native forb. Royer (1988) described critical habitat as rangeland or grassland containing diverse native forb plant species. Key forb species include black samson, tiger lily (*Lilium lancifolium*), and smooth camas. Upland preferred sites include a diverse plant community with a high concentration of black samson, as well as the presence of tiger lilies. Lowland preferred habitats almost always contain smooth camas (Royer 2014), as well as the presence of tiger lily. The dominate vegetation associated with this project was rangeland with a Kentucky bluegrass/needlegrass/western wheatgrass/buffalo berry plant community. These rangelands had some black samson, but no tiger lilies or smooth camas. This habitat type, although poor, would be classified as Dakota skipper habitat.

Gray Wolf (*Canis lupus*)

Gray wolves historically ranged throughout North America. With the exception of Minnesota, Wisconsin, Michigan, Montana, Idaho, and Washington, the gray wolf is absent from the lower 48 states. Although the gray wolf has been documented in North Dakota since 1990, their presence is sporadic and consisted of occasional dispersing animals from Minnesota and Manitoba, Canada

(USDI Fish and Wildlife Service 2008). The gray wolf's habitat varies from woodland to grasslands, but they generally avoid populated areas and areas with high road densities (Johnson 1999). The Project Area that would be impacted by the proposed project has a cropping history and currently seeded to a smooth brome grass/alfalfa hay mixture. Since gray wolf prefer wooded habitat, the green ash draws found within the Analysis Area would be classified as preferred habitat.

Table 3. Threatened, endangered, candidate/proposed species with the potential to occur within the Action and Analysis area. The USDI Fish and Wildlife Service (2018b) species list was obtained and reviewed, and species not having the potential to occur were excluded from further review with no effect determination.

SPECIES COMMON AND SCIENTIFIC NAME	STATUS ¹	POTENTIAL TO OCCUR	RATIONALE FOR EXCLUSION ²	HABITAT DESCRIPTION AND RANGE IN NORTH DAKOTA
ENDANGERED SPECIES				
Black-footed ferret (<i>Mustela nigripes</i>)	E	No	(HAB)	Requires expansive black-tailed prairie dog (<i>Cynomys ludovicianus</i>) colonies for food and habitat. 80 acres is the typical minimum black-tailed prairie dog colony size that can support the black-footed ferret. Black-footed ferrets were historically found in SW North Dakota; current occurrence is unlikely to questionable and no reintroduction sites have occurred in ND at this time.
Gray wolf (<i>Canis lupus</i>)	E	Yes	--	Has been documented in North Dakota since 1990s. Habitat varies from woodland to grassland, typically avoiding populated areas with high road densities.
Interior least tern (<i>Sterna antillarum</i>)	E	No	(HAB)	Sandbars along Yellowstone and Missouri River systems; nest in barren sands, in colonies.
Pallid sturgeon (<i>Scaphirhynchus albus</i>)	E	No	(HAB)	The Missouri River does support pallid sturgeon. Current range is from the confluence of the Yellowstone and Missouri River as the eastern most range in North Dakota with the exception of the tailrace below the Garrison dam. Preferred habitat is at the bottom of large, turbid, relatively warm, free-flowing rivers.
Poweshiek skipperling (<i>Oarisma poweshiek</i>)	E	No	(ODR/HAB)	Adult butterflies feed on nectar from prairie flowers; purple coneflower (<i>Echinacea angustifolia</i>), blackeyed susan (<i>Rudbeckia hirta</i>), and lobelia (<i>Lobelia spicata</i>). For larvae, native, fine-stemmed grasses and sedges (little bluestem (<i>Schizachyrium scoparium</i>) and prairie dropseed (<i>Sporobolus heterolepis</i>).
Whooping crane (<i>Grus Americana</i>)	E	No	(HAB)	Only migrate through North Dakota in spring and fall, using large, shallow marshes for roosting and loafing while feeding on harvested grain fields.

SPECIES COMMON AND SCIENTIFIC NAME	STATUS ¹	POTENTIAL TO OCCUR	RATIONALE FOR EXCLUSION ²	HABITAT DESCRIPTION AND RANGE IN NORTH DAKOTA
Rusty patched bumble bee (<i>Bombus affinis</i>)	E	No	(ODR/HAB)	Rusty patched bumble bees once occupied grasslands and tallgrass prairies of the Upper Midwest and Northeast, but most grasslands and prairies have been lost, degraded, or fragmented by conversion to other uses. Bumble bees need areas that provide nectar and pollen from flowers, nesting sites (underground and abandoned rodent cavities or clumps of grasses), and overwintering sites for hibernating queens (undisturbed soil).
THREATENED SPECIES				
Western fringed prairie orchid (<i>Platanthera praeclara</i>)	T	No	(ODR/HAB)	Mesic to wet unplowed tallgrass prairies and meadows; also found in old fields and road-ditches. This plant is known not to be found in North Dakota outside the southeast corner of the state.
Piping plover (<i>Charadrius melodus</i>)	T	No	(HAB)	Prefer sparsely vegetated sandbars and shorelines and large alkaline wetlands with shoreline. Breeding pairs exist; though have slightly decreased in past decades.
Dakota skipper (<i>Hesperia dacotae</i>)	T	Yes	-	Preferred habitat includes moist bluestem prairie with blooming wildflower species (wood lily (<i>Lilium philadelphicum</i>), harebell (<i>Campanula rotundifolia</i>) and smooth camas (<i>Zygadenus elegans</i>)); other preferred habitat is relatively dry upland prairie found on ridges and hillsides. In North Dakota, Dakota skippers are found in scattered, mostly isolated sites that are lightly grazed, favoring little bluestem with flowering native forbs.
Northern long-eared bat (<i>Myotis septentrionalis</i>)	T	Yes	-	Habitat varies by season; winter habitat requires caves or mines, summer habitat requires large trees for roosting, occasionally roost in barns or structures. This bat occurs in North Dakota from May through September. Green ash trees are found in the Analysis Area. These trees may provide suitable roosting and nursery habitat as some of these large trees contain holes and caverns. This project is found adjacent to their summer territory and the Missouri River is considered primary habitat in North Dakota.
Red knot rufa (<i>Calidris canutus</i>)	T	No	(HAB)	Shorelines during migration with a few occasional inland migrants. Four known locations with sightings found in North Dakota (NatureServe, 2016).

SPECIES COMMON AND SCIENTIFIC NAME	STATUS ¹	POTENTIAL TO OCCUR	RATIONALE FOR EXCLUSION ²	HABITAT DESCRIPTION AND RANGE IN NORTH DAKOTA
CRITICAL HABITAT				
Piping plover (<i>Charadrius melodus</i>) Unit 11 North Dakota Missouri River and Reservoirs	T	No	(HAB)-	Designated riverine and reservoir habitat in North Dakota includes Burleigh, Dunn, Emmons, McKenzie, McLean, Mercer, Morton, Mountrail, Oliver, Sioux, and Williams counties (USDI Fish and Wildlife Service, 2002).
Dakota skipper (<i>Hesperia dacotae</i>)	T	No	(HAB)	Prefer lightly grazed grasslands with little bluestem (<i>Schizachyrium scoparium</i>) with diverse flowering forbs. Flowering forb species include purple prairie coneflower (<i>Echinacea angustifolia</i>), tiger lily (<i>Lilium lancifolium</i>), and death camas (<i>Toxicoscordion venenosum</i>). There are 14 proposed designated critical habitat units within Ransom (2 units) Richland (1), Rolette (1), McHenry (6), McKenzie (3), and Wells (1) counties in North Dakota. None in Dunn County.
Poweshiek skipperling (<i>Oarisma poweshiek</i>)	T	No	(ODR/HAB)	Classified as extirpated from North Dakota.

¹**STATUS CODES:** E= federal listed endangered; T= federally listed threatened; P= federally proposed for listing; C= federal candidate for listing; CH= designated critical habitat

²**EXCLUSION RATIONALE CODES:** ODR= outside known distributional range of the species; HAB= no habitat present in analysis area; ELE= outside of elevational range of species; and SEA= species not expected to occur during the season of use/impact

Northern Long-eared Bat (*Myotis septentrionalis*)

During summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on suitability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures like barns, sheds, and bridge decks (USDI Fish and Wildlife Service 2014b). The Missouri River lies within this bat's primary range in North Dakota (USDI Fish and Wildlife Service 2014b). Green ash and bur oak trees found in the Analysis Area (not found in Project Area) will provide roosting and nursery habitat for the northern long-eared bat.

Critical Habitat

Piping Plover (*Charadrius melodus*) Designated Critical Habitat

The USDI Fish and Wildlife Service (2002) proposed areas of critical habitat to include prairie alkali wetlands and surrounding shoreline; river channels and associated sandbars and islands; and reservoirs and inland lakes and their sparsely vegetated shorelines, peninsulas, and islands. These areas provide primary courtship, nesting, foraging, sheltering, and brood-rearing and dispersal habitat for piping plovers. McKenzie County does have designated critical habitat associated with the Missouri River.

Nest locations on barren river sandbars are most likely selected due to their sparse vegetation and relatively narrow beaches (100 – 400 m wide). Adults and juveniles will head for the wintering grounds after fledging (when chicks learn to fly), with most piping plovers departing by the end of August.

Anteau et al. (2014a) summarized the literature on a priori predicted relationship with relative abundance of piping plover and showed piping plover prefer nesting on islands (Powell and Cuthbert, 1992; Anteau et al., 2012) and avoid nesting near high bluffs (> 25 m rise in elevation within 250 m of the shore). The Project Area contains a narrow beach (0.3 – 1 m) with a high bank (~ 3 m) directly adjacent to shoreline. Anteau et al. (2014b) also showed plovers almost completely avoided segments with high bluffs. Shaffer et al. (2013) also concluded plovers breeding on sandbars on the Missouri River avoid bluffs features. The Action Area does not contain designated critical habitat for piping plover.

As defined under the ESA, the environmental baseline includes past and present impacts of all federal, state, and private actions in the Action Area; the anticipated impacts of all proposed federal actions in the area that have undergone formal or early section 7 consultation; and the impact of state and private actions which are contemporaneous with the section 7 consultation process. Future actions and their potential effects are not included in the environmental baseline. This section in combination with the previous section defines the current status of the species and its habitat in the action area and provides a platform to assess the effects of the proposed action under consultation with the USDI Fish and Wildlife Service.

General Setting

A species list from the USDI Fish and Wildlife Service (2018b) with all federally listed and candidate species within McKenzie County, North Dakota was reviewed for this analysis. Using this list, we determined which of those species had a potential to occur within the Action Area. Species not known or with no potential of occurring in the Action Area are documented with rationale in **Table 3** and excluded. Excluded species have been dropped from further analysis by meeting one or more of the following conditions:

1. Species does not occur nor is expected in the Action Area during the time period activities would occur;
2. Occurs in habitats that are not present; and/or
3. Is outside of the geographical or elevation range of the species.

Work within the Action Area included an intensive survey for all Threatened and Endangered Species (TES), an evaluation of habitat components necessary to support these species, and documentation of land uses. Dr. Kevin Sedivec conducted a floristic- and faunal based complete search using a belt type transect survey (150 foot belt) and systematic survey of known habitat types. Search efforts were intensified in areas where threatened and endangered species were likely to occur. Intuitive directed searches were conducted in areas with homogenous habitats and vegetation. A complete observed species list of the surveyed areas was compiled during the field survey as required by the survey

protocol (**Appendix A**). Plant and wildlife species were identified in the field. Any unknown species were collected and later identified in the laboratory. Since rangeland was the dominant plant community within the Project Area, a similarity index to classify plant community type(s) was conducted using the USDA Natural Resource Conservation Service technical guideline (USDA Natural Resource Conservation Service (2018b)).

Environmental Baseline

The discussion of environmental baseline conditions will focus on habitat elements that are biological requirements of the species under consultation. Only those subsections that relate to this proposed project will be included. In general, the Environmental Baseline section of the BA should include:

State, tribal, local, and private actions already affecting the species or that will occur contemporaneously with the consultation. Unrelated federal actions affecting the same species or critical habitat that have completed formal or informal consultation are also part of the environmental baseline, as are federal and other actions within the action area that may benefit listed species or critical habitat. We provide:

1. A description of habitat for listed or proposed species in the Action Area and the amount of degradation that has occurred to date.
2. As much specific data as are reasonably available. This includes information from habitat inventories and surveys completed in the action area and the methods used.
3. A description of critical habitat and its condition if the action area includes designated or proposed critical habitat.
4. Maps and figures of specific relevant biological features relative to the proposed action (i.e., Permit and Action Areas).
5. Photographs when they can aid in describing environmental baseline conditions within the Permit and Action Areas.

Terrestrial Species and Habitat

The Project and Analysis Area has been impacted by human activity and disturbance for at least two decades. Since the proposed project area lies on previously disturbed land (cropped) and an active well pad and pad used for storage tanks lie within the Analysis Area – a high volume of disturbance has occurred.

Grasslands

The grassland portions of the Action Area comprise all of the Project Area and 50 percent of Analysis Area. Approximately 10 percent of this area was heavily disturbed through oil and gas development and ranching activities. The remaining grasslands are classified as native rangelands that were historically inhabited by the Dakota skipper. With the past actions of the federal, state, local government, and the private sector, very little preferred habitat exists for the Dakota skipper on the Project Area; however, poor to fair habitat occurs within the Action Area.

A visual estimate of species composition, by weight, was conducted on the plant community which could be used by the Dakota skipper. Approximately 80 percent of the rangeland is the loamy ecological site and 20 percent clayey (USDA Natural Resource Conservation Service 2018c). The thin loamy ecological site comprised 75 percent of the loamy site. The thin loamy and limy backslope ecological sites are often classified as the best sites to have preferred Dakota skipper habitat, as these site contain the highest levels of little bluestem (the preferred native grass for egg deposits, Royer 1988), contain needlegrasses, and have a diverse suit of native flowering forb – especially black Samson - which is the preferred plant for adults to rest on.

The thin loamy ecological site scored a similar index of 50 percent (on a scale of 0 – 100 percent) and classified as high fair condition. Native plants comprised 60 percent of the plant community, Kentucky bluegrass and smooth brome grass (exotic grasses) comprised 40 percent. Although needlegrasses [needle-and-thread (*Heterostipa comata*), green needlegrass (*Nassella viridula*), and porcupine grass (*Heterostipa spartea*) comprised 16 percent of the plant community, little bluestem comprised only 2 percent. The shrub community was high for a thin loamy site at 15 percent, predominantly buffalo berry. Shrubs are not preferred habitat for Dakota skipper, and actually reduce the sites value by replacing the grass/forb community.

Flowering native forbs were diverse and common, comprising approximately 10 percent of the community – which is classified as the normal range (USDA Natural Resource Conservation Service 2018b). Black samson was present at 1 percent of the plant community, while the other preferred forbs – tiger lily and smooth camas were absent. Noxious weeds were present (absinth wormwood and Canada thistle), but only 1-2 percent of the plant community.

Forest Community

The forested community is found within the three green ash draws in the Analysis Area (no forested area is found within the Project Area). The green ash draws are intact forest region and has been disturbed the least by human development, especially to the south (Google Earth, 2018). The forested area would provide habitat for the gray wolf and northern long-eared bat.

The woodland area comprised approximately 30 percent of the Analysis Area. These woodland areas would provide preferred habitat for the gray wolf. However, heavy vehicle traffic occurs on the gravel roads that lie adjacent (south) to the Project Area and an active oil well and ranch within the Analysis Area. The noise associated with these actives will likely deter a gray wolf from using this area. Also, the North Dakota Game and Fish Department has stated gray wolf sightings in North Dakota are rare with breeding populations known not to occur in North Dakota (North Dakota Game and Fish Department 2016), the likelihood of this area being used by a gray wolf is extremely low – especially with more contiguous woodlands found to the south that has less human impact or presence.

The forest community found within the Analysis Area can provide habitat for the northern long-eared bat. Habitat varies by season; but the summer habitat – when this species is found in North Dakota - requires large trees for roosting, occasionally roost in barns or structures, including bridges. Large trees (green ash and bur oak) are found in the Analysis Area.

Shoreline

No shoreline is found within the Action Area or within 0.5 miles of the Action Area.

Aquatic Species and Habitat

No aquatic habitat is found within the Action Area or within 0.5 miles of the Action Area.

Analysis of Effects

In this section, a review of the impacts to species that have the potential to occur within the permit area is provided. Effect determinations will be given for the federally listed species and critical habitat. This project may affect (directly or indirectly) Dakota skipper, gray wolf and northern long-eared bat.

Direct Effects

Dakota skipper, gray wolf, northern long-eared bat

Construction activities should have no direct effect on any threatened and endangered species or candidate species based on either no habitat or poor habitat found in the Project Area. Habitat does exist within the Project Area for Dakota skipper, and within the Analysis Area for the northern long-eared bat and gray wolf. The Dakota skipper habitat was classified as poor to fair, and with the closest known population 29 miles to north, the likely of a direct effect is low. Since no trees occur with the Project Area, no trees will be removed from the forested region (green ash draws used by northern long-eared bat and gray wolf).

The construction activity will increase noise and human activities which may deter adults from these three species from temporarily using the Action Area temporarily. These direct effects will only deter adults from using the adjacent habitat with risk of an actual “take” none.

There really are no measures within the scope of this project to minimize these direct effects of noise and human activities, as noise and human activity is already high in this area due to farming and ranching practices, and pumping and hauling oil from adjacent pads. Because this project involves building of a new well pad, the construction activities will not have any long-term impacts. There is sufficient habitat for foraging, resting and breeding directly north of the Action Area for adult Dakota skipper and west and south for northern long-eared bats to use when disturbed by noise and human activities.

When considering the recovery and management plans that are currently in place by the US Fish and Wildlife Service for the Dakota skipper and northern long-eared bats, this project will have no direct impact on these plans. These plans are designed to protect and enhance nesting and brood-rearing habitat for these species. Since required preferred habitat is known not to occur within the Project Area, this project should not impact these recovery and management plans.

Designated Critical Habitat

No designated critical habitat is found within the Action Area or within 0.5 miles of the Action Area.

Indirect effects

The indirect effects will be addressed by first answering the ten indirect effect questions in the guidance document. If any question results in a “yes” for a threatened and endangered species, we will follow the same exposure/response framework as the direct effects.

1. Will the project create a new facility? “Yes”. A new well pad will be installed near a current well pad. The well pad will be located on unsuitable habitat for all threatened and endangers species, including candidate species; thus this new facility will have no indirect effects.
2. Will the project improve a level of service of an existing facility as established in local GMA plans? “No” The project will not enhance new services as an access road and electrical power already exists near the site.
3. Determine if the transportation project has a causal relationship to a land use change by answering the following questions.
 - a. Is there a building moratorium in place that is contingent on the proposed improvement? “No”
 - b. Are there any land use changes tied by permit condition to the proposed improvement? “No”

-
- c. Do the project's NEPA documents identify other actions or land use changes caused by or resulting from the project that are reasonably certain to occur? I would assume "No". I am not privy to the NEPA document if one was written.
 - d. Do development plans include scenarios for the planning area where land use differs based on a "build" and "no build" outcome related to the proposed project? "No"
 - e. Is there land use change that is likely to occur at a different rate as a result of the project? "No"

Cumulative Effects

Cumulative effects are effects resulting from state and private activities that are reasonably certain to occur within the Action Area. This section is necessary only if listed resources will be adversely affected. Based on the baseline evaluation and determined effects, we do not see any resources adversely affected.

Conclusions and Effect Determinations

Dakota skipper (*Hesperia dacotae*)

The project will have ***"may effect, not likely to adversely affect"*** on the Dakota skipper. No Dakota skippers, as expected due to timing of survey, were observed during the field survey. Suitable habitat, although poor to fair based on plant species composition, occurred within the Action Area. The thin loamy plant community in the Action Area comprised contained small amounts of little bluestem (2 percent) in the plant community; however, was diverse in native flowering forbs, including black samsom – a desired forb in for suitable habitat. The nearest Dakota skipper designated habitat area was 28 miles to the north and the nearest historical record 1.25 miles west. The likelihood of this area being used by adult Dakota skippers is low, but could occur. This project is expected to disturb the rangeland plant community, but due to low quality habitat, a ***"not likely to adversely affect"*** was determined.

Gray Wolf (*Canis lupus*)

The project will have “**may effect, not likely to adversely affect**” on the gray wolf. No gray wolves were observed during the field survey. Although suitable habitat occurs within the Analysis Area, no known population exist in North Dakota. Due to the close vicinity to well-traveled graveled roads, an active well pad, and active ranch, if a transient gray wolf appears, they will likely be diverted away from this area.

Northern Long-eared Bat (*Myotis septentrionalis*)

The project will have a “**may affect, not likely to adversely affect**” determination on the northern long-eared bat. No northern long-eared bats were found during the survey period. However, the Missouri River, located 11 miles from proposed project area, is classified by the US Fish and Wildlife Service as primary range for this bat, specifically forested areas along the river. Suitable habitat in the form of large green ash trees were found within the Analysis Area based on this classification. The live and dead trees would provide primary roosting and nursery habitat for the northern long-eared bat.

The project proposal states no trees will be removed during the construction of this project. This will eliminate any chances of destroying an individual bat, thus this project is “**not likely to adversely affect**” the northern long-eared bat.

Interior Least Tern (*Sterna antillarum*)

The project will have “**no effect**” on the interior least tern. No interior least terns were observed during the field survey. No suitable habitat occurs in the Action Area.

Whooping Crane (*Grus Americana*)

The project will have “**no effect**” on the whooping crane. No whooping cranes were observed during the field survey; however, this was expected due to timing of survey. No suitable roosting habitat exists within the Action Area, and no small fields of harvested grain occur within Analysis Area. Although the whooping crane may fly over due to proximity of migration route, they will not land due to lack of foraging or loafing habitat.

Red knot rufa (*Calidris canutus*)

The project will have “*no effect*” on the red knot rufa. No red knot rufa were found during the survey period. This area is not within the breeding range of this species or migratory route. Only one sighting of a red knot rufa has occurred along the Missouri River south of Bismarck, ND.

Piping Plover (*Charadrius melodus*)

The project will have “*no affect*” to the piping plover. No piping plovers or nests were found within the Action Area and no designated critical habitat occurs within the Action Area.

Pallid Sturgeon (*Scaphirhynchus albus*)

The project will have “*no effect*” to the pallid sturgeon. No pallid sturgeon habitat occurs within the Analysis Area.

Piping Plover Critical Habitat

Since no piping plover critical habitat occurs within the Analysis Area, this project will “*not likely to jeopardize the continued existence or adversely modify proposed critical habitat*” for piping plover.

Dakota skipper Critical Habitat

Since no Dakota skipper critical habitat occurs within the Analysis Area, this project will “*not likely to jeopardize the continued existence or adversely modify proposed critical habitat*” for Dakota skipper.

References

- Anteau, M.J., M.H. Sherfy, and M.T. Wiltermuth. 2012. Selection Indicates Preference in Diverse Habitats: A Ground-Nesting Bird (*Charadrius melodus*) Using Reservoir Shoreline. PLoS ONE, 7(1) e30347. doi:10.1371/journal.pone.0030347.
- Anteau, M.J., M.T. Wiltermuth, M.H. Sherfy, T.L. Shaffer, and A.T. Pearse. 2014a. The role of landscape features and density dependence in growth and fledging rates of Piping Plovers in North Dakota, USA. *The Condor*, 116(2):195-204. DOI: <http://dx.doi.org/10.1650/CONDOR-13-001-R1.1>.
- Anteau, M.J., T.L. Shaffer, M.T. Wiltermuth, and M.H. Sherfy. 2014b. Landscape selection by piping plovers has implications for measuring habitat and population size. *Landscape Ecol* (2014) 29:1033–1044 DOI 10.1007/s10980-014-0041-z.
- Black-footed Ferret Recovery Team. 2009. Black-footed ferret recovery strategies and timeline. Black-footed Ferret Recovery Program. <http://www.blackfootedferret.org/strategy-timeline.htm>. Revised May 2009.
- Baker, Allan; Gonzalez, Patricia; Morrison, R.I.G.; Harrington, Brian A. (2013). Poole, A., ed. "Red Knot (*Calidris canutus*)". *The Birds of North America Online*. Ithaca: Cornell Lab of Ornithology. doi:10.2173/bna.563. Retrieved 27 April 2009.
- Dryer, M.P. and A.J. Sandvol. 1993. Recovery plan of the pallid sturgeon (*Scaphirhynchus albus*). USDI Fish and Wildlife Service. Region 6, Denver CO. 64 pp.
- Google Earth. 2018. Aerial imagery. Earth.google.com. Accessed September, 2018.
- Johnson, K.D. 1999. Return of the wolf? Northern Prairie Wildlife Research Center, Jamestown, ND. *North Dakota Outdoors* 61(8):14-16. <http://www.npwrc.usgs.gov/resource/mammals/wolfrtn/index.htm> (Version 05MAY99).
- Montana Fish, Wildlife & Parks. 2014. Pallid Sturgeon. <http://fwp.mt.gov/fishAndWildlife/species/endangered/pallidSturgeon/>
- NatureServe. 2016. Species Quick Search. <http://natureserve.org/explorer/>.
- North Dakota Game and Fish Department. 2016. Gray Wolf. <https://gf.nd.gov/wildlife/id/carnivores/wolf>. Bismarck, ND. Accessed September 11, 2018.

-
- North Dakota GIS Hub. 2017. North Dakota Geographic Information Systems. North Dakota GIS Hub Data Portal. <http://www.apps.state.nd.us/hubdaraportal/srv/en/main.home>.
- Pearse, A.T., Brandt, D.A., Harrell, W.C., Metzger, K.L., Baasch, D.M., and Hefley, T.J., 2015, Whooping crane stop over site use intensity within the Great Plains: U.S. Geological Survey Open-File Report 2015–1166, 12 p., <http://dx.doi.org/10.3133/ofr20151166>. ISSN: 2331-1258 (online).
- Powell A.N. and F.J. Cuthbert. 1992. Habitat and reproductive success of piping plovers nesting on Great Lakes islands. *Wilson Bull* 104:155–161.
- Shaffer T.L., M.H. Sherfy, M.J. Anteau, J.H. Stucker, M.A. Sovada, E.A. Roche, M.T. Wiltermuth, T.K. Buhl, and C.M. Dovichin. 2013. Accuracy of the Missouri River least tern and piping plover monitoring program: considerations for the future. U.S. Geological Survey Open File Report 2013-1176.
- The Auk: Ornithological Advances. 2016. Checklist of North American Birds. 7th Edition and its supplements. Accessed September 9, 2018. www.aoucospubs.org
- US Army Corps of Engineers. 2010. "Missouri River Recovery Program Emergent Sandbar Habitat Complexes in the Missouri River, Nebraska and South Dakota, Draft - Project Implementation Report (PIR) with Integrated Environmental Assessment". District. Paper 45. <http://digitalcommons.unl.edu/usarmycomaha/45>.
- USDA Natural Resources Conservation Service. 2018a. Plants Database. Accessed September 11, 2018. <http://www.plants.usda.gov/java>.
- USDA Natural Resources Conservation Service. 2018b. Ecological site descriptions for rangeland and forestland data. Accessed October 2, 2018. <https://esis.sc.egov.usda.gov/Welcome/pgReportLocation.aspx?type=ESD>
- USDA Natural Resources Conservation Service. 2018c. Web soil survey. Accessed October 3, 2018. <https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>
- USDI Fish and Wildlife Service. 1985. Determination of endangered and threatened status for the piping plover. *Federal Register* 50:50726-50734.

-
- USDI Fish and Wildlife Service, 2002, Designation of Critical Habitat for the Great Plains Breeding Population of Piping Plover; Fact Sheet: Designated Critical Habitat by County, U.S. Fish and Wildlife Service, Mountain-Prairie Region (August 29, 2002), Accessed July 1, 2016, http://www.fws.gov/mountainprairie/species/birds/pipingplover/fact_sheet_designation_of_critical_habitat.htm
- USDI Fish and Wildlife Service. 2008. Gray wolf (*Canis lupus*). Dept. of the Interior, US Fish and Wildlife Service, North Dakota Field Office, Mountain-Prairie Region. http://www.fws.gov/northdakotafieldoffice/endspecies/species/gray_wolf.htm.
- USDI Fish and Wildlife Service. 2011. Piping plover (*Charadrius melodus*). Dept. of the Interior, US Fish and Wildlife Service, North Dakota Field Office, Mountain-Prairie Region. http://www.fws.gov/northdakotafieldoffice/endspecies/species/piping_plover.htm. Updated March 14, 2011.
- USDI Fish and Wildlife Service. 2013. Rufa red knot (*Calidris canutus rufa*). https://www.fws.gov/northeast/redknot/pdf/Redknot_BWfactsheet092013.pdf
- USDI Fish and Wildlife Service 2014a. Revised RECOVERY PLAN for the Pallid Sturgeon (*Scaphirhynchus albus*). Mountain-Prairie Region U.S. Fish and Wildlife Service Denver, CO. January 2014. http://ecos.fws.gov/docs/recovery_plan.
- USDI Fish and Wildlife Service 2014b. Northern Long-Eared Bat (*Myotis septentrionalis*) Fact Sheet. <http://www.fws.gov/midwest/endangered/mammals/nlba/nlbaFactSheet.html>
- USDI Fish and Wildlife Service. 2015a. Black-footed Ferret (*Mustela nigripes*). Dept. of the Interior, US Fish and Wildlife Service, Mountain-Prairie Region. <https://www.fws.gov/mountain-prairie/factsheets/black-footed-ferret.pdf>. Updated October 2015.
- USDI Fish and Wildlife Service. 2015b. Least tern (*Sterna antillarum*). Dept. of the Interior, US Fish and Wildlife Service, Midwest Region. <https://www.fws.gov/midwest/endangered/birds/leasttern/IntLeastTernFactSheet.html>. Updated April 14, 2015.
- USDI Fish and Wildlife Service. 2016. Guidance for Interagency Cooperation under Section 7(a)(2) of the Endangered Species Act for the Dakota Skipper, Dakota Skipper Critical Habitat, and Poweshiek Skipperling Critical Habitat Version 1.1. <https://www.fws.gov/Midwest/endangered/insects/dask/pdf/DakotaSkipperS7GuidanceV1.1.pdf>. Accessed September 11, 2018.

-
- USDI Fish and Wildlife Service. 2017. Rusty Patched Bumble Bee (*Bombus affinis*). . Dept. of the Interior, US Fish and Wildlife Service, Washington, DC 20240.
<https://www.fws.gov/midwest/endangered/insects/rpbb/pdf/RPBBFactSheet10Jan2017.pdf>.
Accessed September 11, 2018.
- USDI Fish and Wildlife Service. 2018a. Dakota Skipper (*Hesperia dacotae*) Fact Sheet.
<http://www.fws.gov/midwest/endangered/insects/dask.html>
- USDI Fish and Wildlife Service. 2018b. County occurrence of endangered, threatened and candidate species and designated critical habitat in North Dakota. Dept. of the Interior, US Fish and Wildlife Service, Washington, DC 20240.
<http://www.fws.gov/northdakotafieldoffice/SEtable.pdf>.
- Wiltermuth, M.T., M.J. Anteau, M.H. Sherfy, and A.T. Pearse. 2015. Habitat selection and movements of Piping Plover broods suggest a tradeoff between breeding stages. J Ornithol (2015) 156:999–1013 DOI 10.1007/s10336-015-1227-0.

Appendices

Appendix A. Official Species List

FLORAL SURVEY FORM			
Area Surveyed (acres): 500 acres within Analysis Area.		Survey Type: Belt transect and full area; systematic and focused	
Scientific Name ¹	Common Name	Date	Project Site
ACERACEAE - Elm Family		7-Sept. 2018	PRAIRIE CHICKEN SWD
<i>Acer negundo</i>	Box-elder		
AMARANTHACEAE – Goosefoot Family			
<i>Amaranthus albus</i>	Prostrate pigweed		
ANACARDIACEAE – Sumac Family			
<i>Toxicodendron rydbergii</i>	Posion ivy		
ASCLEPIADACEAE- Milkweed Family			
<i>Asclepias syriaca</i>	Common milkweed		
<i>Asclepias viridiflora</i>	Green comet milkweed		
ASTERACEAE - Sunflower Family			
<i>Achillea millefolium</i>	Common yarrow		
<i>Ambrosia psilostachya</i>	Western ragweed		
<i>Antennaria neglecta</i>	Field pussytoes		
<i>Arctium minus</i>	Lesser burdock		
<i>Artemisia absinthium</i>	Absinth wormwood		
<i>Artemisia cana</i>	Silver sagebrush		
<i>Artemisia dracunculus</i>	Silky wormwood		
<i>Artemisia frigida</i>	Prairie sagewort		
<i>Artemisia ludoviciana</i>	Cudweed sagewort		
<i>Cirsium arvense</i>	Canada thistle		
<i>Cirsium flodmanii</i>	Flodmans thistle		
<i>Cirsium undulatum</i>	Wavyleaf thistle		
<i>Conyza canadensis</i>	Canadian horseweed		
<i>Dyssodia papposa</i>	Fetid marigold		
<i>Echinacea angustifolia</i>	Black samson		
<i>Erigeron philadelphicus</i>	Philadelphia fleabane		
<i>Erigeron strigosus</i>	Prairie fleabane		

<i>Gaillardia aristata</i>	Blanketflower
<i>Grindelia squarrosa</i>	Curlycup gumweed
<i>Helianthus annuus</i>	Common sunflower
<i>Helianthus maximiliani</i>	Maximilian sunflower
<i>Helianthus parviflorus</i>	Stiff sunflower
<i>Heterotheca villosa</i>	Hairy false goldenaster
<i>Lactuca serriola</i>	Prickly lettuce
<i>Lactuca tatarica</i>	Blue lettuce
<i>Liatris punctata</i>	Dotted gayfeather
<i>Lygodesmia juncea</i>	Rush skeletonplant
<i>Machaeranthera pinnatifida</i>	Lacy tansyaster
<i>Oligoneuron rigidum</i>	Stiff goldenrod
<i>Ratibida columnifera</i>	Upright prairie coneflower
<i>Solidago missouriensis</i>	Missouri goldenrod
<i>Solidago mollis</i>	Soft goldenrod
<i>Solidago nemoralis</i>	Gray goldenrod
<i>Symphyotrichum ericoides</i>	White heath aster
<i>Symphyotrichum lanceolatum</i>	White panicle aster
<i>Symphyotrichum oblongifolium</i>	Aromatic aster
<i>Taraxacum officinale</i>	Dandelion
<i>Tragopogon dubius</i>	Goatsbeard
BORAGINACEAE - Borage Family	
<i>Lappula occidentalis</i>	Flatspine stickseed
<i>Onosmodium bijariense</i>	Western marbleseed
BRASSICACEAE - Mustard Family	
<i>Arabis holboellii</i>	Rockcress
<i>Descurainia sophia</i>	Herb sophia
<i>Erysimum asperum</i>	Western wallflower
<i>Lepidium densiflorum</i>	Peppergrass
CAPRIFOLIACEAE - Honeysuckle Family	
<i>Symphoricarpos occidentalis</i>	Western snowberry
CARYOPHYLLACEAE – Carnation Family	
<i>Silene antirrhina</i>	Sleepy silene
CHENOPODIACEAE - Goosefoot Family	
<i>Bassia scoparia</i>	Burningbush
<i>Chenopodium album</i>	Lamb's quarters

<i>Chenopodium glaucum</i>	Oakleaf goosefoot
<i>Salsola kali</i>	Russian thistle
CONVOLVULACEAE – Morning glory Family	
<i>Convolvulus arvensis</i>	Field bindweed
CUPRESSACEAE – Conifer Family	
<i>Juniperus communis</i>	Common juniper
<i>Juniperus horizontalis</i>	Creeping juniper
CYPERACEAE – Sedge Family	
<i>Carex filifolia</i>	Threadleaf sedge
<i>Carex inops</i>	Sun sedge
ELAEGANACEAE – Oleaster Family	
<i>Shepherdia argentea</i>	Silver buffaloberry
FAGACEAE – Beach Family	
<i>Quercus macrocarpa</i>	Bur oak
FABACEAE - Legume Family	
<i>Astragalus flexuosus</i>	Flexile milkvetch
<i>Dalea purpurea</i>	Purple prairie clover
<i>Dalea villosa</i>	Silky prairie clover
<i>Glycyrrhiza lepidota</i>	Wild licorice
<i>Lotus unifoliolatus</i>	American bird's-foot trefoil
<i>Melilotus officinalis</i>	Yellow sweet clover
<i>Pedimelum argophyllum</i>	Silver-leaf scurfpea
<i>Thermopsis rhombifolia</i>	Prairie thermopsis
<i>Vicia americana</i>	American vetch
LAMIACEAE - Mint Family	
<i>Hedeoma hispida</i>	Rough false pennyroyal
<i>Nepeta cataria</i>	Catnip
<i>Monarda fistulosa</i>	Wild bergamot
LINCEAE – Flax Family	
<i>Linum lewisii</i>	Prairie flax
MALVACEAE - Mallow Family	
<i>Sphaeralcea coccinea</i>	Scarlet globemallow

OLEACEAE - Olive Family

Fraxinus pennsylvanica

Green ash

ONAGRACEAE - Evening Primrose Family

Gaura coccinea

Scarlet gaura

Oenothera biennis

Common evening primrose

OXALIDACEAE - Wood Sorrel Family

Oxalis latifolia

Broadleaf woodsorrel

POACEAE - Grass Family

Agropyron critsatum

Crested wheatgrass

Agrostis stolonifera

Creeping bentgrass

Andropogon gerardii

Big bluestem

Aristida purpurea

Purple threeawn

Bouteloua curtipendula

Sideoats grama

Bouteloua gracilis

Blue grama

Bromus arvensis

Field brome

Bromus inermis

Smooth brome

Calamovilfa longifolia

Prairie sandreed

Dichanthelium wilcoxianum

Fall rosette grass

Distichlis spicata

Saltgrass

Elymus caninus

Bearded wheatgrass

Elymus lanceolatus

Thickspike wheatgrass

Elymus repens

Quackgrass

Elymus trachycaulus

Slender wheatgrass

Hesperostipa comata

Needle-and-thread

Hesperostipa spartea

Porcupinegrass

Hordeum jubatum

Foxtail barley

Muhlenbergia cuspidata

Plains muhly

Nassella viridula

Green needlegrass

Pascopyron smithii

Western wheatgrass

Poa compressa

Canada bluegrass

Poa palustris

Fowl bluegrass

Poa pratensis

Kentucky bluegrass

Schizachyrium scoparium

Little bluestem

Setaria pumila

Yellow foxtail

Sporobolus heterolepis

Prairie dropseed

Thinopyrum intermedium

Intermediate wheatgrass

POLYGONACEAE – Knotweed Family

Eriogonum flavum

Polygonum achoreum

Rumex crispus

Alpine golden buckwheat

Leathery knotweed

Curly dock

RANUNCULACEAE – Buttercup Family

Anemone cylindrica

Pulsatilla patens

Candle anemone

Eastern pasqueflower

ROSACEAE - Rose Family

Prunus americana

Prunus pumila

Prunus virginiana

Rosa arkansana

Rosa woodsii

Rubus idaeus

American plum

Western sandcherry

Chokecherry

Prairie rose

Wood's rose

American red raspberry

RUBIACEAE – Coffee Family

Galium aparine

Stickywilly

SANTALACEAE – Sandalwood Family

Comandra umbellata

Bastard toadflax

SAXIFRAGACEAE – Saxifrage Family

Heuchera richardsonii

Richardson's alumroot

SOLANACEAE – Nightshade Family

Physalis virginiana

Virginia ground cherry

ULMACEAE - Elm Family

Ulmus pumila

Siberian elm

URTICACEAE – Nettle Family

Urtica dioica

Stinging nettle

¹ Plant nomenclature was determined using the USDA Plants Database (USDA Natural Resources Conservation Service 2018a).

BIRD SURVEY FORM		
Area Surveyed (acres): 500 acres within Analysis Area.		Survey Type: Belt transect and full area; systematic and focused
Scientific Name ¹	Common Name	
<i>Ammodramus savannarum</i>	Grasshopper sparrow	
<i>Hirundo rustica</i>	Barn swallow	
<i>Spizella passerina</i>	Chipping sparrow	

¹ Bird species nomenclature was determined using The Auk: Ornithological Advances (2016).

[Blank Page]



PRAIRIE CHICKEN SWD:
CLASS III CULTURAL RESOURCE INVENTORY,
MCKENZIE COUNTY, NORTH DAKOTA

Prepared For:
Independence ND, LLC
New Town, North Dakota

Principal Investigator:


John G. Morrison

Prepared By:
John G. Morrison
Juniper, LLC
Bismarck, North Dakota

**Class III Cultural Inventory
Attachment T2 (27 pages)**
PRAIRIE CHICKEN SWD 1
Independence ND, LLC
SESE Section 31-149-94
Eagle Nest Field
McKenzie County, ND

Report of Investigation: 523

November 2018

Manuscript Data Record Form

1. Manuscript Number:
2. SHPO Reference #:
3. Author(s): John G. Morrison
4. Title: Prairie Chicken SWD: Class III Cultural Resource Inventory,
McKenzie County, North Dakota
5. Report Date: November 2018
6. Number of Pages: 26
7. Type I, T, E, O: I
8. Acres: 27
9. Legal Location(s) with Historic Context Study Unit(s):

County	TWP	R	SEC	SU
MZ	149	92	31 and 32	GA

Prairie Chicken SWD: Class III Cultural Resource Inventory, McKenzie County, North Dakota

Prepared For:

Independence ND, LLC
New Town, North Dakota

Principal Investigator:



John G. Morrison

Prepared By:

John G. Morrison
Juniper, LLC
Bismarck, North Dakota

November 2018

ABSTRACT

Independence ND, LLC, contracted Juniper, LLC, to conduct a Class III Cultural Resource Inventory for the Prairie Chicken SWD location in the SE/SE of Section 31 and the SW/SW of Section 32, T. 149 N., R. 94 W., of McKenzie County, North Dakota. Access to the well location would be from BIA Road 30. A total of 27 acres were inventoried to 2018 State Historical Society of North Dakota Class III Intensive Pedestrian Cultural Resource Inventory standards.

Juniper Principal Investigator John G. Morrison conducted the Class III Cultural Resource Inventory on September 12, 2018. The Mandan, Hidatsa, and Arikara Nation Tribal Historic Preservation Office was contacted and informed of the inventory. The MHA THPO declined to participate with the inventory due to time constraints. The MHA THPO did express that if prehistoric cultural resources were encountered that Juniper should notify the MHA THPO regarding the cultural resources.

One new cultural resource, Site 32MZ3271, a prehistoric stone feature site was recorded during the inventory. Juniper notified the MHA THPO of the site. The MHA THPO did not express any concerns with our assessment or proposed management recommendations for the site. Site 32MZ3271 is currently unevaluated for the National Register of Historic Places, and should be avoided during the planning and development of the well location. In addition, the MHA THPO office requested that an archaeologist and MHA THPO representative be present to monitor during the construction of the well location.

A review of the State Historical Society of North Dakota's site and manuscript files was conducted for a one-mile radius around the proposed development. There are 29 previously recorded cultural resources and 52 previous cultural resource investigations within a mile of the proposed development. None of the 29 previously recorded cultural resources within one mile of the proposed undertaking will be impacted by the development of the well location.

Provided that Site 32MZ3271 is avoided by the construction of the proposed well location, and provided the construction of the well location is monitored by a qualified archaeologist and a representative of the MHA THPO office, and because the MHA THPO did not express any additional concerns regarding the the proposed project, Juniper recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

TABLE OF CONTENTS

Abstract	ii
Introduction.....	1
Environmental Setting	1
Topography	5
Flora	5
Fauna.....	5
Research Goals and Evaluation of Research	8
Literature Review.....	8
Field Methods	9
Results.....	10
32MZ3271.....	10
Summary and Management Recommendations.....	15
References Cited	16
Appendix A.....	17

LIST OF FIGURES

Figure 1: Regional location of Prairie Chicken SWD development.....	2
Figure 2: Location of the proposed undertaking, newly recorded Site 32MZ3271 (green label) in Sections 31 and 32, T. 149 N., R. 94 W., McKenzie County, along with previously recorded resources (white labels) as depicted on USGS 7.5' Figure Four (1970) and Mandaree (1970) quadrangle maps.	3
Figure 3: Overview of the proposed undertaking, inventory block, along with newly and previously recorded cultural resources, as depicted on the 2017 NAIP McKenzie County aerial photograph.	4
Figure 4: Overview of inventory block, view to the west from near the center of the south half. .	6
Figure 5: Overview of inventory block and recent pipeline scar running north to south through the inventory block, view to the north.	6
Figure 6: Overview of inventory block and existing well location, view to the south near eastern edge of the inventory block.....	7
Figure 7: Overview of the inventory block near eastern edge, view to the southeast.	7
Figure 8: Overview of the inventory block and Site 32MZ2322 (blue arrow), view to the west. .	8
Figure 9: Sketch map of Site 32MZ3271 in relation to the proposed undertaking.....	11
Figure 10: Sketch of turtle effigy at Site 32MZ3271.....	12
Figure 11: Overview of the turtle effigy, view to the southwest from near the "head" of the turtle.	13
Figure 12: Overview of the turtle effigy (foreground), view to the west and modern development.	13
Figure 13: Overview of the turtle effigy with well location in background, view to the east.	14
Figure 14: Overview of Site 32MZ3271, view to the west from eastern edge of project area. Orange arrow is approximate location of the site.	14

LIST OF TABLES

Table 1: Results of the Site, Site Lead, and Isolated Find Files Search	18
Table 2: Results of the Manuscript Review	19

INTRODUCTION

Independence ND, LLC, (Independence) contracted Juniper, LLC, (Juniper) to conduct a Class III Cultural Resource Inventory for the development of the Prairie Chicken SWD Well Location (Figure 1 - Figure 3). The proposed project consists of the development of a salt water disposal location in the SE/SE of Section 31 and the SW/SW of Section 32, T. 149 N., R. 94 W., McKenzie County, North Dakota. The proposed well location is bounded by modern development to the east, west, and south. An irregularly shaped inventory block was placed over the proposed well location to inventory the buildable areas between the existing developments. Access to the well location will be from BIA Road 30 which runs along the southern edge of the inventory block. A total of 27 acres were inventoried to and State Historical Society of North Dakota (SHSND) Class III standards (BLM 2015; SHSND 2017).

Juniper Principal Investigator John G. Morrison conducted the Class III Cultural Resource Inventory on September 12, 2018. During the inventory one new cultural resource, Site 32MZ3271, was recorded.

A literature review was conducted at the SHSND for a one mile radius around the proposed undertaking. The review noted 29 previously recorded cultural resources in the study area. None of the previously recorded resources will be impacted by the proposed development. The newly and previously recorded resources are discussed in the RESULTS and LITERATURE REVIEW sections of this document. The entirety of the site forms, illustrations, maps, field notes, and photographic records relevant to the undertaking are on file at the Juniper office in Bismarck, North Dakota.

ENVIRONMENTAL SETTING

The proposed well expansion is located approximately 5 miles southwest of Mandaree just to the west of the intersection of BIA Road 30 and ND Highway 22, within North Dakota's archaeological Garrison Study Unit #6 (GA), which is described in the *North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component* (SHSND 2016:6.1-6.51) (Figure 1 - Figure 3). The SHSND document presents a generalized description/overview of the physiographic and cultural setting for the study unit, along with information on the previous research within the study unit. A project specific description of the environmental setting is presented below based on the review of aerial photographs of the project area, general knowledge of the area, and field observations.

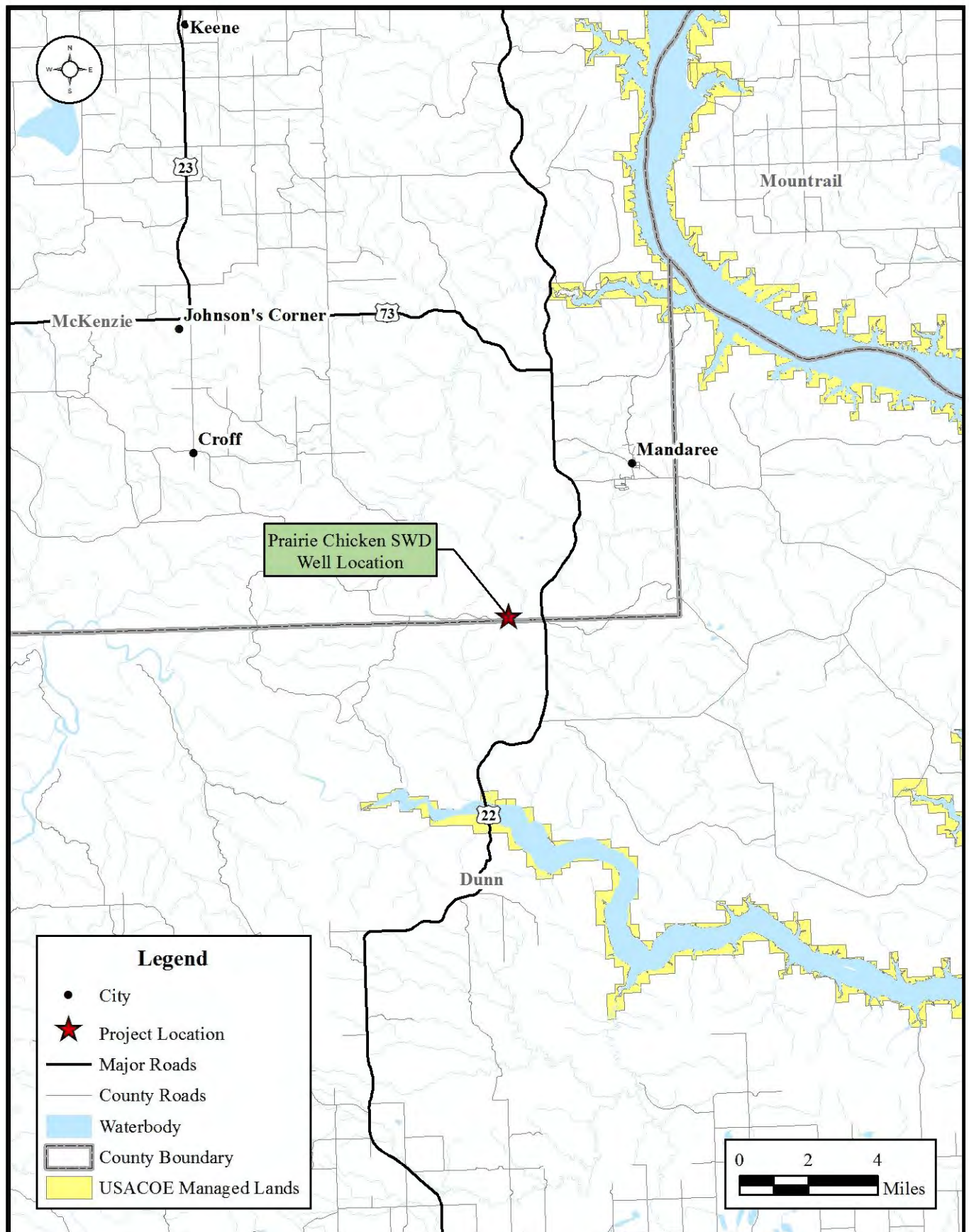


Figure 1: Regional location of Prairie Chicken SWD development.

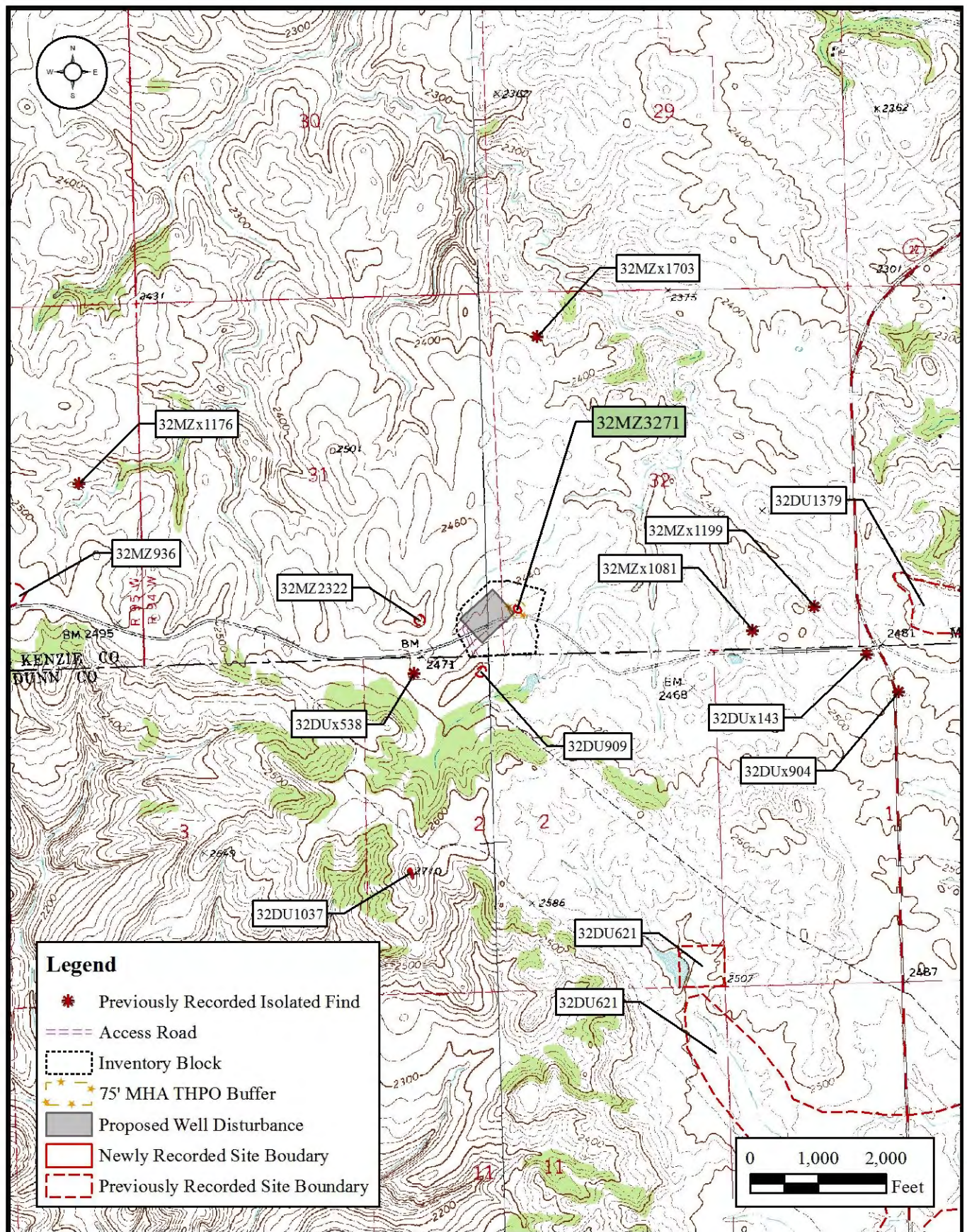


Figure 2: Location of the proposed undertaking, newly recorded Site 32MZ3271 (green label) in Sections 31 and 32, T. 149 N., R. 94 W., McKenzie County, along with previously recorded resources (white labels) as depicted on USGS 7.5' Figure Four (1970) and Mandaree (1970) quadrangle maps.



Figure 3: Overview of the proposed undertaking, inventory block, along with newly and previously recorded cultural resources, as depicted on the 2017 NAIP McKenzie County aerial photograph.

Topography

The dominant terrain of the GSU is the Missouri Coteau and Coteau Slope terrain within the glaciated Missouri Plateau Subsection. The Coteau Slope is characterized by gently rolling to hilly plains and hummocky glaciated landscapes separated by numerous drainage systems flowing to the Missouri River (Greg and Bleier 2016).

The landscape surrounding the inventory block consists of rolling grassland plains dotted with larger hills and buttes. The generally the lands in the area are either being used for ranch/homesteads, petroleum extraction activities, or are in use as pasture lands. The area surrounding the well location has been previously disturbed by the construction of a well location to the east, a modern farmstead - now an oil business - to the west, waterlines and pipelines to the south, the realignment of BIA Road 30, as well as historic/modern ranching. To the south of the inventory block lies a deeply entrenched draw that appears to have relatively undisturbed native prairie on either side of it.

Flora

The vegetative regimes present today are not necessarily the ones that would have been present in the past: the introduction of agricultural and non-native disturbance species have altered the floristic landscape. The inventory area resides within modern disturbance and pasture lands dominated by grasses and small shrubs. Ground surface visibility (GSV) within the project area averaged 20%, with several areas of erosion, modern pipeline scars, and cut faces which exhibited greater GSV. Special attention was given to areas of increased GSV within areas of lower ground surface visibility, and exposures of subsurface sediments, including but not limited to cut banks, rodent burrows, and erosional features found within and directly adjacent to the inventory block.

Fauna

It can also be said that the types and distributions of faunal species present in the additional rights-of-way today do not necessarily reflect those of the past. While the following list is not exhaustive of the fauna present, it represents the species most likely to have been encountered during historic or prehistoric times. The region would have been home to diverse large and small mammals as well as some birds, amphibians, and reptiles. In the past, people would have commonly encountered bison (*Bison bison*), elk (*Cervus canadensis*), antelope (*Antilocapra americana*), as well as mule and white tail deer (*Odocoileus* sp.). In addition, wolf (*Canis lupus*), coyote (*Canis latrans*), jack rabbits (*Lepus* sp.), badger (*Taxidea taxus*), beaver (*Castor canadensis*), and prairie dogs (*Cynomys ludovicianus*) would have been present, as well as raptors, songbirds, and game birds.

The water bodies near the project area would have provided homes to various species of fish (northern pike, perch, and suckers), different types of waterfowl, (ducks, geese, etc.,) amphibians, and reptiles. These water sources would have also served to draw in and concentrate the faunal resources.



Figure 4: Overview of inventory block, view to the west from near the center of the south half.



Figure 5: Overview of inventory block and recent pipeline scar running north to south through the inventory block, view to the north.



Figure 6: Overview of inventory block and existing well location, view to the south near eastern edge of the inventory block.



Figure 7: Overview of the inventory block near eastern edge, view to the southeast.

RESEARCH GOALS AND EVALUATION OF RESEARCH

Following the mandated policies implementing the National Historic Preservation Act (NHPA [Public Law 89-665]) as amended, this proposed project area was inventoried to locate and identify any cultural resources within the area of potential affect (APE). An additional goal of the survey was to allow Independence and ultimately the Environmental Protection Agency (EPA) to plan the proposed development so as to avoid any significant cultural resources.

The methods employed for this inventory greatly decreased the potential that the project proponents would encounter situations that would require testing or mitigation of cultural resources within the inventory area prior to construction. The overall goal of this inventory has been achieved as the cultural resource that was recorded lies outside of the area of the proposed expansion and can be avoided during the development of the location.

LITERATURE REVIEW

A Class I Literature Review of the State Historical Society of North Dakota's site and manuscript files was conducted by William Christensen on September 4, 2018, for a one-mile radius around the proposed development (Table 1 and 2). There are 29 previously recorded cultural resources and 52 previous cultural resource investigations within a mile of the proposed development.

The closest previously recorded cultural resource to the proposed development is Site 32MZ2322, a prehistoric cairn, that remains unevaluated for the NRHP. The site is located ~500' west of the proposed development overlooking a modern residence/business. The results of the literature review are provided below in tabular format (Table 1 and Table 2 in Appendix A).



Figure 8: Overview of the inventory block and previously recorded Site 32MZ2322 (blue arrow), view to the west.

FIELD METHODS

Juniper Principal Investigator John G. Morrison conducted the Class III Cultural Resource Inventory on September 12, 2018. The Class III Intensive Cultural Resources Inventory was conducted by the Juniper archaeologist using parallel pedestrian transects spaced no more than 15 meters apart to cover the entirety of the 27 acre irregularly shaped inventory block. Special attention was given to areas of increased ground surface visibility (GSV) within areas of otherwise lower GSV, and exposures of subsurface sediments, including but not limited to the previous disturbances, recent pipeline scars, cut banks, rodent burrows, ant mounds, and erosion features found within the inventory area.

When an artifact or feature was encountered during the survey, the location was marked with a pin flag and the area around the artifact or feature was intensively inspected to locate any other associated artifacts or features. Based on the number and types of artifacts or features noted during the search, the grouping was determined to be either an isolated find, site lead, or a site using the following criteria:

An isolated find is considered to be a location of five or fewer artifacts and identified by the archaeologist(s) as representing an area of very limited past activity may be recorded as an isolated find. In all cases of identifying a location of an isolated find the archaeologist(s) should consider whether the location has good or better potential to contain buried artifacts. In such cases consideration should be given to recording the location as a site lead (SHSND 2017).

A site lead is defined using one of two criteria, with considerations:

(1) A location reported by a landowner or other non professional as containing cultural resources. These locations are considered to be site leads until such time as a qualified archaeologist or architectural historian can determine whether the site is an isolated find or site.

(2) A location consisting of five or fewer surface visible artifacts is in the professional judgment of the archaeologist(s) likely to be only a limited surface expression of a former occupation where most of the artifacts are not visible (i.e., still buried).

Consideration should be given by the principal investigator, the lead agency and the SHPO as to whether a site lead location should be examined more closely, possibly by subsurface investigations prior to a determination of No Historic Properties Affected or No Adverse Effect (SHSND 2017).

Sites are defined as such:

A cultural resource site is defined as a location of past human activity that took place over 50 years ago and left physical traces of the activity in the form of (1) an intact cultural feature (2) five or more artifacts found within about 60 m of each other, and/or (3) an intact subsurface cultural deposit regardless of the number of artifacts (SHSND 2017).

After the resource was adequately defined, the appropriate site, site lead, or isolated find forms and other documentation were completed. The additional documentation included plotting the resource on a USGS, 7.5' topographic map, photographing the resource, and generating a sketch map. In addition, the location of the cultural resources were recorded using a Trimble R1 Receiver ($\leq 50\text{cm}$ accuracy with real-time correction) paired with a iPad tablet running TerraFlex software.

RESULTS

None of the previously recorded cultural resources are located within or directly adjacent to the inventory block. During the inventory Site 32MZ3271 was recorded just beyond the northeastern corner of the proposed well location.

32MZ3271

Site 32MZ3271 is a turtle effigy. The effigy is well defined and easy to identify on a ridge top overlooking the modern development of the surrounding landscape (Figure 2, Figure 3, and Figure 9 - Figure 14). Juniper notified the MHA THPO of the find and consulted on the proposed management recommendations discussed below.

The effigy is comprised of approximately 50 cobbles of gray granite. The body of the turtle is comprised of two courses of cobbles with an opening in the center (Figure 10 - Figure 13). The head is comprised of five cobbles, the tail of two larger cobbles, and the three identified feet or flippers are each comprised of a single elongated cobble. One foot or flippers was not identified. The effigy is approximately 4 meters in diameter and oriented along a roughly north (head) to south (tail) axis. Several other stone feature sites are recorded in the general area of the site, but outside of the inventoried area. A medicine wheel, a stone circle divided into four sections, is visible on Google Earth approximately .5 miles southeast of the effigy. The relationship of the effigy to these other sites is unknown.

The effigy retains significant aspects of physical and spatial integrity. Modern development has encroached on three sides (south, east, and west) of the site, but has not directly impacted the effigy. Additional consultation with the MHA THPO is needed to identify the context of the site and its relationship to other sites, (especially to the medicine wheel .5 miles to the southeast).

The site is currently *unevaluated* for inclusion to the National Register of Historic Places (NRHP). These types of sites have significant spiritual components that are not easily defined. The MHA THPO should be consulted prior to making a recommendation or determination of eligibility of the site.

Juniper recommends that the development of the well location avoid Site 32MZ3271 by at least 75', the MHA THPO's standard distance (Figure 3 and Figure 9). In addition, the MHA THPO requested that a qualified archaeologist along with a representative from the MHA THPO monitor the construction of the well location to make sure the site is avoided and to assess any unanticipated discoveries that might be encountered during construction.

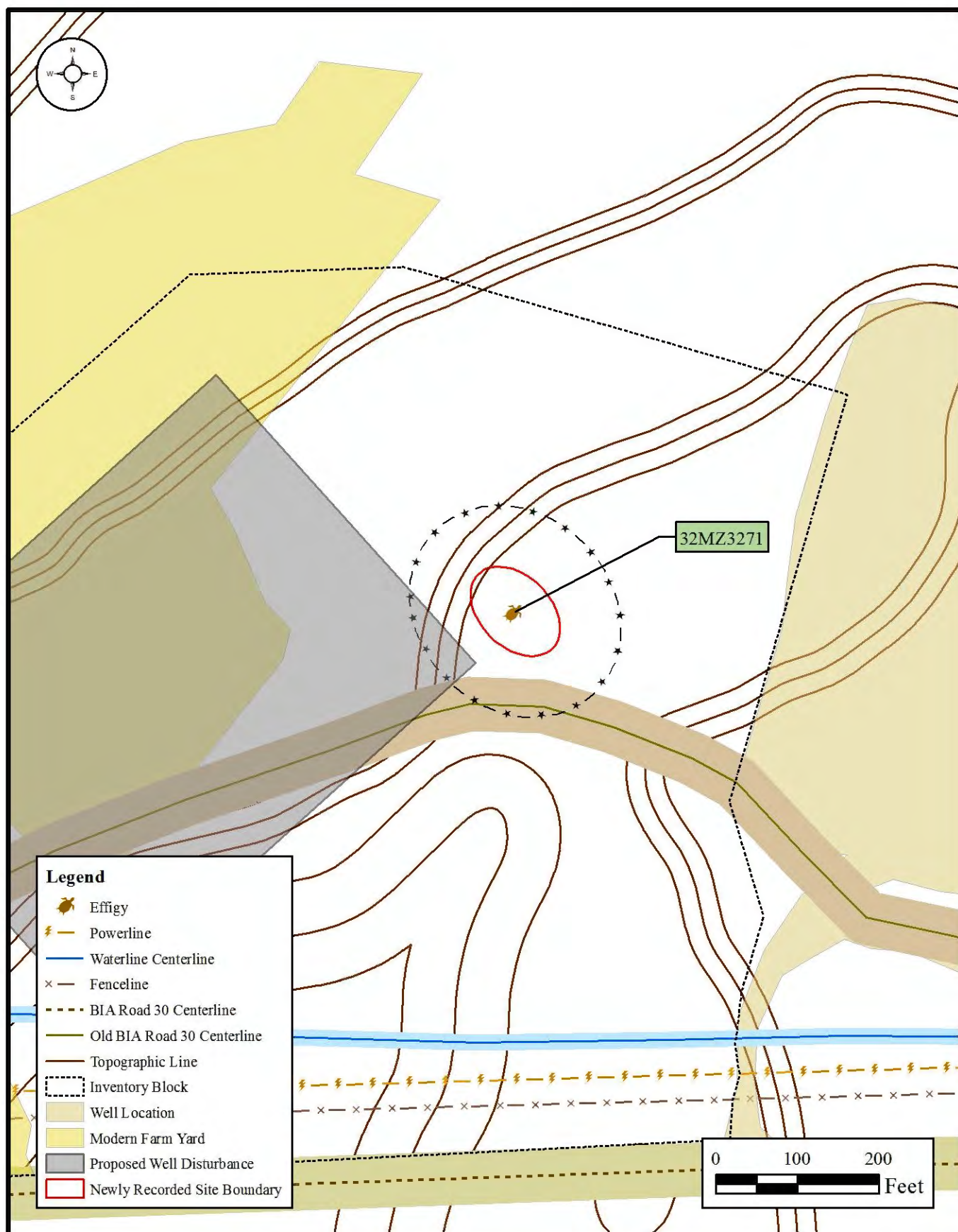


Figure 9: Sketch map of Site 32MZ3271 in relation to the proposed undertaking.

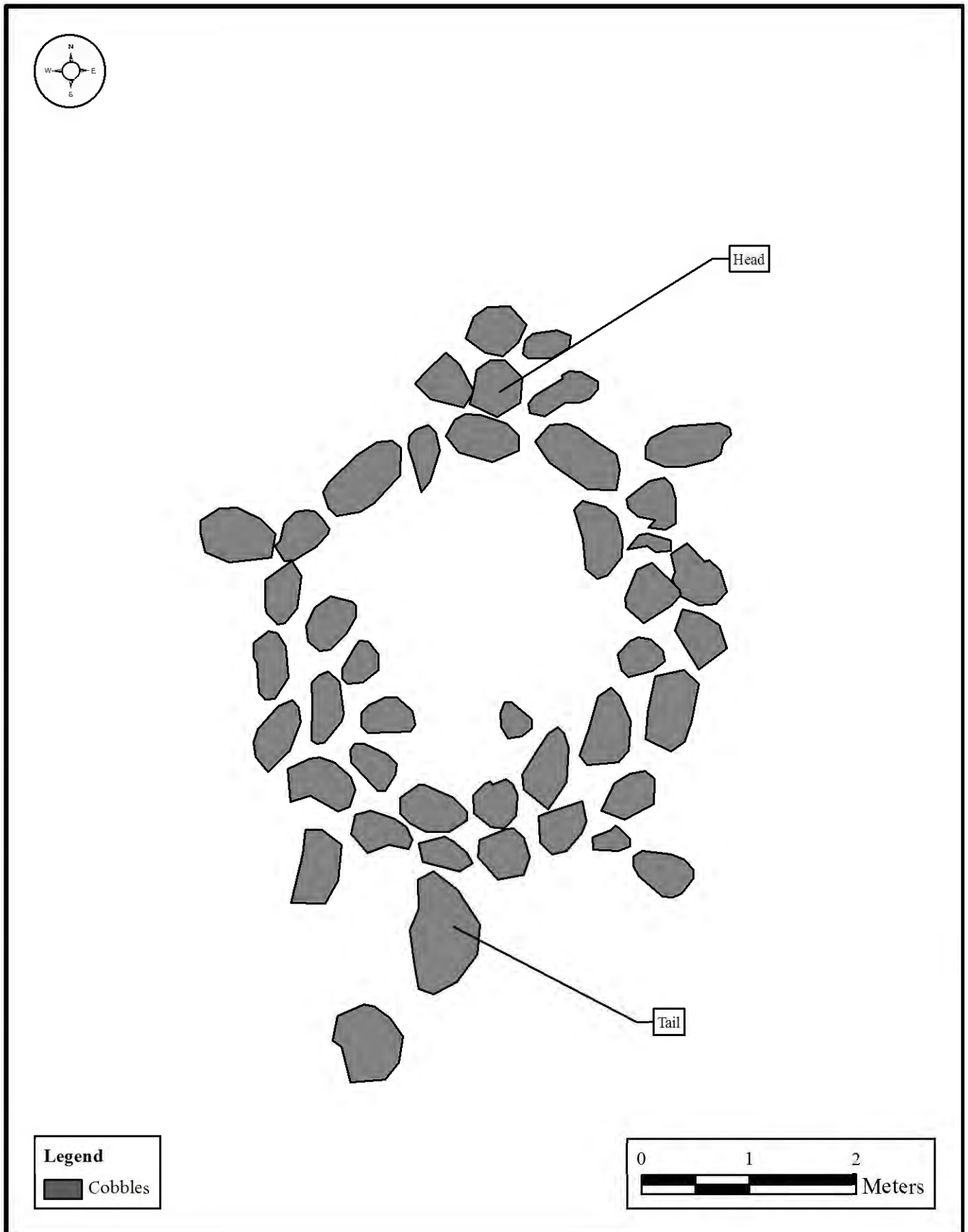


Figure 10: Sketch of turtle effigy at Site 32MZ3271.



Figure 11: Overview of the turtle effigy, view to the southwest from near the "head" of the turtle.



Figure 12: Overview of the turtle effigy (foreground), view to the west and modern development.



Figure 13: Overview of the turtle effigy with well location in background, view to the east.



Figure 14: Overview of Site 32MZ3271, view to the west from eastern edge of project area. Orange arrow is approximate location of the site.

SUMMARY AND MANAGEMENT RECOMMENDATIONS

Independence contracted Juniper to conduct a Class III Cultural Resource Inventory for the development of the Prairie Chicken SWD in Sections 31 and 32, T. 149 N., R. 94 W., McKenzie County, North Dakota. A total of 27 acres were inventoried to SHSND Class III Intensive Pedestrian Inventory standards. Juniper Principal Investigator John G. Morrison conducted the Class III Cultural Resource Inventory on September 12, 2018.

During the inventory one new cultural resource, Site 32MZ3271, a turtle effigy, was recorded. The site retains significant aspects of physical and spatial integrity and is currently *unevaluated* for the NRHP. Juniper recommends that the site be avoided by at least 75' following established MHA THPO guidelines, as well as that there be a qualified archaeologist and an MHA THPO representative present to monitor the construction of the well location.

None of the 29 previously recorded cultural resources which lie within 1 mile of the well location will be impacted by the proposed undertaking.

Provided that Site 32MZ3271 is avoided by the proposed expansion of the well location, provided that the construction of the well location is monitored by a qualified archaeologist and an MHA THPO representative, and because the MHATHPO did not express any additional concerns regarding the site or the proposed project, Juniper recommends a finding of *No Historic Properties Affected* for the proposed undertaking.

REFERENCES CITED

Gregg, Michael L. and Amy Bleier

- 2016 The Garrison Study Unit. In *The North Dakota Comprehensive Plan for Historic Preservation: Archaeological Component* (6.1-6.79). Produced by and available at the Archaeology and Historic Preservation Division, State Historical Society of North Dakota, Bismarck, North Dakota and as an Electronic Document, http://history.nd.gov/hp/PDFinfo/6_Garrison_Study_Unit.pdf, accessed November 5, 2018.

State Historical Society of North Dakota (SHSND)

- 2018 *NDSHPO Manual for Cultural Resource Investigations Revised Edition*. Produced by and available at the Division of Archaeology and Historic Preservation, State Historical Society of North Dakota, Bismarck.

APPENDIX A
LITERATURE REVIEW RESULTS

Table 1: Results of the Site, Site Lead, and Isolated Find Files Search					
Sec-Twp/Rng	SITS#	Type	Recorder Date	NRHP Status	MS #
1-148/95	32DU1379	Archaeological CMS	Harty 2008, Leroy/Yost 2013	UN	3223, 4698, 10684, 10791,
	32DU1701	Archaeological - Cairn	Hutchinson/Clark 2011	UN	11700, 11937, 12633, 12766,
	32DU2360	Archaeological - CMS	Stine/Langsdon 2017	UN	12970, 13092,
	32DUx143	Isolated Find - KRF Biface	Pollman 2008	NE	13135, 13155,
	32DUx817	Isolated Find - KRF Tool	Springer 2010	NE	13178, 13393, 13780, 14056,
	32DUx904	Isolated Find - Chipped Stone	Battillo/Asbury 2011	NE	14588, 14979, 15238, 16321, 16413, 17701, 17986
2-148/95	32DU1037	Archaeological - CMS, SC	Olson, B 1992	UN	4539, 4698,
	32DU621	Archaeological - KRF Quarry	Olson 1991	UN	5053, 5158,
	32DU909	Archaeological - CMS	Banks 1987, Olson 1992	UN	5832, 5931, 11937, 13155,
	32DUx538	Isolated Find - Chipped Stone	Olson 1990	NE	13156, 16413
3-148/95	No Historic Properties Recorded				4698, 5158, 12326, 12331
28-149/94	32MZ1123	Archaeological - Stone Circle, Cultural Materials Scatter	Olson 1992	UN	3223, 5828,
	32MZx1140	Site Lead - Chipped Stone	Banks 2011	UN	10791, 11937,
	32MZx1164	Isolated Find - Chipped Stone	Asbury 2011	NE	13110, 13117, 14979, 16905
	32MZx421	Site Lead - Stone Circle, Chipped Stone	Olson 1992	UN	
29-149/94	32MZ1123	Archaeological - Stone Circle, CMS	Olson 1992	UN	5828
	32MZ3211	Archaeological - Cultural Materials Scatter	Paul/Morton 2018	UN	
30-149/94	No Historic Properties Recorded.				13724, 15820
31-149/94	32MZ2322	Archaeological - Stone Features, CMS	Markman/Smith 2010	UN	4698, 5158, 11937, 12326, 12331, 12633, 13156, 13726
32-149/94	32MZ3210	Archaeological - Stone Circle	Paul/Morton 2018	UN	10791, 11937,
	32MZx1081	Isolated Find - Chipped Stone	Markman 2009	NE	12592, 12633,
	32MZx1199	Isolated Find - Stove	Yost 2011	NE	13085, 13156, 13374, 13957,
	32MZx1703	Isolated Find - Chipped Stone	Paul/Morton 2018	NE	14979, 15819, 16413, 17508
33-149/94	32MZ1860	Archaeological CMS	Harty 2008, Leroy/Yost 2013	UN	3223, 4698, 10684, 10791,
	32MZ1949	Historical - Dump	Leuchtmann 2008	NE	11937, 12633, 12970, 13118, 13178, 14979
25-149/95	32MZ2816	Archaeological - Cairn	Homan/Dunagan 2014	UN	13009, 13156, 13724, 16413, 17619

Table 1: Results of the Site, Site Lead, and Isolated Find Files Search					
Sec-Twp/Rng	SITS#	Type	Recorder Date	NRHP Status	MS #
36-149/95	32MZ936	Archaeological - CMS	Banks 1987	UN	4698, 5053, 12633, 13156, 13401, 13644, 14313, 14569, 16413
	32MZx1176	Isolated Find - Chipped Stone	Hutchinson 2011	NE	
	32MZx1177	Isolated Find - Chipped Stone	Hutchinson 2011	NE	
	32MZx1180	Isolated Find - Chipped Stone	Retter/Clark 2011	NE	
	32MZx1449	Isolated Find - Chipped Stone	Homan/Dunagan 2014	NE	

KRF=Knife River flint, CMS=Cultural Material Scatter, SITS=Smithsonian Information Trinomial System, NE=Not Eligible, UN=Unevaluated, NRHP=National Register of Historic Places, MS=Manuscript

Table 2: Results of the Manuscript Review	
MS #	Reference
3223	Fox, G. 1984 <i>A Class II Cultural Resource Inventory of North Dakota Highway 22: From Lost Bridge to the Junction of North Dakota Highway 23 in Dunn and McKenzie Counties, North Dakota.</i>
4539	Banks, K. 1988 <i>A Cultural Resources Inventory of Four Cluster Low-Rent and Five Prototype Scattered Mutual Self-Help Homesites, Ft. Berthold Agency, Dunn, McKenzie, McLean, and Mountrail Counties, North Dakota.</i>
4698	Banks, K. 1988 <i>The Long and Winding Road: A Cultural Resources Inventory of Three Road Projects, Fort Berthold Indian Agency, Dunn and McKenzie Counties, North Dakota.</i>
5053	Newberry, G. and G. Tucker. 1989 <i>Results of Evaluative Testing At Archaeological Sites 32MZ936 and 32DU909 Along the Figure 4 Road, Fort Berthold Indian Reservation, McKenzie and Dunn Counties, North Dakota.</i>
5158	Olson, B. 1990 <i>McKenzie Electric Cooperative, Inc. Powerline Relocation along Figure 4 Road Cultural Resources Inventory, Dunn and McKenzie Counties, North Dakota.</i>
5828	Olson, B. 1992 <i>Geolinear Company #1-28 Corrin, #2-21 Lonefight, and #3-21 Tony Cultural Resources Inventories, McKenzie County, North Dakota.</i>
5832	Olson, B. 1992 <i>The White Owl Site (32DU621): A Late Prehistoric-Protohistoric Campsite and Knife River Flint Procurement Locality on the Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
5931	Tucker, G. and B. Olson 1992 <i>The Figure Four Road Project: Data Recovery at Two Archaeological Sites on the Fort Berthold Indian Reservation, McKenzie and Dunn Counties, North Dakota.</i>
6670	Pool, K. 1995 <i>Fort Berthold Housing Authority's Proposed Residential Water Well Locations Near 32MZ936: A Class III Cultural Resource Inventory in McKenzie County, North Dakota.</i>
10684	Barth, A. and J. Morrison 2008 <i>Smith 33-24H Well Pad and Access Road Survey: A Class III Cultural Resource Inventory, Dunn and McKenzie Counties, North Dakota.</i>
10791	Burns, W. 2008 <i>Saddle Butte Pipeline: A Class III Cultural Resource Inventory, McKenzie and Dunn Co., ND.</i>
11700	Sprinker, K. 2010 <i>The 10-025-023 Pipeline System Project Cultural Resources Inventory, Dunn Co., ND.</i>
11937	O'Donnchadha, B. 2010 <i>Ft. Berthold Rural Water Mandaree 3 & 4 Pipeline: A Class III Cultural Resource Inventory in McKenzie & Dunn Counties, ND.</i>

Table 2: Results of the Manuscript Review	
MS #	Reference
12326	Desruisseaux, D., J. Cooper, and S. Lechert. 2010 <i>A Class I and Class III Cultural Resource Inventory of Petro-Hunt Fort Berthold 148-95-3A-10-1H Well Pad and Access Road, Dunn and McKenzie Counties, North Dakota.</i>
12331	Lechert, S. 2010 <i>Addendum to the Class I and Class III Cultural Resource Inventories of the Fort Berthold 148-95-26A-35-1H/Fort Berthold 148-95-23D-14-1H, Fort Berthold 148-95-3A-10-1H/148-95-25B-36-1H Well Pads and Access Roads, Dunn Co., ND.</i>
12592	Mitchell, M. 2011 <i>Agri Industries Water Well: A Class III Cultural Resource Inventory in McKenzie County, ND.</i>
12633	Smith, N. and S. Lechert 2011 <i>A Class I and Class III Cultural Resource Inventory of the Arrow Phase 3SW Pipeline, Fort Berthold Indian Reservation, Dunn and McKenzie Co., ND.</i>
12766	Baer, S. 2011 <i>A Class I and Class III Cultural Resource Inventory of the Vinson #148-95-12BH and Blanc #148-95-12BH TF Well Pad and Access Road, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
12970	Baer S., M. Clark., and A. Hutchinson 2012 <i>A Class I and Class III Cultural Resource Inventory of the Cirrus #149-94-33D-28H and Numbus #149-94-33D-28H TF Well Pad and Access Road/Utility Corridor, Fort Berthold Indian Reservation, Dunn and McKenzie Counties, North Dakota.</i>
13009	Reinhart, D. 2012 <i>A Class I and Class III Cultural Resource Inventory of the Omaha Woman #13-12H Well Pad and Utility Corridor, Fort Berthold Indian Reservation, North Dakota.</i>
13085	Lechert, S., K. Reed., and M. Retter 2010 <i>Addendum to the Class III Cultural Resource Inventory of the Dakota-3 Bearstail #32-29H (Formerly the Dakota-3 Brugh #15-32H) Well Pad and Access Road on the Fort Berthold Indian Reservation, McKenzie County, North Dakota, to Authorize Land Use for the Dakota-3 Bearstail #32-29H to Dakota-3 TAT (714A) #2-1H Gathering Pipeline.</i>
13092	Lechert, S. 2010 <i>A Class I and Class III Cultural Resource Inventory of the Zenergy Dakota-3 TAT (714-A) #2-1H Gathering Line, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
13110	Fife A. et al 2009 <i>A Class I and Class III Cultural Resources Inventory of the Zenergy Wolf 27-34H and Fettig 16-22H Wells and Access Road, Fort Berthold Indian Reservation, McKenzie County, North Dakota and Addendum.</i>
13117	Nelson, K. 2009 <i>A Class III Cultural Resources Inventory of the Zenergy Wolf 3-27H Well Pad and Access Road, McKenzie County, North Dakota.</i>
13118	Leroy, A. 2009 <i>A Class I and Class III Cultural Resource Inventory of the Zenergy Fettig 3-6H Well and Access Road, Fort Berthold Indian Reservation, Dunn and McKenzie Counties, North Dakota.</i>
13135	Schleicher, J. 2012 <i>A Class I and Class III Cultural Resource Inventory of the TAT (714-A) #2-1H Gathering Line, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
13155	Schleicher, J. 2012 <i>A Class I and Class III Cultural Resources Inventory of the Enerplus Buffalo Run Lateral Pipeline, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
13156	Hutchinson, A. 2012 <i>A Class I and Class III Cultural Resources Inventory of the West Lateral Pipeline, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>

Table 2: Results of the Manuscript Review	
MS #	Reference
13178	Leroy, A. 2012 <i>A Class I and Class III Cultural Resource Inventory of the TAT #2-1H Well Pad Expansion, Fort Berthold Indian Reservation, Dunn and McKenzie Counties, North Dakota.</i>
13374	Herson, C. 2012 <i>A Class I and Class III Cultural Resource Inventory of the Bearstail #32-29H Well Pad Expansion, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
13393	Schleicher, J. 2012 <i>A Class I and Class III Cultural Resource Inventory of the Enerplus Resources Cumulus #149-94-33C-28H and Stratus #149-94-33C-28H TF Well Pad and Access Road/Utility Corridor, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
13401	Schleicher, J. and A. Leroy 2012 <i>A Class I and Class III Cultural Resource Inventory and Evaluative Shovel Testing of the 32MZ936 for the Enerplus Ruby 148-95-3B-20H TF, Sapphire 148-95-36D-25H, and Reel 148-95-36D-25H TF Well Pad, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
13644	Baer, S. and A. Hutchinson 2012 <i>A Class I and Class III Cultural Resource Inventory of the Deer #148-95-04B-09H & Eld #148-95-04B-09H TF & the Moose #148-95-04A-09-H, Pronghorn #148-95-04A-09H TF, Tackle #149-95-36C-25H and Bait #149-95-36C-25H TF Well Pads and Access Roads/Utility Corridors, Dunn & McKenzie Counties, North Dakota.</i>
13724	Leroy, A. and C. Herson 2012 <i>A Class I and Class III Cultural Resource Inventory of the Kale Bad Brave #19-18H Well Pad, Access Road, Utility Corridor, and Gathering Pipeline, and Results of Evaluative Testing for Site 32MZ1946, Fort Berthold Indian Reservation.</i>
13726	Schleicher, J. and D. Reinhart 2012 <i>A Class I and Class III Cultural Resource Inventory of the Brugh #31-30H Well Pad and Access Road, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
13780	Cooper, J. 2012 <i>A Class I and Class III Cultural Resource Inventory of the Arrow Phase 3SW Alternate Compressor Station #5 and Access Roads, Fort Berthold Indian Reservation, Dunn County, North Dakota</i>
13957	Leroy, A. 2013 <i>A Class I and Class III Cultural Resource Inventory of the Estastis #32-29 Well Pad, Gathering Pipeline, and Utility Corridor, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
14056	Leroy, A. and D. Reinhart 2013 <i>A Class I and Class III Cultural Resource Inventory of the Fast Dog #7-6H Well Pad, Utility Corridor, and Gathering Pipeline, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
14313	Reiners, L. 2013 <i>McKenzie County Road (Route 53): A Class III Intensive Cultural Resources Inventory in McKenzie County, North Dakota.</i>
14558	Wandler, C. 2013 <i>A Class I and Class III Cultural Resource Inventory of the Arrow Station #5 Loop Pipeline System, Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>
14569	Leroy, A. 2013 <i>TAT 16-35Y Well Pad and Access Road: A Class III Cultural Resource Inventory in McKenzie County, North Dakota.</i>
14979	Ferris, K., J. Bush, J. Macy, J. Harty, K. Morgan, R. Glaab, and T. Dodson 2013 <i>Highway 22 Expansion Project 5-022(107)126 PCN 19806 and 7-022(015)141 PCN 19201: A Class III Cultural Resource Inventory in Dunn and McKenzie Counties, North Dakota.</i>
15238	Yost, C. and T. Dunagan 2014 <i>A Class I and Class III Cultural Resource Inventory of the White Lodge Standing Industrial Park on the Fort Berthold Indian Reservation, Dunn County, North Dakota.</i>

Table 2: Results of the Manuscript Review	
MS #	Reference
15819	Riordan, C. 2014 <i>A Class I and Class III Cultural Resource Inventory of the White Owl #32-29H Well Pad, and Utility Corridor, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
15820	Kilcullin, T. 2014 <i>A Class I and Class III Cultural Resource Inventory of the WPX Whitetail #19-18H Well Pad and Utility Corridor, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
16321	Reiners, L. 2015 <i>Reservoirs, Access Roads, Pipeline Tie-Ins Project: A Class III Intensive Cultural Resource Inventory in Dunn and McKenzie Counties, North Dakota.</i>
16413	Schleicher, J. and M. Cox 2015 <i>A Class I and Class III Cultural Resource Inventory of the Highway 22--BIA 30 Connection Salt Water Pipeline, Fort Berthold Indian Reservation, Dunn and McKenzie Counties, North Dakota.</i>
16905	Harding, W. 2016 <i>A Class I and Class III Cultural Resource Inventory of the Sage Pond Electrical Line, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
17508	Herson, C. 2017 <i>Cultural Resources Monitoring of Topsoil Removal for the Estatis #32-29 Well Pad #3 and Access Road, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
17619	Harding, W. 2017 <i>A Class I and Class III Cultural Resource Inventory of the Omaha Woman Well Pad and Utility Corridor, Fort Berthold Indian Reservation, McKenzie County, North Dakota.</i>
17701	Kaiser, A. and L. Langsdon 2017 <i>Fort Berthold Rural Water Supply Subsequent Users 1: A Class III Cultural Resource Inventory in Dunn, McKenzie, McLean, and Mountrail counties, North Dakota.</i>
17986	Van Wandelen, P. 2018 <i>A Class III Cultural Resource Inventory of the Eagle Nest Pond Site in Dunn County, an Addendum to the Reservoirs, Access Roads, and Pipeline Tie-ins Project in Dunn and McKenzie Counties, North Dakota.</i>

U. DESCRIPTION OF BUSINESS

Independence ND, LLC is a 100% Indian-owned business established on June 21, 2018 for the sole purpose of safely disposing Class II fluids on the Fort Berthold Indian Reservation. Independence ND's headquarters are located at 301 1st Ave. E Bakersfield, New Town, ND 58763-4405.

