

Oil and Gas Division

Nathan D. Anderson-Director Mark F. Bohrer - Assistant Director

North Dakota Industrial Commission

Department of Mineral Resources

Nathan D. Anderson-Director

www.dmr.nd.gov/oilgas/

October 8, 2024

Trevor Richards
Assistant Director - Geophysics
UND Energy & Environmental Research Center
15 N. 23rd Street, Stop 9018
Grand Forks, ND 58202-9018

RE: BASIN ELECTRIC RESEARCH PROJECT – Seismic Stations
 GEOPHYSICAL EXPLORATION PERMIT #97-0336
 MERCER COUNTY
 NON-EXPLOSIVE METHODS

Dear Mr. Richards:

Be advised that your Geophysical Exploration permit is conditionally approved; effective for one year from October 8, 2024.

PERMIT STIPULATIONS:

- **UND-EERC must contact seismic inspector Tom Torstenson at (701) 290-1546 72 hours prior, to arrange a start-up meeting. Also, a copy of the entire permit is required for all contractors at the start up meeting.**
- **UND-EERC must contact Tom Torstenson at (701) 290-1546 24 hours prior to conducting any geophysical activities.**
- **Pursuant to NDAC 43-02-12-05 (DISTANCE RESTRICTION) Non-explosive exploration methods may not be conducted less than 300 feet from water wells, buildings, underground cisterns, pipelines, and flowing springs.**
- **In addition, pursuant to NDAC 43-02-12-06 (NOTIFICATION OF WORK PERFORMED), “The director is authorized to suspend operations of the entire geophysical project, or any portion thereof, if further activity will cause excessive damage to the surface of the land”.**

Review the following conditions for your permit:

1. All variances for distance restrictions are to be furnished, and a pre-plot map displaying any source points that do not comply with the distance restriction rule must be supplied to the inspector.
2. The following information must be submitted within 30 days of the completion of the project by the Geophysical Company:
 - a. Completion Report,

- b. Completion Affidavit,
 - c. Post Plot Map. It must show all water wells, buildings, underground cisterns, pipelines, and flowing springs that fall within the program area and within one half mile of the perimeter of the program.
 - d. Must provide a GIS layer using NAD83 in an Esri shape file format and an Image file (.img) on a Flash Drive or email: ttorstenson@nd.gov with all source and receiver points,
3. The permit agent shall notify the operator of the land at least seven days before commencement of any geophysical exploration activity, unless waived by mutual agreement of both parties. The notice must include the approximate time schedule and the location of the planned activity.
 4. Information regarding the location of water wells, springs, etc.; refer to the following ND State Water Commission Mapservice website, at: <http://mapservice.swc.state.nd.us/>
 5. The entire permit can be viewed, as well as the status of various seismic projects in the state, at: <https://www.dmr.nd.gov/oilgas/seismic/seismicstats.asp>

Should you have any questions regarding this matter, feel free to contact our office.

Sincerely,



Todd L. Holweger
Permit Manager/Geophysical Supervisor

SEP 27 2024

ND Oil & Gas
Division



GEOPHYSICAL EXPLORATION PERMIT - FORM GE 1

INDUSTRIAL COMMISSION OF NORTH DAKOTA
OIL AND GAS DIVISION
600 EAST BOULEVARD DEPT 405
BISMARCK, ND 58505-0840
SFN 51459 (03-2011)

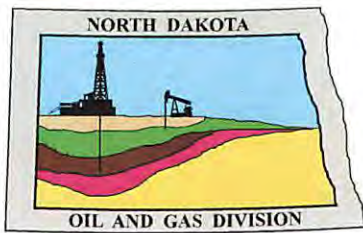
1) a. Company University of North Dakota EERC		Address 15 N 23rd St, Stop 9018, Grand Forks, ND 58202-9018			
Contact Trevor Richards		Telephone (701) 777-5052		Fax	
Surety Company <i>n/a - Bank of ND Agent</i>		Bond Amount <i>n/a \$25,000</i>		Bond Number <i>n/a GEO 308</i>	
2) a. Subcontractor(s)		Address		Telephone	
b. Subcontractor(s)		Address		Telephone	
3) Party Manager César Barajas-Olalde		Address (local) Same as above		Telephone (local) (701) 777-5414	
4) Project Name or Line Numbers Basin Electric Research Project - Seismic Stations					
5) Exploration Method (Shot Hole, Non-Explosive, 2D, 3D, Other) <i>n/a Seismograph stations</i>					
6) Distance Restrictions (Must check all that apply)					
<input checked="" type="checkbox"/> 300 feet - NonExplosive - Distance setbacks apply to water wells, buildings, underground cisterns, pipelines, and flowing springs.					
<input type="checkbox"/> 660 feet - Shot Hole - Distance setbacks apply to water wells, buildings, underground cisterns, pipelines, and flowing springs.					
7) Size of Hole 3-D	Amt of Charge n/a	Depth n/a	Source points per sq. mi. n/a	No. of sq. mi. n/a	
Size of Hole 2-D	Amt of Charge	Depth	Source points per ln. mi.	No. of ln. mi.	
8) Approximate Start Date October 8, 2024			Approximate Completion Date October 20, 2024		

THE COMMISSION MUST BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF COMMENCEMENT OF GEOPHYSICAL OPERATIONS

9) Location of Proposed Project - County Mercer County						
Section(s), Township(s) & Range(s)	Section	1, 2, 12	T.	145N	R.	88W
	Section		T.		R.	
	Section		T.		R.	
	Section		T.		R.	
	Section		T.		R.	
	Section		T.		R.	

I hereby swear or affirm that the information provided is true, complete and correct as determined from all available records.			Date 9/27/24
Signature <i>Trevor Richards</i>	Printed Name Trevor Richards	Title Assistant Director - Geophysics	
Email Address(es) trichards@undeerc.org			

(This space for State office use)		Permit Conditions	
Permit No. 97-0336	Approval Date 10/8/24	* Permit in hand required at pre-program meeting with field inspector and be aware of all NDIC Rules and Regulations (i.e. distance restrictions). * See attached letter.	
Approved by <i>John L. Halvey</i>			
Title Mineral Resources Permit Manager			



Oil and Gas Division

Nathan D. Anderson-Director Mark F. Bohrer - Assistant Director

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Department of Mineral Resources

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www.dmr.nd.gov/oilgas/

October 8, 2024

The Honorable Carmen Reed
Mercer County Auditor
P.O. Box 39
Stanton, ND 58571-0039


RE: Geophysical Exploration
 Permit Number 97-0336

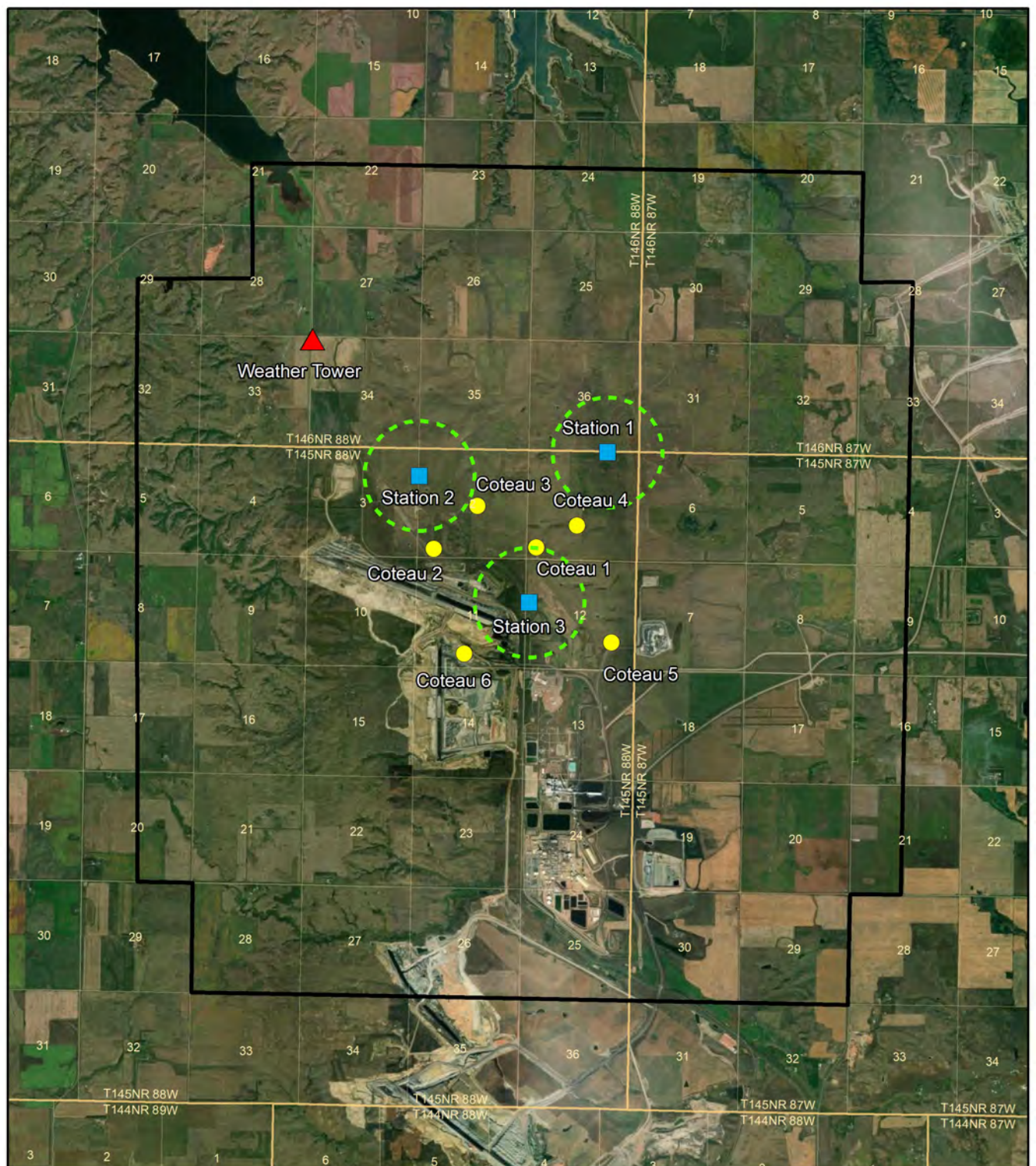
Dear Ms. Reed:

Pursuant to Section 38-08.1-04.2 of the North Dakota Century Code, please be advised that the UND Energy & Environmental Research Center was issued the above captioned permit on October 8, 2024, and will remain in effect for a period of one year. The entire permit can be viewed on our website at: <https://www.dmr.nd.gov/oilgas/seismic/seismistats.asp>

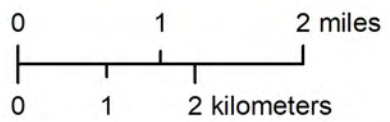
Should you have any questions, please contact our office.

Sincerely,


Todd L. Holweger
Permit Manager/Geophysical Supervisor



- CO₂ Injection Well
- Proposed AIM Station
- ▲ Weather Tower
- 1/2 Mile Buffer
- Area of Review





Energy & Environmental Research Center (EERC)

Basin Electric Research Project Seismic Stations

Seismic Stations

- **Purpose:** The data from these stations will be used to monitor seismicity at this site.
- Three seismographs will be installed near the Coteau Properties Company's Freedom Mine north of Beulah, ND.
- Each seismograph station will observe six components (6C) motion using pairs of sensors to measure translational and rotational ground motion.
- Each seismograph station will observe six components (6C) motion using pairs of sensors to measure translational (Geobit S100) and rotational (Eentec R2) ground motion. A 6C measurement provides a complete description of ground motion.



Seismic Stations

- At stations 1 and 2 the sensors will be installed in a yellow seismic vault that is buried so the top is level with the ground surface.
- At station 3 the rotational sensor will be installed in the vault and the translational sensor in a 10 ft deep well.
- In addition to the seismic vault a battery box and solar array will be mounted on a nearby pole.

Sensors

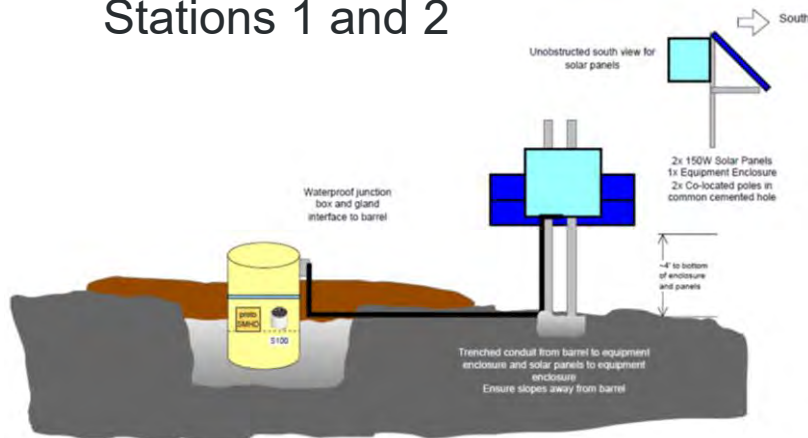


R2

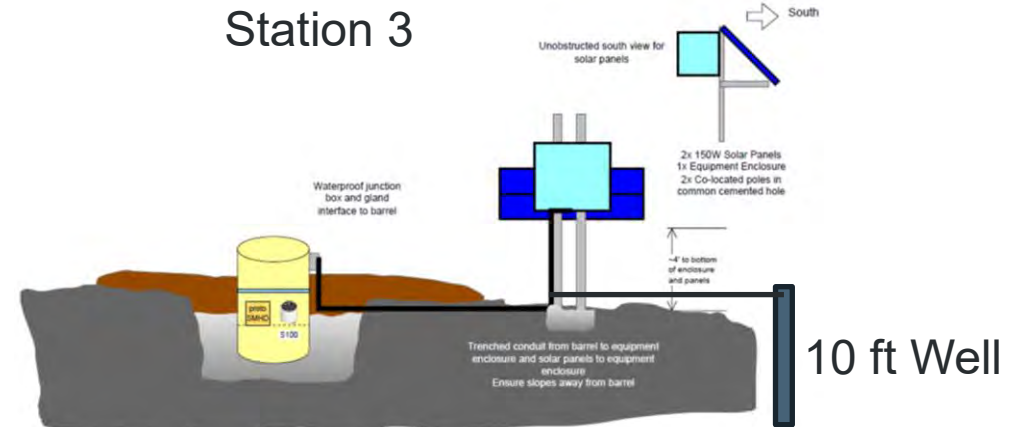


S100

Stations 1 and 2



Station 3





Trevor Richards
Assistant Director
trichards@undeerc.org
701.777.5052 (phone)

**Energy & Environmental
Research Center**
University of North Dakota
15 North 23rd Street, Stop 9018
Grand Forks, ND 58202-9018

www.undeerc.org
701.777.5000

A wide-angle photograph of a university campus at sunset. The sun is low on the horizon, casting a warm glow over the scene. In the foreground, there are large trees with some yellowing leaves. In the background, there are several large, multi-story brick buildings, some with white accents, and a parking lot filled with cars. The sky is a mix of orange, yellow, and blue.

THANK YOU

Critical Challenges. Practical Solutions.



October 4, 2024

Mr. Todd Holweger
Permit Manager/Geophysical Supervisor
ND Industrial Commission Oil & Gas Division
600 East Boulevard Ave, Dept 405
Bismarck ND 58505

Subject: Geophysical Exploration Permits

Dear Mr. Holweger:

All landowners within one-half mile of the proposed 2024 Basin Electric Research Project area have been notified of the schedule and location of the Towed Transient Electromagnetic (tTEM), Passive Seismic deployment and Seismic Station install activities estimated to take place in October and November and have been provided a written copy of the North Dakota Century Code (NDCC) Section 38-08.1-04.1 (Exploration Permit) and NDCC Chapter 38-11.1 (Oil & Gas Production Damage Compensation) as required by NDCC Section 38-08.1-04.1. There was a total of 4 private landowners and 3 industry landowners that were provided the required notification. The permits will be submitted by the University of North Dakota Energy and Environmental Research Center.

We look forward to working with you further with regard to this proposed geophysical project. Please contact me with any questions by phone at 701.557.5454 or by email at mmurray@bepc.com.

Sincerely,

Mike Murray, SR/WA, R/W-NAC
Director of Property & Right of Way



