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October 4, 2021

Ben Callan
Wisconsin Department of Natural Resources
Chief, Integration Services Section
Environmental Analysis & Sustainability Program
101 South Webster Street
Madison, WI 53707-7921

Re: WDNR Water Resources Application for Project Permits – Data Request Response

Dear Ben:

Per our discussion, Enbridge Energy, Limited Partnership (“Enbridge”) has prepared the enclosed information (provided electronically) in response to questions submitted by the Department of Natural Resources (“DNR”) to Enbridge on September 2, 2021. The attached information is provided in addition to the materials Enbridge submitted to the DNR on September 16, 2021.

If you have questions about the information presented in the attached materials, please contact me at (218) 390-9254.

Sincerely,

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Joe McGaver, PE
Technical Manager Environment
Enbridge Energy, Limited Partnership

Enclosures:

- Digital copy of Enbridge's October 4, 2021 supplemental responses to WDNR's September 2, 2021 data request

cc: Adam Mednick, Wisconsin Department of Natural Resources
Bill Sande, U.S. Army Corps of Engineers

**September 1, 2021 Wisconsin Department of Natural Resources Data Request Response
Additional Supplemental Material**

Data Request Question #7:

Please provide survey information with respect to locations where there are incised/down cut waterways, ravines susceptible to slumping, gullies, or other stream geomorphology that would be susceptible to erosion and future pipeline exposure.

Data Request Question #7 Response:

Avoidance of geohazards was a key design element when laying out the route, many were avoided by moving the route to its current alignment. A further review then occurred identified remaining geohazards. Each remaining geohazard was assessed and a mitigation was designed for each. These geohazards included slope instability, flowable soils, and areas where subsidence and other hydrotechnical geohazards were identified.

The process for identifying such locations was as follows:

- Complete a desktop investigation to characterize geohazard areas using existing and public databases and information (project data, topographical investigation, geological investigation, hydrotechnical investigation, localized investigation);
- Complete a field investigation to further characterize and evaluate the areas identified during the desktop investigation to collect additional information and to confirm potential geohazards identified and generate a risk ranked profile for each location including in some cases extending beyond areas surveyed or observed. Information collected includes:
 - o Site description
 - o Geotagged photographs;
 - o Geohazard characteristics;
 - o Slope instability features (i.e. angles, materials, soil properties, cracks or depressions, etc.);
 - o Subsidence features (i.e. soil layering, new growth patterns, etc.) ;
 - o Soil characteristics and sampling;
 - o Shallow or exposed bedrock outcrops
 - o Vegetation
 - o Springs, water seepage, ponding, or high-water table
 - o Stream characteristics (channel movement, undercut banks, etc.);
- Mitigation of the geohazard was based on field investigation and other analyses to achieve the best design for each location. Examples of mitigation designs that were used include:
 - o Pipeline Reroutes
 - o Horizontal Directional Drills (HDD)
 - o Increased Pipe Depth
 - o Slope stabilization Plans
 - o Drainage Schemes
 - o Erosion and Sediment Controls;

After a geohazard has been identified and mapped, a preliminary qualitative geohazard threat level was assigned (Low to High). The threat level is related to potential magnitude, location, likelihood, and severity of the geohazards impact to the system.

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Twenty seven potential geohazard areas were identified and are listed in table 7-1.

Table 7-1 Geohazard Areas along the Line 5 Wisconsin Segment Relocation Project Route

Geohazard ID	Location Description	Latitude	Longitude	Milepost	Geohazard Risk Ranking
G0A	Bay City Creek	46.55071	-90.89591	0.63	High
G2A	Little Beartrap Creek	46.52803	-90.89519	2.23	Low
G2B	Beartrap Creek	46.51827	-90.89505	2.92	High
G5A	Rock Creek	46.49060	-90.90080	5.06	Moderate
G5B	Drainage Area South of Rock Creek	46.48767	-90.90511	5.38	Low
G5C	UNT Deer Creek	46.48082	-90.90268	5.93	Moderate
G7A	Wiberg Road	46.45125	-90.89869	7.99	Low
G12A	UNT Marengo River	46.41943	-90.82464	12.75	Low
G14A	UNT Brunsweler River	46.40148	-90.80165	14.73	Moderate
G14B	Hanninen Road to Highway 13 Drainage Area	46.40003	-90.79754	14.96	Low
G15A	UNT Trout Brook	46.39723	-90.78131	15.87	Moderate
G19A	UNT Silver Creek	46.37217	-90.71825	19.83	High
G20A	Area East of Silver Creek North of County Road C	46.36328	-90.70128	20.91	Low
G21A	Area west of Access Road 046 North of County Road C	46.36026	-90.69608	21.26	Low
G22A	North of Krause Creek/South of County Route C	46.35512	-90.68382	22.10	Low
G22B	Area South of Krause Creek with Side Slope	46.34900	-90.67898	22.49	High
G23A	Golf Course Road – East of Crossing – Pipeline in stream	46.34093	-90.67169	23.19	Moderate
G23B	East of Golf Course Road and West of Highway 13	46.33838	-90.66617	23.50	Moderate
G23C	West of Highway 13 – Far slope	46.33650	-90.66141	23.79	Moderate
G23D	West of Highway 13 - Near slope	46.33596	-90.65965	23.88	Moderate
G24A	East of N. Butler Road	46.33599	-90.63942	24.89	Low
G25A	East of E. Butler Road	46.33737	-90.63312	25.22	High
G25B	East Butler Road to bore site 41E – Area 2	46.33963	-90.62610	25.63	Moderate
G28A	UNT Gehrman Creek	46.36645	-90.58320	28.65	Low
G29A	Camp Four Creek	46.37571	-90.56344	29.8	Low
G31A	Felcher Creek	46.39688	-90.54295	31.75	Low
G39A	Beaver Dam South of Steinmetz Road	46.48404	-90.48620	39.02	Moderate

Site-specific mitigation measures were developed during Project designed to address each geohazard and included:

- Avoidance of side slopes to cross contour lines perpendicular with the pipeline
- Avoidance of paralleling meandering watercourses
- Drainage:
 - o Trench Plugs, Rip-Rap Ditches, Pipe Trench Drains, Longitudinal Drains, Transverse Drains
- Surface water controls:
 - o Waterbars, Diversion Ditches
- Depth of cover

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- Backfill & Compaction Requirements
- Soil Amendments
- Mechanically Stabilized Slope Options
- Slope Facings

During the construction phase, if additional geohazards or potential geohazards are identified, Enbridge would evaluate the identified area and develop corrective actions, based on the site-specific conditions.

Enbridge may also elect to install monitoring equipment in areas identified as a geohazard location or potential future geohazard location. This equipment may include: strain gages, inclinometers, GPS pins, or similar devices.

Data Request Question #20:

Please supply the Health and Safety Plan and Operations Security Plan. If the plans contain business confidential or other sensitive information, please summarize the content and intent of the plans without divulging confidential or sensitive information.

Data Request Question #20 Response:

Enbridge's September 16, 2021 response to DNR Data Request Question #20 did not include the link to Enbridge's Health and Safety Plan, which was omitted in error. This Plan can be accessed online at the following location.

<https://www.enbridge.com/work-with-enbridge/doing-business-with-enbridge/policies>