9.0 PROJECT ENVIRONMENTAL DATA

Minn. R. 7853.0600
Minn. R. 7853.0610
Minn. R. 7853.0620
Minn. R. 7853.0630
Minn. R. 7853.0640

9.1 LOCATION

Minn. R. 7853.0610

Subpart 1: Land description

If a particular route has been selected for the new (sections of) pipeline, indicate that route on an appropriate map. If no particular route has been selected, indicate on an appropriate map each possible route that has been given serious consideration:

The Project extends from the North Dakota border in Kittson County, Minnesota, to the Wisconsin border in Carlton County, Minnesota. Enbridge's proposed Project route (Preferred Route) generally follows the Lakehead Corridor, which includes the existing Line 3, and would be located adjacent to Line 67 from the North Dakota border in Kittson County to Clearbrook, Minnesota. From Clearbrook, Enbridge's Preferred Route generally follows the route of a third-party pipeline to Hubbard, Minnesota, and then east, following portions of existing electrical transmission and railroad lines, before terminating at the Minnesota/Wisconsin border. In Minnesota, the Preferred Route will cross Kittson, Marshall, Pennington, Red Lake, Polk, Clearwater, Hubbard, Wadena, Cass, Crow Wing, Aitkin, and Carlton counties. A map of the Project is provided in Appendix A.

The permanent right-of-way (ROW) and temporary workspace land requirements may vary depending upon the final route determination. Table 9.1.1-1 includes the potential land requirements for the Project.

Table 9.1.1-1
Potential Land Requirements for the Line 3 Replacement Project

Preferred Route	Permanent Right-of-Way (feet) [a]	Temporary Workspace (feet)	Total Land Requirements (feet)
Upland	50	70	120
Wetland	50	45	95

[a] West of Clearbrook, where practicable, a portion of the permanent ROW will be in the existing permanent easement area for Line 67.

Subpart 2: Description of environment

For each route identified in response to subpart 1, list:

A. Cities

The names of cities or population centers through which the route passes:

In general, the Preferred Route avoids population centers and residential areas. Thirteen municipalities are located within approximately one mile of the Preferred Route, and three municipal boundaries will be crossed by the Preferred Route. Table 9.1.2.A-1 presents the municipalities that are located within one mile of the Preferred Route; rows shaded in gray represent municipality boundaries that will be crossed by the Preferred Route. All of the municipalities within one mile of the Preferred Route have populations of less than 1,400 people. The largest community is the City of Bagley in Clearwater County, with a population of 1,392 people.

Table 9.1.2.A-1
Municipalities within One Mile of the Project

County Municipality	Approximate Milepost	Population (2010) [a]
Kittson		
Donaldson (city)	26-W	42
Marshall		
Viking (city)	60-W	104
Pennington		
Saint Hilaire (city)	77-W	279
Red Lake		
Plummer (city)	87-W	292
Oklee (city)	98-W	435
Polk		
Trail (city)	106-W	46
Gully (city)	110-W	136
Clearwater		
Gonvick (city)	115-W	282
Clearbrook (city)	120-W	518
Bagley	12-E	1,392

Table 9.1.2.A-1 (cont'd) Municipalities within One Mile of the Project		
County **Municipality**	**Approximate Milepost**	**Population (2010) [a]**
Aitkin		
Palisade	159-E	167
McGregor	172-E	391
Carlton		
Wrenshall (city)	222-E	399
[a] Source: U.S. Census Bureau, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml; 2010 Total Population		

B. Federal, State, & County Lands

The number of miles of the route that pass through, respectively, federal lands, state lands, county or tax-forfeit lands, incorporated areas, and private land outside incorporated areas:

As shown in Table 9.1.2.B-1, the Preferred Route predominantly crosses private lands located outside of municipal areas (268.1 miles). The Preferred Route also crosses state lands owned and managed by various state agencies (25.4 miles), and lands owned by the state but administered by the county (tax-forfeit lands) (43.8 miles). Enbridge has initiated consultations with affected private landowners, watershed districts, counties, and state land-managing agencies to ensure that the Project is designed and constructed in a manner that is consistent with land use plans and with the necessary easements, permits, or licenses to cross lands of all ownership types.

Table 9.1.2.B-1
Ownership of Lands Crossed by the Project Preferred Route

Ownership	Crossing Length (miles)	Percentage of Route
Federal Lands	0[a]	0
State Lands	25.4 (state-administered) 43.8 (county-administered)	7.5 (state-administered) 13.0 (county-administered)
Private Lands	268.1	79.5
Total [b]	**337.3**	**100.0**

[a] Source: Minnesota Department of Natural Resources (MNDNR) 2008 GAP Stewardship dataset available only on MNDNR's Data Deli. The GAP Stewardship dataset indicates that the Preferred Route impacts 0.5 miles of Federal Lands owned by the Federal Housing Administration and the U.S. Army Corps of Engineers east of Clearbrook; however, title research indicates that this land is privately owned.

[b] The GAP dataset has overlapping features, causing some crossings to be over-represented. Enbridge continues to consult with private landowners, counties, and state and federal agencies regarding the ownership of lands crossed by the Preferred Route.

C. Soil Types

The general soil types along the route and the approximate percentage of each:

Table 9.1.2.C-1 provides a list and the approximate percentage of significant soil characteristics identified along the Preferred Route by county. Detailed soil characteristics along the majority of the Preferred Route were identified and assessed using Soil Survey Geographic (SSURGO) and U.S. Department of Agriculture (USDA) National Resources Conservation Services (NRCS) State Soil Geographic (STATSGO2) data. Enbridge initiated consultation with the Minnesota Department of Agriculture, the USDA NRCS, and the U.S. Farm Service Agency regarding soils along the Preferred Route.

Table 9.1.2.C-1
Soil Characteristics in the Line 3 Replacement Project Area

County	Total Acres in County [a]	Prime Farmland [b]	Farmland of Statewide Importance	Hydric Soils	Compact Prone	Highly Erodible		Droughty	Stony/ Rocky	Shallow to Bedrock [c]
						Water	Wind			
		Acres								
Kittson	265.3	260.0	3.8	228.8	123.2	0.0	0.0	0.0	0.0	0.0
Marshall	576.5	409.9	96.5	244.0	128.0	3.3	354.6	21.5	0.0	0.0
Pennington	317.3	214.1	50.1	315.5	32.3	6.9	144.7	57.6	1.5	0.0
Red Lake	244.8	214.2	24.1	244.8	0.0	0.0	80.8	34.9	0.0	0.0
Polk	211.4	80.9	23.1	112.5	45.1	37.2	186.0	36.0	0.0	0.0
Clearwater	643.5	377.6	163.8	151.1	76.3	121.0	257.1	130.3	0.0	0.0
Hubbard	688.9	47.9	328.1	171.4	41.8	218.6	650.1	491.6	0.0	0.0
Wadena	105.9	1.8	0.3	19.1	12.0	6.7	104.6	1.8	0.0	0.0
Cass	708.3	183.6	180.0	116.2	69.0	149.0	623.1	167.9	0.0	0.0
Crow Wing	74.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aitkin	696.5	274.3	46.6	391.2	285.5	50.3	545.9	93.7	0.0	0.0
Carlton	565.8	93.1	214.3	127.9	195.2	81.0	279.2	122.1	10.9	0.0
Percentage		42.3	22.3	41.6	19.8	13.2	63.3	22.7	<0.01	0.0
Total	**5,098.4**	**2,157.4**	**1,135.0**	**2,122.4**	**1,008.5**	**674.0**	**3,226.2**	**1,157.5**	**12.3**	**0.0**

N/A Data not available for Crow Wing County.

[a] Acreage is based on the construction ROW dimensions as discussed in Table 7853.0610.1-1.

[b] Includes prime farmland soils and soils considered prime farmland if limiting factors are mitigated.

[c] The Preferred Route will cross 2.5 miles of shallow bedrock in Carlton County based on regional digital data. This information was not reflected in NRCS soils data.

[d] There is a minor discrepancy in the total acreage here compared to the actual Project construction workspace acreage of approximately 5,113.5 acres. The SSURGO dataset has overlapping features, causing some areas to be over-represented.

D. Terrain

The general terrain along the route:

Topography across the Preferred Route varies widely given the variable nature of glacial deposition. The interrupted drainage of glacial terrain can be of low relief and includes wetlands, lakes, and gently rolling to undulating hills and ridges, as well as hummocky areas of high relief with steep hills and ridges associated with glacial end moraine deposits. Additionally, glacial erosion can remove unconsolidated deposits and scour bedrock, and glacial meltwater can incise significant valleys into bedrock. Elevations in the Project area range from approximately 760 feet to 1,679 feet above mean sea level.

E. Vegetation

The types of vegetation along the route (including forest, brush, marsh, pasture, and cropland) and the approximate percentage of each:

Approximately 40.3 percent of the area affected by the construction ROW will be agricultural land. This land consists of pastures or hay fields and cultivated crops such as corn, soybeans, wheat, oats, wild rice, and dry edible beans. Potatoes, sugar beets, vegetables, sod, and Christmas trees are also common crops in the counties crossed by the Project (USDA 2012). Approximately 46.8 percent of the area affected by the construction ROW will involve forested land, consisting of deciduous, evergreen, and mixed forests. The construction ROW will also cross wetlands/open water (approximately 6.2 percent of the area, including emergent herbaceous wetlands, woody wetlands, and open water), open land (approximately 6.5 percent of the area, including maintained rights-of-way, shrub/scrub areas, grasslands, developed open space, and barren land), and developed land (less than 1.0 percent, including areas of intensive use with much of the land covered by structures). Table 9.1.2.E-1 summarizes temporary and permanent impacts on land cover by cover type and county.

Table 9.1.2.E-1
Summary of Land Cover Impacts by County for the Line 3 Replacement Project

County	Agricultural Land		Forested Land		Wetlands / Open Water		Open Land		Developed Lands	
	Temporary [a]	Permanent [b]	Temporary [a]	Permanent [b]	Temporary [a]	Permanent [b]	Temporary [a]	Permanent [b]	Temporary [a]	Permanent [b]
	Acres									
Kittson	252.9	88.4	0.3	0.2	1.1	0.5	10.6	4.0	0.3	0.2
Marshall	528.8	194.6	17.5	7.0	2.0	1.7	27.1	9.4	0.9	0.5
Pennington	254.3	92.2	38.8	17.6	2.0	1.5	22.4	7.8	0.0	0.0
Red Lake	206.9	79.9	19.6	8.5	5.1	2.4	12.4	3.9	0.7	0.5
Polk	134.8	53.3	32.4	14.3	0.9	0.4	42.9	16.8	0.5	0.2
Clearwater	208.1	76.0	320.1	134.6	61.9	27.9	52.0	21.4	1.3	0.5
Hubbard	191.1	69.8	405.0	156.4	42.4	21.4	49.6	21.7	1.0	0.5
Wadena	0.2	0.1	93.3	37.1	9.8	4.8	2.7	0.9	0.0	0.0
Cass	63.4	23.8	557.0	223.2	48.0	22.4	39.5	18.0	0.2	0.1
Crow Wing	10.3	3.7	46.5	19.6	14.3	4.8	3.2	1.1	0.0	0.0
Aitkin	116.4	46.4	449.0	200.1	92.8	44.6	38.1	17.0	0.3	0.1
Carlton	90.0	34.2	406.5	172.9	35.8	18.7	31.4	12.7	2.3	1.0
Total [a]	**2,057.2**	**762.4**	**2,386.0**	**991.5**	**316.1**	**151.1**	**331.9**	**134.7**	**7.5**	**3.6**

[a] Total area of temporary construction impact (including areas permanently maintained and previously disturbed by existing Enbridge projects).

[b] Total area affected by operations (including areas permanently maintained by existing Enbridge projects).

[c] Numbers may not total consistently due to rounding. Calculations in this table are based on USGS GAP digital data only and do not reflect information gathered from field surveys, aerial desktop surveys, or field reconnaissance.

F. Land Use

The predominant types of land use along the route (such as residential, forest, agricultural, commercial, and industrial) and the approximate percentages of each:

Construction along the approximately 337.3 miles of the Project will affect approximately 5,098.7 acres of land. The predominant land use identified along the Preferred Route is agricultural land, which covers 2,057.2 acres (or 40.3 percent) of the total construction area. Of the agricultural land affected, approximately 1,468.1 acres are cultivated. The remaining 589.1 acres are hay/pasture land. Forest land accounts for 2,386.0 acres (or 46.8 percent) of the total construction area. Other land uses include wetland/open water (316.1 acres or 6.2 percent), open land (331.9 acres or 6.5 percent), and developed land (commercial and industrial) (7.5 acres or 0.1 percent). The Preferred Route does not cross any heavily developed residential areas.

G. Wetlands & Waterbodies

The names of major lakes or streams and the number of wetlands of five acres or more through which the route passes, as well as any others into which liquid contaminant from the pipeline could flow:

The Preferred Route will cross numerous rivers and streams. Milepost locations and waterbody names for each waterbody crossing, including those that are Minnesota Public Waters Inventory (PWI) watercourses are provided in Appendix K of this application. Enbridge initiated consultation with the U.S. Army Corps of Engineers (USACE), MNDNR, Minnesota Pollution Control Agency (MPCA), Minnesota Board of Water and Soil Resources, Wetland Conservation Act local governmental units, and other appropriate agencies regarding waterbodies and wetlands.

Enbridge initiated wetland surveys in 2013 and 2014 and will conclude these surveys in 2015. Approximately 95.0 percent of the Preferred Route in Minnesota was surveyed for wetlands as of 2014. Through a combination of National Wetland Inventory and field data, Enbridge determined that the Preferred Route will cross a total of 942 wetlands (based on feature IDs) and a total of 81.4 linear miles of wetlands. Table 9.1.2.G-1 summarizes temporary and permanent wetland impacts by county for four wetland types: palustrine emergent (PEM); palustrine forested (PFO); palustrine scrub-shrub (PSS); and palustrine unconsolidated bottom (PUB).

Table 9.1.2.G-1
Summary of Wetland Impacts by County for the Line 3 Replacement Project

County	PEM		PFO		PSS		PUB	
	Temporary [a]	Permanent [b]	Temporary [a]	Permanent [b]	Temporary [a]	Permanent [b]	Temporary [a]	Permanent [b]
	Acres							
Kittson	9.1	3.7	0.4	0.3	0.0	0.0	0.0	0.0
Marshall	22.0	11.0	0.5	0.3	0.7	0.1	0.0	0.0
Pennington	23.1	12.3	1.8	0.7	0.3	0.0	0.3	0.2
Red Lake	21.3	10.6	0.2	0.1	3.1	1.0	0.0	0.0
Polk	36.8	18.7	0.2	0.0	0.6	0.1	0.0	0.0
Clearwater	77.5	45.7	25.6	8.7	20.2	7.0	4.3	2.3
Hubbard	35.5	21.3	18.6	8.7	17.8	9.5	0.7	0.3
Wadena	8.0	4.1	0.4	0.2	3.0	1.7	0.0	0.0
Cass	62.8	34.6	37.9	18.1	25.2	12.6	1.4	0.6
Crow Wing	6.4	3.7	2.0	0.7	0.5	0.2	1.3	0.7
Aitkin	123.5	62.3	111.1	55.4	97.8	48.9	0.6	0.2
Carlton	31.8	17.9	79.3	37.9	62.6	31.9	0.5	0.2
TOTAL[d]	**457.8**	**245.9**	**278.0**	**131.1**	**231.8**	**113.0**	**9.1**	**4.5**

[a] Total area of temporary construction impact (including areas permanently maintained and previously disturbed by existing Enbridge projects).
[b] Total area affected by operations (including areas permanently maintained by existing Enbridge projects).
[c] Numbers may not total consistently due to rounding.

H. Roads, Railroads, & Airports

Trunk highways, railroads, and airports along the route:

The Project will cross federal, state, county, city, township, private, and commercial roads. In total, the Preferred Route crosses 417 roads (Table 9.1.2.H-1).

Table 9.1.2.H-1
Number of Roads Crossed by the Line 3 Replacement Project

County	Number of Roads
Kittson	22
Marshall	54
Pennington	39
Red Lake	18
Polk	18
Clearwater	44
Hubbard	63
Wadena	7
Cass	52
Crow Wing	5
Aitkin	52
Carlton	43
Total	**417**

The Project will also cross railroads. Specifically, the Project will cross the Burlington Northern Santa Fe, Northern Plains, Minnesota Northern Railroad, Inc., and Canadian Pacific Railway at nine locations in Kittson, Marshall, Pennington, Red Lake, Polk, Clearwater, Hubbard, Aitkin, and Carlton counties.

To minimize impacts to traffic, all paved roads and all active railroads will be crossed by boring underneath the road. Using this construction technique will prevent the need for road closures and allow traffic to operate normally. Boring techniques will minimize direct impacts to the road; however, construction on the portions of the pipeline that parallel the road could result in increased traffic. These impacts will be temporary, occurring only during construction.

The open-cut construction method typically will be used for unpaved roads. This construction method will require temporary closure and detours. If no reasonable detour is available, at least one traffic lane will be maintained, except for brief periods during installation of the pipe. Disturbances at each open-cut road crossing will typically be limited to one day and are not expected to have a substantial effect on local traffic patterns. All necessary safety measures such as detours, warnings, traffic control, and safety signs will be implemented as prescribed by federal, state, and local (county) departments of transportation. Enbridge will attempt to avoid road closures during peak-traffic periods.

Two airports are located within one mile of the Preferred Route: Bagley Airport in Clearwater County and the McGregor – Isedor Iverson Airport in Aitkin County. Enbridge will consult with the Federal Aviation Association and the Minnesota Department of Transportation Office of Aeronautics regarding construction techniques and potential construction impacts during the permitting process. According to data from the Federal Aviation Administration, there is a third airport within one mile – Sky Manor Estates in Hubbard County near MP 49.0-E. No airports are crossed by the Preferred Route.

I. Federally Designated Areas

National natural landmarks, national wilderness areas, national wildlife refuges, national wild and scenic rivers, national parks, national forests, national trails, and national waterfowl production areas through which the route passes, as mapped on the inventory of significant resources by the State Planning Agency:

The Project will not cross national parks, natural landmarks, wilderness areas, wildlife refuges, forests, or waterfowl production areas.

The Project will cross the North Country Trail, a National Scenic Trail, at MP 41.7-E in Hubbard County. Enbridge initiated consultation with the National Park Service (USNPS) and the North Country Trail Association regarding this crossing. Because the trail is on county-administered land, Enbridge will also consult with Hubbard County to minimize impacts to the trail.

The Project will also cross the Red Lake, Clearwater, Moose, Shell, Crow Wing, Middle, and Willow rivers, all of which are listed on the National Rivers Inventory (NRI) (USNPS 2013). The Project will not cross any river segments that are listed on the NRI as designated National Wild and Scenic Rivers. Enbridge initiated consultation with USNPS regarding these river crossings.

In addition, Enbridge will coordinate with MNDNR regarding these river crossings, as they are all Public Waters.

J. State Designated Areas

State critical areas, state wildlife management areas, state scientific and natural areas, state wild, scenic, and recreational rivers, state parks, state scenic wayside parks, state recreational areas, state forests, state trails, state canoe and boating rivers, state zoo, designated trout lakes through which the route passes, as mapped on the inventory of significant resources by the State Planning Agency:

The Project will not cross any state critical areas; scientific and natural areas; state wild, scenic, and recreational rivers; state parks; or scenic wayside parks, recreational areas, zoos, or designated trout lakes.

The Project will cross seven state forests, two state Wildlife Management Areas, one state Aquatic Management Area, three state trails, four canoe and boating routes, and four designated scenic byways. Enbridge initiated consultation with MNDNR regarding state-designated areas.

K. Historic, Cultural, & Archaeological Resources

National historic sites and landmarks, national monuments, national register historic districts, registered state historic or archaeological sites, state historical districts, sites listed on the National Register of Historic Places, and any other cultural resources through which the route passes, as indicated by the Minnesota Historical Society:

Enbridge reviewed the Minnesota State Historic Preservation Office's (SHPO) site files to identify previously recorded cultural resources and to determine how much of the Project area was previously surveyed for cultural resources. The Project area is defined for cultural resource purposes as the construction ROW plus additional temporary workspaces, facilities, and access roads. Based on this review, 52 previously recorded archaeological sites are located within area two-mile wide study area surrounding the Preferred Route. The known sites in the 2-mile-wide study area include earthworks, burials, and numerous campsites and artifact scatters representing the Pre-contact period, as well as homesteads, logging camps, and a Civilian Conservation Corps camp representing the Post-contact or historic period. The Shell River Prehistoric Village and Mound District (21HB06) is located 0.65 mile north of the Preferred Route in Hubbard County. The District was listed on the National Register of Historic Places (NRHP) in 1973. It documents the Woodland Period occupation of the region and contains archaeological remains of the prehistoric village and associated mounds. No off-ROW facilities, additional temporary workspace, or access roads will be located within one mile of this District.

Based on review of the SHPO files, lists of historic sites maintained by the Minnesota Historical Society, and threatened historic sites maintained by the Preservation Alliance of Minnesota, no national historic sites or landmarks, NRHP-listed historic districts, or national monuments are known within the Project area.

Approximately 45 percent of the Project corridor northwest of Clearbrook was surveyed between 1980 and 2008 for Enbridge's Line 67 and Southern Lights Pipeline Projects and did not need to be re-surveyed for the current Project. East of Clearbrook, the Project corridor had either not been previously surveyed, or areas were surveyed using methods that would not meet current standards for discovery and recordation. Table 9.1.2.K-1 provides a tally of the acres previously surveyed, acres surveyed in 2013 and 2014 for the Project, and acres remaining to be surveyed.

Table 9.1.2.K-1
Cultural Resources Survey Areas for the Line 3 Replacement Project

Survey Area [a]	Acres previously surveyed using modern standards	Acres surveyed in 2013 and 2014	Acres remaining to be surveyed
West of Clearbrook	3,821	4,450	133
East of Clearbrook	N/A	14,829	575
Total	**3,821**	**19,279**	**708**

[a] Includes pipeline corridor, off-corridor facilities, extra workspace, and access roads.

Enbridge has completed Phase I reconnaissance inventories of approximately 97 percent of the Project area and will conduct the remaining surveys in 2015. Surveyors identified 53 cultural resources sites within the Project area; of these, seven sites located within the construction workspace are recommended eligible for listing on the NRHP or are unevaluated for eligibility. Phase II evaluations have been completed for three of the seven sites; one of the three did not meet the criteria for listing on the NRHP, and results of testing at the other two sites will be reported in mid-2015. The remaining four potentially eligible sites have not been evaluated for NRHP eligibility and may require Phase II evaluation testing. Testing will be designed to collect sufficient information to make a recommendation regarding NRHP eligibility. If avoidance of an NRHP-eligible property is not possible, or places an undue burden on the Project, Enbridge will consult with interested parties and consider mitigation options.

The Unanticipated Discoveries Plan (UDP) (Appendix L) prescribes actions to be taken in the event that a previously unrecorded archaeological site or human remains are discovered during construction activities. The UDP directs the Construction Contractor and the Lead Environmental Inspector to stop activity and protect the find, then contact the appropriate expert or authority. In the event of such a discovery, construction activities in the immediate vicinity of the discovery will not resume until the find is fully investigated and cleared.

9.2 WASTEWATER, AIR EMISSIONS, AND NOISE SOURCES

Minn. R. 7853.0620

Subpart 1: Point Discharges to Water

Indicate the location, route, and final receiving waters for any discharge points. For each discharge point indicate the source, the amount, and the nature of the discharge (provide quantitative data if possible).

Potential discharges related to pipeline construction include hydrostatic test water discharges and trench dewatering discharges. All discharges will be implemented in accordance with Enbridge's Environmental Protection Plan (EPP) (Appendix M) and permits issued by the appropriate regulatory agencies. Enbridge will obtain an Individual National Pollution Discharge Elimination System (NPDES)/State Disposal System (SDS) permit for the discharges of hydrostatic test water and construction stormwater discharges from the construction of the pipeline. Hydrostatic testing of mainline pipe will be conducted after backfilling. Enbridge and its consultants and contractors are evaluating each discharge location based on the potential to discharge at all times of the year and in all potential weather conditions. Enbridge will incorporate additional protocols, as necessary, to avoid potential erosion at discharge locations based on site conditions at all times of the year. Enbridge has been in discussions with MPCA NPDES permitting staff to discuss new procedures that will be put in place to ensure that appropriate planning occurs prior to hydrostatic test discharge activities, as well as proper recording of information during actual discharge events. In addition, new procedures are in place to measure discharge flows. The total volume of water discharged and the discharge rate will be verified with a flow meter (or equivalent) or as required by the Individual NPDES permit. The total volume of water discharged and the discharge rate will not exceed that specified in the Individual NDPES permit. The permit conditions for site stabilization and restoration will mirror those in the General NPDES/SDS Permit (MNR1000001) currently in effect. Table 9.2.101 presents typical source, amount, and nature of point discharges to water that could be expected for the Project.

Table 9.2.1-1
Source, Amount, and Nature of Point Discharges

Source	Estimated Amount	Nature of Discharge
Trench Dewatering Discharges	Between 25,000 and 1.4 million gallons over the duration of the Project at each discharge location. Volume will be dependent on precipitation and groundwater levels.	Dewatering excavated trenches that fill with rain water or infiltrate groundwater during construction.
Hydrostatic Test Water Discharges	Between 3.5 million and 5.7 million gallons at each discharge location. Volume will be dependent on the amount of new piping or tankage involved in the test/discharge.	The discharge of water used to pressure test the new piping and tankage.

Water used for hydrostatic testing will most likely be appropriated from local streams, rivers, lakes, and/or groundwater sources, such as high-capacity irrigation wells or municipal wells along the Preferred Route. Enbridge has not selected specific streams, rivers, or lakes to be used for test water at this time. Enbridge will select water appropriation sites that meet MNDNR's criteria of "doing no harm." All appropriation sites will be reviewed by MNDNR prior to issuance of a Water Appropriations Permit. The MNDNR General Permit further states that water withdrawals must have a minimal potential for impacts on groundwater resources and must not adversely impact trout streams, calcareous fens, or other significant environmental resources. Enbridge may request withdrawal from impaired waters if use of the water will not impact the impairment for which the waterbody is listed. In the event that Enbridge must use water from a surface water source that is designated as infested, Enbridge will apply for an Infested Waters Diversion or Transportation Permit and will comply with all requirements of that permit. Although sources of hydrostatic test water have not been determined and may include waterbodies not crossed by the Preferred Route, the locations of waterbodies crossed are provided in Appendix K of this application.

Water used for hydrostatic testing will be discharged on land or returned to the waterbody from which it was appropriated, in accordance with the MPCA's NPDES permit requirements for the Project.

If hydrostatic test water is discharged directly into waterbodies, energy dissipation devices (i.e., splash pups) and controlled discharge rates will be used to prevent stream bottom scour. Enbridge will develop a site-specific discharge plan for each waterbody that will receive hydrostatic test discharges. At this time, Enbridge does not anticipate the use of test water additives and no chemicals will be used to dry the pipeline following the hydrostatic testing.

Testing of the pipeline will likely be conducted in segments, and the water will be discharged at various times and locations. Rate and quantity of individual discharges will be dependent on the length of the pipeline segment tested and applicable permit conditions.

The other type of potential point discharge to surface waters associated with pipeline construction is the discharge of water during trench dewatering activities. Enbridge cannot predict the locations of discharge from trench dewatering at this time. The need for trench dewatering will depend on local weather conditions, groundwater conditions, and construction constraints. Trench dewatering will be conducted in accordance with applicable permit requirements. Filtering devices, such as geotextile filter bags and/or straw bale structures, will be used as needed to reduce the amount of suspended solids in the discharge water.

Subpart 2: Area Runoff

Indicate the area from which runoff may occur, potential sources of contamination in the area, and receiving waters for any runoff.

The construction ROW, additional temporary workspaces, pipe yards, and contractor yards are potential areas for stormwater runoff along the pipeline route. During construction, potential sources of pollutants in runoff from these areas will be primarily associated with the erosion of soil in disturbed areas and the deposition of sediments in adjacent waterbodies. Potential receiving waters for stormwater runoff include those waterbodies crossed by or adjacent to the pipeline route, pipe yard, or contractor yard. Although receiving waters have not been determined and may include waterbodies not crossed by the Preferred Route, the locations of waterbodies crossed are provided in Appendix K of this application. Enbridge will work with the MPCA's NPDES staff to ensure the Project's Stormwater Pollution Prevention Plan (SWPPP) will protect soils and prevent potential discharges to waterbodies and impacts on impaired waterbodies. Enbridge will implement appropriate erosion control measures during and after construction to minimize erosion and sedimentation. These control measures are discussed in Section 1.9 of the EPP (Appendix M). Applicable state and local permits related to erosion and sediment control will be obtained for the Project. Enbridge is planning to adopt many of the permit conditions outlined in MPCA's Section 401 Water Quality Certification (WQC) issued for Line 67 and will include WQC-specific commitments in its permit application to MPCA for the Project.

Enbridge accessed a MPCA database to identify sites with known or potential contamination within 0.5 mile of the Project. Enbridge identified 38 such sites along the Preferred Route. Based on MPCA information and review of aerial photographs, 34 of the sites were determined to be more than 500 feet from the Preferred Route and are not anticipated to impact or be impacted by the Project. Because inaccuracies are inherent to the database, it will be necessary to evaluate facilities on a site-by-site basis. Prior to Project construction, Enbridge will assess the potential for encountering contaminated groundwater if any of the sites are actually located within 500 feet of the Preferred Route. If necessary, appropriate avoidance or mitigation measures will be developed and implemented in accordance with applicable state or federal regulations.

Enbridge is currently developing procedures to be implemented in the unlikely event that contaminated soils are encountered during construction. Potential contaminated sites could include tanks, leaks, unpermitted dump sites, landfills, solid waste, or hazardous waste sites. These procedures and mitigation measures will be provided to the contractor.

Subpart 3: Point Sources of Airborne Emissions

Estimate the quantity of gaseous and particulate emissions that would occur during full operation of the pipeline from each emission source and indicate the location and nature of the release point.

The Project will not have consequential air emissions under normal operating conditions. Criteria pollutant emissions from pipeline systems are predominantly limited to volatile organic compounds (VOC) from transferring crude oil to and from storage tanks and to fugitive VOC emissions from piping components (such as valves, flanges, and pump seals). The Project will connect to the existing Clearbrook Station, which is subject to MPCA permitting requirements under Minnesota Administrative Rules Chapter 7007. Emissions of criteria pollutants are currently regulated at the Clearbrook Station under an existing air emissions permit. Indirect criteria and greenhouse gas (GHG) emissions are generated as a result of using purchased electricity to run the pumps. Enbridge's pipelines are currently designed to operate efficiently, which minimizes demand for electricity (and as a result minimizes indirect GHG emissions). Because operation of the pipeline does not directly produce significant amounts of GHG emissions, operating the pipeline in the most efficient manner possible is the best way that Enbridge can help meet Minnesota's GHG reduction goals.

Subpart 4: Noise

Indicate the maximum noise levels (in decibels, A scale) expected along the route. Also, indicate the expected maximum increase over ambient noise levels.

Construction

The heavy equipment needed to construct the Project will have a short-term impact on noise levels in the vicinity of the construction ROW. Typical pipeline construction equipment (including bulldozers, loaders, backhoes, and sideboom tractors) generate from 80 to 90 A-weighted decibels (dBA) within 50 feet of the equipment. The equipment noise will be limited to the period of construction. Because the Preferred Route crosses primarily rural and undeveloped areas, the general public should experience limited nuisance noises. Noise levels in such areas are expected to range from 30-40 dBA, with higher baseline levels in more developed sections. Equipment noise would be expected to be within state daytime residential standards (<60 dBA) within 500 to 1500 feet depending on initial source level. In the vicinity of residential areas, the contractor will take all reasonable measures to control construction-related noise.

Operation

Noise is not generated along the pipeline ROW during normal operation. Pumping stations intermittently located along the Preferred Route will generate noise in the immediate vicinity of the pumping station. Enbridge will develop a Noise Impact Analysis for each of eight pump stations. MPCA Standards are the primary criteria for evaluation of future sound levels along with any Enbridge Design and Equipment Standards.

Field measurements of sound levels will be taken at the nearest receptors (usually residences) prior to installation of new pumping stations. For pump stations that will be built at locations where there are existing pump stations on other pipelines, Enbridge has baseline sound level data and reports of projected sound levels.

Using the baseline sound level data, future sound levels will be projected by adding the sound profile of the new equipment. A predicted future sound level will be determined and then evaluated to identify whether any additional sound attenuation measures should be included in the design. Because the pumps and motors for new stations will be located inside buildings, this is often sufficient to mitigate noise.

A survey of various pumping stations on the Lakehead Corridor was conducted in 1992. The survey indicated that typical noise generated at the fence line of pumping stations is between 40 and 60 dBA. Because pumping and tankage stations are located away from populated areas, residences are generally well away from fence lines and are expected to encounter far less noise from normal operations. Enbridge standards restrict noise levels resulting from operating

company equipment around neighboring dwellings and industrial facilities to 40 dBA, measured at a distance of 50 feet from the affected structure. Noise control is incorporated into the design if this level is exceeded. Background noise levels in rural or undeveloped areas near the stations are expected to range from 30-40 dBA.

9.3 POLLUTION CONTROL AND SAFEGUARDS EQUIPMENT Minn. R. 7853.0630

Enbridge will comply with applicable federal, state, and local rules and regulations and take appropriate precautions to protect against pollution of the environment. In addition, Enbridge will retain Environmental Inspectors (EI) to verify that environmental protection measures, permit conditions, and other specifications are implemented appropriately by contractors during construction. Enbridge has also committed to working with MNDNR and MPCA to develop a comprehensive third-party monitoring program during Project construction. Enbridge will work with the agencies to define the role and qualifications of proposed third-party monitors to ensure they are experienced in the type of construction they will be observing and knowledgeable regarding the resources that may be impacted.

Subpart 1: Air Pollution Controls

Indicate types of emission control devices and dust control measures that would be used.

Construction of the pipeline and associated facilities will result in intermittent and short-term fugitive emissions. These emissions will include dust from soil disruption and combustion emissions from the construction equipment. Fugitive dust emissions will depend on the moisture content and texture of the soils that will be disturbed. Emissions from fugitive dust are not expected to cause or significantly contribute to violation of an applicable ambient air quality standard. Enbridge will minimize dust generated from construction activities. Contractors will take all reasonable steps to control dust near residential areas and other areas as directed by Enbridge. Control practices may include wetting soils on the ROW, limiting working hours in residential areas, and/or additional measures as appropriate based on site-specific conditions. The use of dust suppression techniques will minimize fugitive dust emissions during construction of the Project, thereby minimizing potential air quality impacts on nearby residential and commercial areas.

Emissions from equipment combustion engines are not expected to cause or significantly contribute to a violation of an applicable ambient air quality standard because the construction equipment will be operated on an as-needed basis, primarily during daylight hours. Emissions from gasoline and diesel engines will be minimized because the engines must be built to meet the standards for mobile sources established by the U.S. Environmental Protection Agency (EPA) mobile source emission regulations, found at 40 C.F.R. Part 85.

Subpart 2: Water Pollution Controls

Indicate types of pollution control equipment and runoff control measures that would be used to comply with applicable state and federal rules, regulations, and statutes.

Enbridge has developed standardized erosion control and restoration measures to minimize and mitigate potentially adverse environmental effects resulting from ROW preparation, construction, operation, and maintenance of the Project. These measures are described in Enbridge's EPP (Appendix M). The EPP also describes planning, prevention, and control measures to minimize impacts of construction-related releases.

Enbridge will comply with applicable federal, state, and local rules and regulations and take appropriate precautions to protect against pollution of the environment. Enbridge is planning to adopt many of the permit conditions outlined in MPCA's Section 401 WQC issued for Line 67 and will include WQC-specific commitments in its permit application to MPCA for the Project. Enbridge will retain EIs to verify that environmental protection measures, environmental permit conditions, and other environmental specifications are implemented appropriately by contractors during construction. In addition, Enbridge supports third-party monitoring as recommended on past projects by the MNDNR, MPCA, and the USACE. Enbridge will continue to work with the appropriate agencies to define the roles and qualifications of proposed third-party monitors to ensure they are experienced in the type of construction they will be observing and knowledgeable regarding the resources potentially impacted.

Erosion control measures specified in the EPP (Appendix M) will be used to control stormwater runoff from the construction ROW and to minimize soil erosion. Enbridge will also work with the MPCA's NPDES staff to ensure the Project's SWPPP will protect soils and prevent potential discharges to waterbodies and impacts on impaired waterbodies.

The EPP (Appendix M) also outlines construction measures at waterbody and wetland crossings. For sensitive Minnesota PWI watercourses, basins, or wetlands, Enbridge will develop site-specific crossing plans that incorporate civil, environmental, and geomorphic stream survey data, seasonality concerns, and geotechnical survey and study data to inform the most appropriate crossing method. Enbridge has initiated detailed stream surveys to document the stability of sensitive waterbodies crossed by the Project. These site-specific plans, along with proposed and alternate crossing methods for each PWI feature crossed, will be reviewed and approved by MNDNR as part of licensing and by USACE and MPCA in support of the WQC.

During construction, Enbridge will enforce good housekeeping practices. Waste will be collected and removed promptly. Work areas will be kept clean and free of rubbish and debris. Fuel and all other hazardous materials will be stored at a distance of greater than 100 feet from streams and wetlands. Refueling will generally be in upland areas, which are greater than 100

feet from streams or wetland boundaries. Where this is not possible, site-specific control measures will be implemented. Procedures and responsibility for reporting and response for accidental releases during construction are clearly identified in the EPP (Appendix M). Enbridge's emergency response protocols are discussed further in the Safety Report (Appendix B).

Subpart 3: Oil Spill, Fire, & Explosion Safeguards

Describe measures that would be taken to prevent oil spills, fires, and explosions or to minimize the environmental impact of a spill, a fire, or of an explosion.

Enbridge's emergency response program consists of four elements: prevention, planning, resources, and training. Each of these elements is supported and coordinated through a clearly defined emergency response plan that Enbridge continuously evaluates and updates to ensure its effectiveness. Within the emergency response program, Enbridge has identified and planned for potential incidents that could affect public and employee safety and the environment.

For more information about Enbridge's emergency response program, see the Safety Report (Appendix B).

Subpart 4: Other Safeguards & Controls

Indicate any other equipment or measures, including erosion control that would be used to reduce the impact of the pipeline. Indicate the types of environmental monitoring, if any, that are planned for the facility and describe relevant environmental monitoring data already collected.

As set forth in Enbridge's Environmental Policy, protection of the environment is an integral element in the conduct of company business. Environmental protection efforts will span the entire Project, from planning through construction, restoration, and operation.

Equipment or Measures Used to Reduce the Impact of the Pipeline

Enbridge's planning, design, construction, and restoration will incorporate the equipment and measures discussed previously and described in the EPP (Appendix M) and in the Safety Report (Appendix B).

This Project involves maximizing co-location with other pipelines and utilities by installing the new pipeline on or adjacent to an existing ROW when possible. Construction of the new pipeline will cause temporary disruption but is not expected to result in long-term change to the environment.

For more information about safeguards and controls (including erosion control measures) implemented by Enbridge, see the Safety Report and the EPP attached (Appendices B and M, respectively).

Types of Environmental Monitoring Planned for the Facility

The pipeline system is a permanent, ongoing system, and Enbridge has an ongoing commitment to ensuring that operations are conducted in an environmentally responsible manner. Environmental inspection will be conducted during and after construction to monitor compliance with required environmental protection measures, permit conditions, and specifications. These specifications will also allow ongoing oversight for any unforeseen day-to-day issues. EIs will be trained and well-versed in environmental issues and field implementation. Contractors will be expected to have the necessary training, and additional training and briefings will be provided by Enbridge.

In addition, Enbridge is committed to developing a comprehensive third-party monitoring program during Project construction. Enbridge will work with MNDNR and MPCA to define the roles and qualifications of proposed third-party monitors to ensure they are experienced in the type of construction they will be observing and knowledgeable regarding the resources that may be impacted. Furthermore, Enbridge understands, based on past project experience, that the USACE will outline a long-term restoration monitoring plan for wetlands impacted by the Project. Enbridge will comply with long-term monitoring plans required by the USACE permit for the Project.

Environmental Monitoring Data Already Collected

Collection of field environmental data to date includes information on wetlands and waterbodies (see Section 7853.0610, subp. 2(G)) and cultural resources (see Section 7853.0610, subp. 2(K)) as well as noxious and invasive plants, sensitive plant communities, and sensitive animal species and their habitat. Enbridge will continue surveys in 2015 and will continue to work with appropriate regulatory agencies and obtain the necessary environmental data to complete permitting processes.

9.4 INDUCED DEVELOPMENTS

Minn. R. 7853.0640

Subpart 1: Utility Use

Indicate the extent to which the facility would create or add to the need for expanded utilities or public services.

New electrical transmission lines will be needed to serve the new pump stations east of Clearbrook. Enbridge is currently working with the electrical transmission provider to determine the facilities required to meet the needs of the Project.

Subpart 2: Water Use

Indicate the amount of water that would be appropriated for use in connection with the pipeline, the expected source of water, and the manner in which the water would be used.

Enbridge will hydrostatically test new pipe to verify its integrity prior to placing it in service. Hydrostatic testing will be conducted in accordance with PHMSA regulations. For more details hydrostatic testing and other water uses, see Section 7853.0620, subps. 1 and 2 above.

Subpart 3: Vehicular Traffic

Estimate the amounts and types of vehicular traffic that would be generated by the facility due to construction activity and, later, operational needs.

Short-term impacts on local transportation systems may result from construction across roads and railroads; movement of construction equipment and materials to work areas; and daily commuting of the construction workforce to work sites.

Enbridge anticipates that up to 25 truckloads of 36-inch pipe will be needed per mile of pipeline over area roads to deliver the pipe along the construction route. Truck traffic associated with transporting this pipe, as well as other construction-related travel associated with the Project, may increase the workload of local authorities to assist with traffic control. In addition, local authorities may need to assist with short-term detours at pipeline road crossings or delays in traffic flow from large, slow-moving vehicles.

The movement of construction personnel, equipment, and materials from contractor and pipe yards to the construction work area will result in additional short-term impacts on local transportation systems. Enbridge anticipates that up to 370 light duty (two axle) vehicles and up to 30 heavy duty (three or more axle) vehicles will enter and exit the work site each day during peak construction. Traffic will remain fairly consistent throughout the construction period and will typically peak during early morning and evening hours. Enbridge anticipates

that road congestion will increase during these peak hours but will not substantially disrupt the normal flow of traffic in the Project area.

Incremental road congestion may be caused by construction workers commuting to and from work sites on a daily basis. Notable increases in rush hour traffic, however, are not anticipated because of the generally rural location of the Project. Pipeline construction is also generally scheduled to take full advantage of daylight hours, with most workers commuting during off-peak hours. In addition, construction workers typically leave their personal vehicles at contractor yards and carpool to work sites, which will help reduce road congestion. Finally, workers will generally be dispersed along the entire length of the pipeline route, as opposed to concentrating at a single work site, thereby reducing impacts on traffic at any one location.

To maintain safe conditions, Enbridge will direct its construction contractors to adhere to local weight restrictions and limitations for construction vehicles and to remove soil that is left on the road surface by the crossing of construction equipment. In addition, when it is necessary for construction equipment to move across paved roads, mats or other appropriate measures will be used to minimize damage to the road surface.

For the most part, day-to-day operational traffic related to the Project will not be noticeable. Enbridge and its contractors will access the pipeline ROW and aboveground facilities as required to perform vegetation maintenance and monitoring activities. Some increased traffic will occur in localized areas of pipeline maintenance activities, but these instances will be infrequent and of short duration.

Subpart 4: Agriculture

Estimate the number of farms and the number of acres of cropland and pasture land that would be affected by construction of the pipeline. Indicate known circumstances with regard to the pipeline that would tend to reduce agricultural productivity along the route. Estimate the amount of excavation, backfilling, grading, soil compaction and soil mixture, and ditching to be done in farm fields. Estimate the number of drainage ditches to be impacted by the pipeline.

Agricultural land accounts for 2,057.2 acres (or 40.3 percent) of the total construction area. Of the agricultural land affected, approximately 1468.1 acres are cultivated, and the remaining 589.1 acres are hay/pasture land. Based on full ROW stripping for a70-foot width, the total excavation/grading of topsoil in agricultural lands will comprise approximately 2.07 million cubic yards of topsoil. The total excavation of trench subsoil in agricultural lands will comprise approximately 0.945 million cubic yards of subsoil. Approximately 575 agricultural farmed tracts will be crossed by the Project. Approximately 34 drainage ditches will be crossed by the Project.

Construction activities will temporarily utilize active cropland within construction ROW and additional temporary workspaces. Depending on the season, construction activities may also interfere with center-pivot irrigation systems, planting, and/or harvesting. After construction, agricultural activities will resume within the temporary and permanent ROW. Enbridge will maintain access to fields, storage areas, structures, and other agricultural facilities during construction and will maintain irrigation and drainage systems that cross the ROW to the extent practicable. Agricultural land in the construction ROW will generally be taken out of production for one growing season and will be restored to previous uses following construction. Enbridge will compensate landowners for crop losses and other damages caused by construction activities. Losses and disturbances to production, harvesting, irrigation, and drainage systems will be identified, and measures will be taken to avoid, mitigate, minimize, or otherwise address those effects in accordance with Enbridge's Agricultural Protection Plan (APP) (Appendix N).

Enbridge will implement measures to avoid, minimize, or mitigate potential impacts on soil productivity in accordance with the APP (Appendix N). These measures include topsoil segregation, stone removal, and measures to avoid compaction or loosen compacted soils. To prevent or minimize soil compaction, drainage alteration, and damage to crops, operation of maintenance equipment on agricultural lands will be limited to access routes established by Enbridge in agreement with landowners.

Enbridge will also take appropriate measures to accommodate livestock operations during construction. To minimize short-term disruption to livestock operations, Enbridge will minimize the length of time that the trench is open and will coordinate with landowners to minimize disruption of access. During construction, Enbridge will work with landowners to ensure safety of livestock. Enbridge may erect temporary fences or other exclusionary techniques as needed before construction to limit livestock access to the ROW and after construction to promote effective restoration. The exclusionary techniques will minimize livestock impacts to impaired waterbody crossings and help ensure effective restoration. Enbridge cannot require landowners to exclude livestock from their property upon completion of restoration.

Subpart 5: Relocation of Persons

Estimate the number of people that would have to relocate if the pipeline were constructed.

Because construction and operation of the Project will require acquisition of additional property, the Project could result in relocation of people.