

**BEFORE THE SOUTH DAKOTA PUBLIC UTILITIES COMMISSION**

**DOCKET NO. HP14-002**

**IN THE MATTER OF THE APPLICATION OF DAKOTA ACCESS, LLC FOR AN  
ENERGY FACILITY PERMIT TO CONSTRUCT THE DAKOTA ACCESS PIPELINE**

**Direct Testimony of Ryan Ledin  
On Behalf of the Staff of the South Dakota Public Utilities Commission  
July 6, 2015**

1 **Q: Please state your name and business address.**

2 A: Ryan Ledin  
3 Natural Resource Group, LLC  
4 IDS Center, 80 S 8<sup>th</sup> St, Minneapolis, MN 55402

5 **Q: Describe your educational background.**

6 A: I received my Bachelor's degree in 2009 from Winona State University, in  
7 Environmental Geology – Environmental Science

8 **Q: By whom are you now employed?**

9 A: I have been employed by Natural Resource Group, LLC, an ERM Group  
10 Company since 2012, and was employed at E3 Environmental, LLC from 2010 to  
11 2012. I currently hold a Construction Compliance Specialist position in our  
12 Construction Compliance Group.

13 **Q: What work experience have you had that is relevant to your involvement on  
14 this project?**

15 A: At NRG my responsibilities have included providing support in the pipeline and  
16 transmission line industries with environmental permitting and environmental  
17 review services including assisting in the preparation of Environmental Impact  
18 Statements and Environmental Assessments under the National Environmental  
19 Policy Act and/or applicable state programs. I have environmental consulting  
20 experience in the natural gas and petroleum pipeline industries including  
21 gathering, interstate and intrastate, as well as operations and maintenance  
22 projects.

23  
24 I have experience with various federal, state, and local agencies, including the  
25 Bureau of Land Management (BLM), U.S. National Forrest Service (NFS),  
26 Federal Energy Regulatory Commission (FERC), U.S. Army Corps of Engineers  
27 (COE), and U.S. Fish and Wildlife Service (USFWS). Stormwater permitting in 20  
28 states (AL, CO, IA, IL, IN, PA, MO, MN, MT, ND, OH, OK, SD, TX, WI, WY).

29  
30 I have acted as the Environmental Inspector during pipeline construction in 6  
31 states involving more than 1,500 miles of right-of-way, and as a Lead  
32 Environmental Inspector on various gathering projects in North Dakota.

33  
34 I have also served as a construction compliance advisor for several potential  
35 pipeline projects, reviewing route and design plans for constructability issues in  
36 relation to natural resources impacts and environmental permitting.

37 **Q: What Professional Credentials do you hold?**

38 A: None.

39 **Q: What is the purpose of your testimony?**

40 A: I evaluated the hydrology, hydrostatic test water use, and water quality Project  
41 constraints sections (15.0, 15.1, 15.2, 15.3, 15.4, 15.5, and 20.0) of the Dakota  
42 Access LLC (Dakota Access) Revised South Dakota Public Utilities Commission  
43 Application (PUC) for a permit to construct the Dakota Access Pipeline under the  
44 Energy Conservation and Transmission Facility Act. I also evaluated Dakota  
45 Access's Agricultural Impact Mitigation Plan and Draft Stormwater Pollution  
46 Prevention Plan (SWPPP) to further review the level of detail provided for erosion

1 control and revegetation mitigation measures to assess that areas affected by  
2 construction of the proposed Project would be restored to pre-construction  
3 conditions within a reasonable timeframe post construction.

4 **Q: What methodology did you employ?**

5 A: I assessed the information provided in Sections 15.1, 15.2, 15.3, 15.4,15.5 and  
6 20.0 of the Dakota Access's Revised PUC by comparing it to information which is  
7 normally provided in comparable industry-standard applications for state and  
8 federal permits. I also assessed the information provided in the SWPPP and the  
9 Agricultural Impact Mitigation Plan by comparing it to multiple project-specific  
10 construction mitigation plans used for projects in a similar geographic region.

11 **Q: Did you review sections 15.1, 15.2, 15.3, 15.4, 15.5, and 20.0 of the Revised  
12 Application that address hydrology, hydrostatic test water use, and water  
13 quality?**

14 A: Yes, I reviewed sections 15.1, 15.2, 15.3, 15.4, 15.5, and 20.0 of the Revised  
15 application as well as the SWPPP, the Agricultural Impact Mitigation Plan, and  
16 Dakota Accesses' responses to PUC staff's data requests that were applicable to  
17 hydrology, hydrostatic test water use, and water quality.

18 **Q: Does Dakota Access correctly identify the permits required for hydrostatic  
19 test water withdrawal and discharge?**

20 A: The Draft PUC Application appears to omit the South Dakota Temporary  
21 Discharge Permit that covers Hydrostatic Test and Trench Dewatering. The  
22 permit number is SDG070000, and requires authorization. This permit has  
23 monitoring, reporting, and recording requirements.

24 **Q: Do you have any additional recommendations for Dakota Access in regards  
25 to either hydrostatic test water withdrawal or discharge?**

26 A: At the time of our review, the locations for hydrostatic test water withdrawal and  
27 discharge had yet to be identified. I recommend that qualified people with an  
28 engineering and environmental background having familiarity with hydrostatic  
29 test withdrawals and discharges review all proposed locations prior to the  
30 submittal of permit applications or notices. I also recommend identifying and  
31 permitting several locations in addition to what may actually be needed as a  
32 contingency plan.

33 **Q: Did you review Dakota Access's Stormwater Pollution Prevention Plan  
34 (SWPPP), as found in Exhibit D of the Revised Application?**

35 A: Yes.

36 **Q: In your opinion, does the SWPPP follow standard industry practices and  
37 comply with applicable regulations?**

38 A: The plan includes many standard industry practices, but fails to quantify the  
39 measureable standards by which such industry practices will be implemented on  
40 the Project (e.g. slope breaker intervals, use of trench plugs, type and frequency  
41 of erosion control devices, application of mulch). Recommendations for these  
42 measures are included below.

43 **Q: Do you have any recommended changes for the SWPPP? If so, please  
44 explain.**

45 A: Yes, based on a determination that some Project construction activities are likely  
46 to take place during frozen conditions. As mentioned in NRG's testimony

1 regarding soil types and geological features, the Revised Application, SWPPP,  
2 and Agricultural Impact Mitigation Plan do not mention winter construction,  
3 stabilization procedures, or seeding over winter. If construction is to take place  
4 over the winter months, we recommend that the PUC require a Winter  
5 Construction Plan be filed prior to issuing Dakota Access a permit. That  
6 testimony provided several examples of industry standard documents that  
7 include recommendations for the development of project-specific winter  
8 construction plans.

9  
10 In several portions of the SWPPP, erosion and sediment control installation (both  
11 timing and frequency) are left to the discretion of the Environmental Inspector.  
12 This could create an inconsistency as there are multiple Environmental  
13 Inspectors per spread, and multiple spreads across the Project. Specifically  
14 installation of Temporary Slope Breakers, Permanent Slope Breakers, and  
15 Temporary Trench Plugs should be standardized with the opportunity for  
16 changes based on site conditions and in consultation with agency  
17 representatives, when indicated. Industry standards call for approximate spacing  
18 versus percent slope.

19  
20 *For example:*

21 Industry standards hold that **temporary slope breakers** should be installed to  
22 minimize concentrated or sheet-flow runoff in disturbed areas in accordance with  
23 the following maximum-allowable spacing.

24

Slope (%)	Approximate Spacing (ft)
5-15%	300ft
>15-30%	200ft
>30%	100ft

29

30 **Temporary trench plugs** should be installed at the edge of wetlands. Where a  
31 waterbody is located within a wetland, install trench breakers at the wetland  
32 edge.

33

Slope (%)	Approximate Spacing (ft)
5-15%	300ft
>15-30%	200ft
>30%	100ft

38

39 The Dakota Access SWPPP only calls out temporary trench plugs adjacent to  
40 waterbodies or drain tiles. It again leaves the frequency of installation to the EI or  
41 CI, which could create inconsistencies.

42  
43  
44  
45 *For example:*

1 **Permanent slope breakers** should be installed to minimize concentrated or  
2 sheet-flow runoff in disturbed areas in accordance with the following maximum-  
3 allowable spacing.

Slope (%)	Approximate Spacing (ft)
5 5-15%	300ft
6 >15-30%	200ft
7 >30%	100ft

9  
10 Although special pipeline construction techniques for wetlands and waterbodies  
11 are called out in the Revised Application (sections 17.1, 17.1.1, 17.2, and  
12 17.2.1), they are not mentioned in the SWPPP.

13  
14 I recommend that a master waterbody and wetland crossing table be included in  
15 the SWPPP with milepost or stationing indicating the features' exact locations.  
16 The Revised Application mentions this is located in Exhibit C. Because the  
17 SWPPP is the living document during construction, I recommend that the table in  
18 Application Exhibit C be added to the SWPPP as an appendix.

19  
20 Although the PUC Draft Application describes the open-cut, flume, and dam and  
21 pump special construction techniques at waterbody crossings, it does not  
22 specifically call out the locations where these techniques will be used. I  
23 recommend that the crossing method be indicated in the master waterbody table  
24 with an alternative method also stated. In this way the Environmental Inspector  
25 can make recommendations based on the method that is planned.

26  
27 The Revised Application does not define minor or intermediate waterbody  
28 crossings, which are typically defined by their crossing width. Along with these  
29 crossing widths come standard timing restrictions for open cut or dry crossing  
30 methods. I recommend defining minor, intermediate, and major waterbody  
31 crossings by crossing width and assigning a timing restriction. These would not  
32 apply to HDD crossings.

	Crossing Length	Timing Restriction
33 Minor	<10'	< 24 hours
Intermediate	10' – 100'	< 48 hours
Major	>100'	< 72 hours or custom restriction.

34  
35 Decisions regarding the application of mulch to the right-of-way are delegated to  
36 the Environmental Inspector. I recommend specifying a slope, such as 5% and  
37 greater, to apply mulch. By leaving this to the Environmental Inspector's  
38 discretion, this could result in inconsistency throughout the project.

39  
40 The SWPPP calls for an inspection at least weekly. This should be clarified to be  
41 once every seven calendar days according to Section 3.12 of the South Dakota

1 General Stormwater Permit. "Weekly" could be misinterpreted as "once per  
2 calendar week," which could result in inspections occurring as many as 14 days  
3 apart.  
4

5 **Q: Did you review section 16.1 of the Revised Application that discusses**  
6 **expected impacts to vegetation from construction of the pipeline and**  
7 **Dakota Access's plans for mitigating these impacts?**

8 A: Yes

9 **Q: In your opinion, do the construction techniques and mitigation measures**  
10 **identified by Dakota Access adequately minimize the impacts to**  
11 **vegetation?**

12 A: Yes, the Revised Application adequately describes industry standards of topsoil  
13 segregation.

14 **Q: Do you have any additional recommendations for mitigation measures in**  
15 **order to minimize impacts to vegetation?**

16 A: The Revised Application has no mention of cleaning stations to avoid the spread  
17 of noxious weeds/invasive species. A typical recommendation is for equipment  
18 cleaning stations to be staged at the entry and exit of known noxious weed  
19 areas. Typical techniques at cleaning stations include compressed air pressure  
20 and brushes. Equipment should be thoroughly cleaned prior to entry and exit of  
21 noxious weed areas.  
22

23 Mechanical control (e.g., mowing or disking) can also be an effective control  
24 measure for annual weed species. The efficacy of mechanical control measures  
25 is dependent upon proper timing to cut the vegetation prior to the maturation of  
26 seed and may require multiple treatments during the growing season. The  
27 NRCS or local county authorities should be consulted regarding management of  
28 noxious weeds.

29 **Q: Did you review sections 17.1 and 17.2 of the Revised Application that**  
30 **discuss expected impacts to waterbodies from construction of the pipeline**  
31 **and Dakota Access's plans for mitigating these impacts?**

32 A: Yes

33 **Q: In your opinion, do the construction techniques and mitigation measures**  
34 **identified by Dakota Access adequately minimize the impacts to**  
35 **waterbodies?**

36 A: Several recommendations for open-cut and dry crossing methods (dam and  
37 pump, flume) are included in this testimony.

38 **Q: Do you have any additional recommendations for mitigation measures in**  
39 **order to minimize impacts to waterbodies?**

40 A: Excavated material from the stream should be set back further than the ordinary  
41 high water mark. Typically additional temporary workspace may be used for  
42 spoil storage. Industry standards typically place the edge of the workspace at 50'  
43 back from the ordinary high water mark, as well as in an area with relatively little  
44 slope (less than 5%).  
45

46 The Revised Application does not describe in-stream activities.

- 1           ▪ Excavating equipment should operate from one or both banks, without  
2           entering the stream. If equipment must encroach into the stream it should  
3           operate on clean construction mats. Material removed from the stream  
4           should be placed on the banks in spoil containment areas.
- 5           ▪ If trench dewatering is necessary, the pump intake should be suspended  
6           off the trench bottom and dewatering will take place into a sediment filter  
7           bar or a straw bale dewatering structure. The trench should be dewatered  
8           in such a manner that no heavily silt-laden water flows into streams and  
9           wetlands.
- 10          ▪ Backfill material should consist of the spoil material from the trench unless  
11          otherwise specified in state and federal permits. In-stream trenches should  
12          be returned to pre-construction contours.

#### 13 14 Dam and pump

- 15          ▪ Stream flow should be pumped across the construction area through a  
16          hose and will be discharged onto an energy-dissipation device.
- 17          ▪ Pumps should have a capacity greater than the anticipated stream flow.
- 18          ▪ A backup pump of equal or greater capacity will be on-site at all times in  
19          the event that the primary pump fails.
- 20          ▪ Standing water that is isolated in the construction area by the dams or any  
21          stream water that leaks around the dams or seeps from the ground into  
22          the trench during construction will be pumped into a sediment filter or a  
23          straw bale dewatering structure located in an upland area.

#### 24 Flume

- 25          ▪ Flumes should be sufficient diameter to transport maximum seasonal  
26          flows.
- 27          ▪ The upstream and downstream ends of the flume(s) will be incorporated  
28          into dams made of sand bags and plastic sheeting (or equivalent).

29  
30 I recommend that a master waterbody and wetland crossing table be included in  
31 the SWPPP with milepost or stationing calling their exact locations. The PUC  
32 Draft Application mentions this is located in Exhibit C. As the SWPPP is the living  
33 document in the field, I recommend it be added to the SWPPP as an appendix.

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35 Although the Revised Application describes the open-cut, flume, and dam and  
36 pump special construction techniques, it does not specifically call out the  
37 locations at which these techniques will be used. I recommend that the crossing  
38 method be called out with an alternative method in place. This way the  
39 Environmental Inspector can make recommendations based on the method that  
40 is planned.

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42 The PUC Draft Application does not define minor or intermediate waterbody  
43 crossings, which are typically defined by their crossing width. Along with these  
44 crossing widths come standard timing restrictions for open cut or dry crossing  
45 methods. I would recommend defining minor, intermediate, and major waterbody

1 crossings by crossing width and assigning a timing restriction. These would not  
2 apply to HDD crossings.  
3

	Crossing Length	Timing Restriction
Minor	<10'	< 24 hours
Intermediate	10' – 100'	< 48 hours
Major	>100'	< 72 hours or custom restriction.

4  
5 **Q: Are Dakota Access's proposed construction techniques for waterbody**  
6 **crossings consistent with industry standard practices?**

7 A: The construction practices stated in the Revised Application are typical.

8 **Q: Do you have any concerns with the proposed waterbody crossing**  
9 **construction techniques proposed by Dakota Access? If so, please explain**  
10 **and provide any recommendations you have for addressing your concerns.**

11 A: See recommendations.

12 **Q: Did you review Dakota Access's Horizontal Directional Drill (HDD)**  
13 **Contingency Plan?**

14 A: Yes.

15 **Q: In your opinion, does the HDD Contingency Plan adequately mitigate the**  
16 **impact to waterbodies should an inadvertent release occur?**

17 A: Yes, however I have some recommendations. See below.

18 **Q: Do you have any recommended modifications for the HDD contingency**  
19 **plan? If so, please explain.**

20 A: I recommend that the construction contractor notify the CI or EI when there is a  
21 loss of pressure. This should trigger an inspection by the EI of the HDD path. At  
22 this point the bentonite slurry should be thickened. It's possible that the drill will  
23 lose pressure and fill a void in the substrate.

24  
25 The construction contractor should have containment BMPs for inadvertent  
26 releases in open water. I recommend that silt curtains remain on site and  
27 available. The contractor should plan on having a small boat available in order to  
28 deploy a silt curtain around an inadvertent release.

29 **Q: Did you review the Draft Spill Prevention, Control, and Countermeasures**  
30 **Plan (SPCC Plan)?**

31 A: Yes.

32 **Q: Is Dakota Access required by law or regulation to maintain an SPCC Plan**  
33 **for both construction activities and operation of the pipeline? If so, please**  
34 **explain what laws and regulations apply.**

35 A: South Dakota does not have a counterpart to the federal SPCC Plan rules.

36 **Q: In your opinion, does the SPCC plan comply with the applicable laws and**  
37 **regulations?**

38 A: Yes.

39 **Q: Do you have any recommended modifications for Dakota Access's SPCC**  
40 **Plan? If so, please explain.**

41 A: I recommend that each construction spread identify a separate spill coordinator.



1 Q: Does this conclude your testimony?  
2 A: Yes.

