

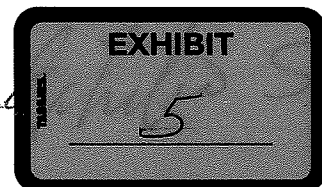
Direct Testimony

Witness Rick Nelson

Before the Public Service Commission of  
The State of North Dakota

In the Matter of the Application of  
Dakota Gasification Company  
For A Certificate of Corridor Compatibility and a Route Permit for  
Reconstruction of DGC's CO<sub>2</sub> Pipeline Across Lake Sakakawea

Case No. PU-07-184  
June 12, 2007



	<b>Foss:</b>	Dakota Gasification would like to call as its next witness Mr. Rick Nelson.
1.	<b>Q.</b>	Mr. Nelson, could you give your name and business address please?
	<b>A.</b>	My name is Rick Nelson. My title at Dakota Gasification Company is Senior Environmental Engineer. My business address is 420 County Road 26 Beulah, ND 58523.
2.	<b>Q.</b>	Mr. Nelson, could you provide an outline of your educational and professional background?
	<b>A.</b>	I have a Bachelors of Science degree in Civil Engineering from North Dakota State University and a Masters of Science degree in Civil Engineering from Montana State University. I am a registered professional engineer.
3.	<b>Q.</b>	Mr. Nelson, what is the scope of your responsibilities with respect to this project?
	<b>A.</b>	I am responsible for the permitting and the environmental aspects of the project.
4.	<b>Q.</b>	Mr. Nelson, could you describe the existing regulatory framework with respect to the existing pipeline?
	<b>A.</b>	The pipeline and associated facilities are designed, constructed, operated and maintained in strict accordance with the requirements of the U.S. Department of Transportation Pipeline Safety Regulations Code of Federal Regulations ( <b>CFR</b> ) Title 49, Part 195, Transportation of Hazardous Liquids by Pipeline, as well as other applicable codes, regulations, and standards in the United States and Canada.
5.	<b>Q.</b>	Mr. Weir testified with respect to the changed conditions which have prompted Dakota Gasification Company to replace the pipeline. Mr. Nelson, can you describe the manner in which the existing lake crossing was constructed?
	<b>A.</b>	For the initial lake crossing, the pipeline was trenched with a minimum cover of four feet to a lake bottom elevation of 1,805 feet. Below elevation 1,805, the line was laid on the bottom of the lake. As Mr. Weir mentioned, since the installation of the pipeline crossing in 1999, the lake level has dropped approximately thirty feet.
6.	<b>Q.</b>	Mr. Nelson, could you describe the schedule for permitting and constructing this project?
	<b>A.</b>	Yes. We applied for approval from the United States Corps of

		<p>Engineers on April 20, 2007. We filed our Consolidated Application for a Certificate of Corridor Compatibility and Route Permit in this proceeding on May 11, 2007. The acquisition of rights to use the temporary lay down area, which is owned by the North Dakota School Lands Trust, is scheduled to be completed before July 2, 2007. Assuming we have the necessary approvals, construction would commence on July 9, 2007 (we had noted July 16, 2007 in our application). The project is scheduled to be completed on October 12, 2007, testing would occur on October 15, 2007 and the project would be placed in service on October 17, 2007.</p>
7.	<b>Q.</b>	Mr. Nelson, have any sensitive plant or wildlife evaluations been done in conjunction with this project?
	<b>A.</b>	<p>Sensitive plant and wildlife potentially affected by the project were evaluated. Information related to sensitive species was obtained from several agencies including the U.S. Fish &amp; Wildlife Services, North Dakota Game &amp; Fish Department, and the U.S. Army Corps of Engineers. Sensitive species potentially present along or near the proposed route include the interior least tern and piping plover. The tern and plover are known to nest and raise young on sandbars and long sparsely vegetated beaches of Lake Sakakawea; however, no active nesting has been documented near the proposed pipeline crossing at Lake Sakakawea.</p> <p>The pallid sturgeon is the only endangered fish species with potential for aquatic habitats crossed by the Lake Sakakawea. The construction schedule Dakota Gasification has proposed for the Lake Sakakawea crossing (mid-July to late October) will avoid the spawning periods of the pallid sturgeon.</p>
8.	<b>Q.</b>	Mr. Nelson, what about cultural resource studies, were they performed for this project?
	<b>A.</b>	<p>No cultural resource studies were performed for this reconstruction project. However, Class I and Class III Cultural Resources Inventory Reports were submitted and approved by the State Historical Society when the pipeline crossing was initially installed. A copy of the Class III Cultural Resource Management Report for the Lake Crossing Area was enclosed as Attachment 1 to Dakota Gasification Company's application. This report inventoried cultural resources within the one-mile corridor on U.S. Army Corps of Engineers land in McKenzie and Williams Counties. Figure 1.1 of the Attachment showed the location of each site within the corridor. Site 32WI305 is the closest site but east of the existing pipeline and should not be impacted by any construction. Site 32MZ151 located on the south bank of Lake Sakakawea near the</p>

		pipeline is the only site which could be potentially impacted from this project. Based on a preliminary review, the ROW for the pipeline crossing will be at least 200 feet away. To ensure the site is not disturbed, the area will be marked prior to any construction activities.
9.	Q.	Mr. Nelson, are there any feasible alternative methods of delivering carbon dioxide to the EOR customers in Saskatchewan?
	A.	No, there are no other economical means of delivering carbon dioxide to our EOR customers.
10.	Q.	Mr. Nelson, when did Dakota Gasification Company last submit its Ten-Year Plan to the Commission?
	A.	Dakota Gasification Company's latest Ten-Year Plan was filed with the Commission on November 14, 2006.
11.	Q.	Was this pipeline lake crossing reconstruction included in that document?
	A.	This reconstruction project was not included in our Ten-Year Plan as we were hoping that the snow pack in the upper Missouri Basin watershed would be average, above average or sufficient such that this replacement would not be necessary. Notwithstanding, obviously our Ten-Year Plan included our existing pipeline crossing of Lake Sakakawea.
12.	Q.	Mr. Nelson, could you give a general description of the proposed corridor and route.
	A.	The proposed pipeline corridor/route is a 1.0 by 2.7 mile area and lies within both McKenzie and Williams Counties in northwestern North Dakota.
13.	Q.	Mr. Nelson, I hand you what has been marked by the hearing officer as Exhibit ___ and ask that you identify it for us.
	A.	Exhibit ___ is Dakota Gasification Company Board Policy Number 11. This Board Policy commits Dakota Gasification to compliance with federal, state and local health and safety regulations as well as establishing a strong safety and health program in order to ensure a safe and healthy work place for our employees.
14.	Q.	Likewise, I show you a document that has been marked by the hearing officer as Exhibit ___ and again ask if you could identify it?

	<b>A.</b>	Exhibit __ is Dakota Gasification Company Board Policy Number 12. In addition to committing Dakota Gasification Company to compliance with federal, state and local environmental regulations, this policy recognizes the need to maintain a healthy environment for the benefit of both our employees and the members of the community in the areas surrounding our facilities.
15.	<b>Q.</b>	Mr. Nelson, are you familiar with the factors the Commission must consider when evaluating applications for certificates of corridor compatibility and route permits?
	<b>A.</b>	Yes, the factors the Commission is to be guided by are set forth in North Dakota Century Code Section 49-22-09. These factors are set forth in the Century Code in order to aid the Commission in its evaluation and designation of sites, corridors and routes.
16.	<b>Q.</b>	Mr. Nelson, could you tell me of any available research and investigations relating to the effects of the location, construction, and operation of the proposed facility on public health and welfare, natural resources, and the environment.
	<b>A.</b>	<p>When the pipeline was initially permitted, separate Environmental Assessments (<b>EAs</b>) were prepared for the U.S. Forest Service (<b>USFS</b>) and the Bureau of Land Management (<b>BLM</b>) to address the federal lands crossed by the then-proposed route in compliance with the National Environmental Policy Act. In addition, a Section 404/10 Permit application was submitted to the U.S. Army Corps of Engineers for waters of the United States of America (e.g. Lake Sakakawea).</p> <p>The pipeline system has been studied to determine the effectiveness of pipeline safety systems including leak/rupture detection and automatic block valve closure at approximately 14 locations along the pipeline route. Safety systems are designed to mitigate the potential effects of releases from the pipeline by limiting the amount of pipeline product that can be released into the atmosphere in the event of an accidental release.</p> <p>Pipeline safety system evaluations have been conducted; this involved the determination of pipeline safety effectiveness relative to simulations of potential pipeline releases. Through the results of the accidental release simulations, Dakota Gasification Company was able to document the effectiveness of pipeline safety systems and enhance the safety of the public and workers.</p> <p>As mentioned previously, Class I and Class III Cultural Resources</p>

		<p>Inventory Reports were submitted and approved by the State Historical Society when the pipeline crossing was initially installed. There was a copy of the Class III Cultural Resource Management Report for the Lake Crossing Area attached to our application. As I mentioned, this report inventoried cultural resources within the one-mile corridor on U.S. Army Corps of Engineers land in McKenzie and Williams Counties.</p> <p>The North Dakota Natural Heritage Inventory also provided database information regarding threatened, endangered, federal candidate, and state sensitive plant species. Information related to sensitive plants and animals was also obtained from published and unpublished literature and through consultation with the U.S. Fish and Wildlife Service (<b>USFWS</b>), North Dakota Game and Fish Department, USFS, and BLM.</p>
17.	Q.	Mr. Nelson, could you describe what systems have been installed in order to minimize the adverse impacts of the operation of this pipeline system
	A.	A telemetry ( <b>SCADA</b> ) system provides 24-hour monitoring of the pipeline and compressor operations, including pressures, temperatures, and flow rates. This telemetry system enhances immediate response capability to any potential problems. The pipeline is also designed to accommodate an instrumented internal inspection device to detect and record the type and location of corrosion or other defects for long-term monitoring of the pipeline integrity.
18.	Q.	Mr. Nelson, does this project involve the beneficial use of waste energy from an energy conversion facility?
	A.	No. However, the carbon dioxide being transported in the pipeline facility is a gasification process off-gas stream that is put to beneficial use for tertiary oil recovery. It was previously used as a high volume, low-Btu fuel at the Synfuels Plant and subsequently vented to the atmosphere. Currently, the Synfuels Plant emits approximately one-half of the carbon dioxide it emitted prior to this project.
19.	Q.	Mr. Nelson, are there any adverse direct or indirect environmental effects that cannot be avoided should the proposed site or route be designated?
	A.	To the extent practicable, all effects of pipeline reconstruction will be mitigated. All lands disturbed will be returned to their current land uses. No permanent direct or indirect adverse effects are anticipated.
20.	Q.	Mr. Nelson, are there any alternatives to the proposed site, corridor, or route that minimize adverse effects?

	<b>A.</b>	As a practical matter, there are no other corridors/routes that will meet the proposed project needs.
<b>21.</b>	<b>Q.</b>	Mr. Nelson are there any irreversible and irretrievable commitments of natural resources should the proposed site, corridor, or route be designated?
	<b>A.</b>	No irreversible or irretrievable commitments of natural resources are anticipated. All areas of natural vegetation within the ROW will be reclaimed with agency-recommended seed mixtures, lake water quality issues will be mitigated with controls, and no agricultural lands will be taken permanently out of production.
<b>22.</b>	<b>Q.</b>	Mr. Nelson could you describe the direct and indirect economic impacts of the proposed facility?
	<b>A.</b>	Several direct and indirect economic impacts will result from the proposed project. The project will provide an economic benefit to Dakota Gasification Company and the Great Plains Synfuels Plant, a significant source of employment and income for North Dakota residents, and will stimulate the local economy through the spending of workers' wages and Dakota Gasification Company purchases of goods and services. The temporary influx of workers during the construction period will impact markets for temporary accommodations in the area and increase local business activity.
<b>23.</b>	<b>Q.</b>	Mr. Nelson, are you aware of any existing plans of any state or local government or any private entities for other developments at or in the vicinity of the proposed site, corridor, or route?
	<b>A.</b>	Currently, Dakota Gasification Company is not aware of any other planned developments in the vicinity of the proposed corridor and route.
<b>24.</b>	<b>Q.</b>	Is Dakota Gasification Company aware of any effects of the proposed site or route on existing scenic areas, historic sites and structures or paleontological or archaeological sites?
	<b>A.</b>	As identified in the Class III Cultural Resources Inventory attached to our application, the proposed corridor does encompass some historical sites; however, the proposed route will avoid such sites.
<b>25.</b>	<b>Q.</b>	Will there be any effects of the proposed site or route on areas that are unique because of biological wealth or because they are habitats for rare and endangered species?

	<b>A.</b>	<p>Sensitive plant and wildlife potentially affected by the project were evaluated. Information related to sensitive species was obtained from several agencies including the U.S. Fish &amp; Wildlife Services, North Dakota Game &amp; Fish Department and the U.S. Army Corps of Engineers. Sensitive species potentially present along or near the proposed route include the interior least tern and piping plover. The tern and plover are known to nest and raise young on sandbars and along the sparsely vegetated beaches of Lake Sakakawea; however, no active nesting has been documented near the proposed pipeline crossing at Lake Sakakawea.</p> <p>The pallid sturgeon is the only endangered fish species with potential for aquatic habitats crossed by the Lake Sakakawea. The construction schedule Dakota Gasification has proposed for the Lake Sakakawea crossing (mid-July to late October) will avoid the spawning periods of the pallid sturgeon.</p>
<b>26.</b>	<b>Q.</b>	Mr. Nelson, in pursuing permitting for this project have there been any issues raised by federal agencies, other state agencies or local entities?
	<b>A.</b>	No. To date, no problems have been identified or brought to our attention.
<b>27.</b>	<b>Q.</b>	What location and selection criteria were utilized for the project?
	<b>A.</b>	The location and selection criteria utilized were to essentially relocate the replacement line as close to the existing line as possible consistent with safety considerations during the construction process.
<b>28.</b>	<b>Q.</b>	Mr. Nelson, I'd now like to talk about the North Dakota Public Service Commission exclusion and avoidance criteria.
	<b>A.</b>	Exclusion and avoidance areas as defined by the NDPSC have been inventoried for the designated one-mile corridor/route and are identified on Figure 1.1 of our application. The route alignment within the corridor avoids both exclusion and avoidance areas.
<b>29.</b>	<b>Q.</b>	Starting with exclusion areas, will the proposed facility cross any designated or registered national parks, memorial parks, historic sites and landmarks, natural landmarks, monuments or wilderness areas?
	<b>A.</b>	No, none would be crossed.
<b>30.</b>	<b>Q.</b>	Would the proposed facility cross any designated or registered state parks, historic sites, monuments, historical markers, archaeological sites or nature preserves?

	<b>A.</b>	No, none would be crossed.
<b>31.</b>	<b>Q.</b>	Would the proposed facility cross any county parks or recreational areas, municipal parks or parks owned or administered by other governmental subdivisions?
	<b>A.</b>	No, none would be crossed.
<b>32.</b>	<b>Q.</b>	Would the proposed facility cross any areas that are critical to the life stages of threatened or endangered animal or plant species?
	<b>A.</b>	No, none would be crossed.
<b>33.</b>	<b>Q.</b>	Would the proposed facility cross any areas where animal or plant species that are unique or rare to this state would be irreversibly damaged?
	<b>A.</b>	No, none would be crossed.
<b>34.</b>	<b>Q.</b>	I'd now like to turn to avoidance areas. Will the proposed facility cross any designated or registered national historic districts, wildlife areas, wild, scenic or recreational rivers, wildlife refuges or grasslands?
	<b>A.</b>	No, none would be crossed.
<b>35.</b>	<b>Q.</b>	Would the proposed facility cross any designated or registered state wild, scenic or recreational rivers, game refuges, game management areas, management areas, forests, forest management lands or grasslands?
	<b>A.</b>	No, none would be crossed.
<b>36.</b>	<b>Q.</b>	Would the proposed facility cross any historical resources that are not specifically designated as exclusion or avoidance areas.
	<b>A.</b>	The Class III Cultural Resources Inventory Report identified three cultural resource sites in the proposed corridor. Site 32WI305 is the closest site but east of the existing pipeline and will not be impacted by any construction. Site 32MZ151 located on the south bank of Lake Sakakawea near the pipeline is the only site which could be potentially impacted from this project. (Figure 1.1 shows the location of each site.)
<b>37.</b>	<b>Q.</b>	Would the proposed facility cross any areas that are geologically unstable?

	<b>A.</b>	No, none would be crossed.
<b>38.</b>	<b>Q.</b>	Would the proposed facility cross any areas within 500 feet of a farmhouse, rural residence, or place of business?
	<b>A.</b>	No, none would be crossed.
<b>39.</b>	<b>Q.</b>	Would the proposed facility cross any reservoirs or municipal water supplies?
	<b>A.</b>	Yes, Lake Sakakawea is an avoidance area DGC proposes to cross.
<b>40.</b>	<b>Q.</b>	Would the proposed facility cross any water sources for organized rural water districts.
	<b>A.</b>	No, none would be crossed.
<b>41.</b>	<b>Q.</b>	Would the proposed facility cross any irrigated land?
	<b>A.</b>	No, none would be crossed.
<b>42.</b>	<b>Q.</b>	Would the proposed facility cross any areas of recreational significance that are not designated as exclusion areas?
	<b>A.</b>	Yes, Dakota Gasification Company proposes to cross Lake Sakakawea, an avoidance area.
<b>43.</b>	<b>Q.</b>	I would now like to discuss several resources which are specifically identified in the NDPSC selection criteria and to the extent they are crossed, what steps Dakota Gasification Company proposes to take to minimize such impacts. Would the proposed facility cross any agricultural production or the agricultural quality of the cropland?
	<b>A.</b>	No, none would be crossed.
<b>44.</b>	<b>Q.</b>	Would the proposed facility cross any family farms, ranches or rural residences?
	<b>A.</b>	No, the proposed facility would not come within 1,000 feet of such a farm, ranch or rural residence.
<b>45.</b>	<b>Q.</b>	Would the proposed facility cross any land suitable to irrigation?
	<b>A.</b>	No, none would be crossed.
<b>46.</b>	<b>Q.</b>	How will surface drainage and groundwater flow patterns be

		addressed?
	<b>A.</b>	Berms will be constructed on slopes to control runoff and minimize erosion. Staging areas will be located a minimum of 50 feet from shoreline with hazardous storage sites and equipment refueling sites at least 100 feet from shoreline, thereby minimizing the potential for impacts to surface drainage flow.
<b>47.</b>	<b>Q.</b>	Would the proposed facility affect any noise-sensitive land uses?
	<b>A.</b>	There are no noise sensitive land uses in the area.
<b>48.</b>	<b>Q.</b>	Would the proposed facility have any visual effect on adjacent areas?
	<b>A.</b>	No, all lands disturbed by the proposed facility would be reclaimed and placed back to original land use.
<b>49.</b>	<b>Q.</b>	Would the proposed facility impact any extractive or storage resources?
	<b>A.</b>	No extractive or storage resources would be impacted.
<b>50.</b>	<b>Q.</b>	Would the proposed facility impact any wetlands, woodlands or wooded areas?
	<b>A.</b>	Contrary to what we stated in our application, a few trees will be removed at the high water mark of the lake.
<b>51.</b>	<b>Q.</b>	Would the proposed facility impact communication facilities?
	<b>A.</b>	Given that the proposed facility is an underground pipeline, it should have no impacts on either communication transmission or reception.
<b>52.</b>	<b>Q.</b>	Would the proposed facility have any impact on human health and safety?
	<b>A.</b>	All pipeline construction will be in strict conformance with U.S. Department of Transportation Pipeline Safety Regulations (CFR Title 49 Part 195). A telemetry system and internal inspection device is used to monitor the integrity of the pipeline and enhance response time to the pipeline in the event of an emergency. Water used for hydrostatic testing of the new pipeline will be chemical free and will be properly disposed of after testing has been completed.  In the unlikely event of an accidental release from the pipeline, carbon dioxide and small amounts of other minor constituents including H <sub>2</sub> S will be released into the atmosphere. In the event of a pipeline rupture,

block valves are used to isolate the affected section of pipe and thus limit the amount of product released. Leaks are more difficult to detect and product could potentially be released over a longer period of time without detection.

In order to predict the possible human health consequences that could potentially result from pipeline ruptures or leaks, Dakota Gasification Company conducted a worst-case modeling exercise to determine the extent of the area in the vicinity of the pipeline that might be affected by ruptures or leaks. The modeling research results are summarized below.

The modeling results indicate that a catastrophic failure resulting in a hole as large as the pipeline itself presents the worst-case scenario in terms of highest concentrations of carbon dioxide or H<sub>2</sub>S at the greatest distances. A full pipe diameter rupture could potentially produce concentrations of carbon dioxide considered to be immediately dangerous to life and health (IDLH) at a distance of 760 feet. Assuming that H<sub>2</sub>S is approximately 0.89 mol percent of the pipeline product, a full diameter failure of the pipeline could potentially cause H<sub>2</sub>S concentrations to be considered an IDLH at a distance of 1,940 feet from the rupture.

A statistical analysis was performed to assess the risks to an individual from accidental release of carbon dioxide and H<sub>2</sub>S at certain locations or receptors identified along the pipeline route. Carbon dioxide and H<sub>2</sub>S total impact probabilities at receptors were estimated using data on the likelihood that an accident will occur anywhere along the pipeline, meteorological conditions, and the chance that an accident will be located within the predicted maximum threshold impact distance from a receptor. Only the H<sub>2</sub>S 30-minute IDLH concentration of 100 ppm was predicted to reach a receptor, and the predicted probability of impact was 1 in 44,000. The probability of impact for the other thresholds did not exist since the threshold concentrations were not predicted to be observed at any receptors.

The total impact probabilities determined in this report only assess the probability of an impact at the receptor indicated. Variables such as the population density and frequency of visits at these receptors have not been included in these calculations since the distribution of these variables is unknown. Implicit in the impact probabilities is a population of 1.0 person-years (e.g. one person at the receptor for every minute during the year). Therefore, the actual carbon dioxide and H<sub>2</sub>S exposure risks may be overstated for remote areas where population densities are low and receptor occupancy is not full-time. Conversely, the risks may be understated for receptors with high population

		<p>densities and/or relatively long residence periods.</p> <p>Dakota Gasification Company has developed an Emergency Response Plan. The Plan addresses an accidental release of the operating pipeline and outlines pre-emergency planning and education, operational safety precautions, emergency response procedures, and associated agency coordination. Dakota Gasification Company has distributed information regarding emergency preparedness and response to appropriate local agencies and the public residing adjacent to the proposed facility.</p>
53.	Q.	Would the proposed facility have any impact on animal health and safety?
	A.	Impacts to animal health and safety will be minimized through sound construction and operation practices. Surface water, typically utilized by animals, will be protected from contamination by locating staging areas a minimum of 50 feet from stream banks and hazardous substance storage areas and refueling sites a minimum of 100 feet from stream banks.
54.	Q.	Would the proposed facility have any impact on plant life?
	A.	Impacts to plant life are limited to the disturbed portions of the ROW.
55.	Q.	Let's turn to policy considerations. Pursuant to subsection 4 of NDAC Section 69-06-08, the NDPSD may give preference to an applicant that will maximize benefits that result from the adoption of certain policies and practices. Has Dakota Gasification Company adopted any of these policies and practices?
	A.	Dakota Gasification Company plans to apply some of these policies and practices to the proposed project, and Dakota Gasification Company has incorporated them where possible (e.g., utilization of existing and proposed ROWs and potential future commitment of a portion of the transmitted product for use in North Dakota).
56.	Q.	How about the location and design?
	A.	<p>The line will be located 100 feet to the west of the existing line and have a minimum cover in the lake bed of six feet. The length of replacement line will be approximately 11,400 feet and will be tied into the existing line with four 45° elbows at the locations shown in Figure 1.1 in our application.</p> <p>The pipe size, material, and thickness will be the same as the current</p>

		lake crossing, 0.500-inch wall bevel end 14-inches API <sup>5</sup> SL Gr. X65 seamless pipe. All pipe and field joints will be coated with fusion bonded epoxy (16 mils), and abrasion resistant epoxy (44 mils), and a two-inch concrete jacket weight coating. Field welds will be 100 percent radiographed. The pipeline will be hydrostatically tested in accordance with applicable regulations to establish the maximum allowable operating pressure of 2,700 psig. As mentioned in Mr. Weir's testimony, contrary to our application, testing will be conducted for a minimum of eight hours and will include a leak test.
57.	Q.	What about the training and utilization of available labor in North Dakota for the general and specialized skills required;
	A.	Dakota Gasification Company has a longstanding commitment to North Dakota's people and economy, providing continuous employment for managerial, technical, and operating staff. We employ a substantial number of North Dakota natives. For this project, we are utilizing North Dakota staff for project management and technical support. Dakota Gasification Company will solicit bids from North Dakota-based companies for equipment and services whenever possible.
58.	Q.	What steps has Dakota Gasification Company taken to minimize the cost of construction and maximize the economics of the operation of the proposed facility?
	A.	Dakota Gasification Company has attempted to minimize the cost by installing the new line as close to the existing line as possible and reducing the downtime for the carbon dioxide pipeline when the tie-ins are made.
59.	Q.	Have any citizen coordinating committees been consulted?
	A.	No citizen coordinating committees were consulted as none were believed appropriate for this type of pipeline project.
60.	Q.	Has Dakota Gasification Company committed of a portion of the carbon dioxide for use in this state?
	A.	No, Dakota Gasification Company's present customers are located in Saskatchewan. However, the pipeline is installed with fittings (mainline valves) which would allow for the construction of lateral pipelines to serve potential future customers in North Dakota.
61.	Q.	Are there any labor relations issues?
	A.	There should not be. Installation of the pipeline will be performed by

		companies contracted for the project. Dakota Gasification Company requires that these companies comply with all appropriate federal, state, and local laws.
62.	Q.	Will Dakota Gasification Company be monitoring impacts of the proposed facility?
	A.	During construction, Dakota Gasification Company will provide silt control/monitoring in the lake and after construction it will monitor re-vegetation.
63.	Q.	Will Dakota Gasification Company utilize any existing ROW and corridors/
	A.	The proposed pipeline parallels the existing pipeline and ROW.
64.	Q.	Does the proposed facility involve any other existing or proposed transmission facilities?
	A.	No.
65.	Q.	What design and construction limitations will Dakota Gasification Company need to address?
	A.	The primary design and construction limitations considered are to provide a minimum of six feet of cover over the new pipeline and to minimize impact to the lake and the adjacent shore land.
66.	Q.	What about economic considerations?
	A.	Dakota Gasification Company is committed to constructing the proposed pipeline as economically as possible while strictly adhering to the Public Service Commission's criteria. The anticipated construction cost for installation of the proposed facility is \$10.5 million.
67.	Q.	Mr. Nelson, can you describe the general mitigation measures and ROW preparation, construction, and reclamation procedures that will be undertaken by Dakota Gasification Company?
	A.	Surveys for the interior least tern and piping plover are conducted annually by the COE. Based on discussions with the COE and USFWS, no nests have been recorded near the proposed route. If agency surveys indicate that active nests are present near (within 0.25 miles) the route, potential mitigation measures will be evaluated in coordination with the COE and USFWS.

		<p>Pipeline construction across Lake Sakakawea will be completed during the period from early July to late October. This construction schedule will avoid spawning and migration periods of sensitive fish species (e.g., pallid sturgeon).</p> <p>The staging area right-of-way (<b>ROW</b>) will be cleared of obstructions and graded where necessary to permit construction equipment to operate safely. The extent of clearing and surface preparation will be restricted to the ROW and to the minimum area necessary for construction. Landowner easement provisions will be adhered to.</p> <p>Shrubs will be removed from the ROW. The root systems of woody plants on the spoil side of the ROW will be preserved where possible. Where shrubs are large enough to interfere with construction equipment, additional clearing may be necessary. Cleared vegetative material may be chipped and spread over disturbed areas to serve as mulch, burned where permitted, placed in piles for wildlife habitat, or removed to disposal areas as specified by agencies with jurisdiction.</p> <p>Trees will be cut and removed from the ROW, staging, or work areas and salvaged or disposed of according to landowner or agency requirements. Trees will be felled parallel to and within the construction ROW.</p>
68.	Q.	Could you describe the clearing and site preparation?
	A.	<p>In some areas, cutting and filling may be necessary to permit safe construction activities. Cuts and fills will be limited to that necessary for trenching operations.</p> <p>Topsoil will be preserved to the extent practical. Subsoil materials from cuts will be stockpiled for recontouring upon completion of trenching operations. Excess material will be shaped to blend with adjoining lands and to provide a landform suitable for revegetation.</p>
69.	Q.	What about trenching?
	A.	<p>Trenching on land will be completed with a backhoe. Where standard ditching is performed, the ditch spoil will be placed in one windrow. Where double ditching is required, the topsoil will be excavated and placed in a windrow separate from the ditch subsoil. Mixing of topsoil with subsoil will be prevented by stripping topsoil from either the full work area or from the trench and subsoil storage area (ditch plus spoil side method).</p> <p>All land trench areas will be restored to original contours.</p>

70.	Q.	And backfilling?
	A.	<p>After the pipe has been lowered into the trench and its position inspected and approved, the trench will be backfilled. With standard backfilling, the windrow of spoil material will be returned to the trench with a crown of soil, normally 12 inches, which compensates for settlement. Excess spoil will be spread in a thin layer over the ROW.</p> <p>Where topsoil is segregated, the windrow of subsurface soil will be returned to the trench leaving sufficient space for the return of the topsoil windrow.</p>
71.	Q.	How will temporary access roads be handled?
	A.	<p>Access to the ROW will normally be from existing public roads. Where public roads do not provide sufficient access to the ROW, temporary access roads may be required. No new permanent access roads will be required. The Contractor will be responsible for obtaining permission for utilizing private roads and trails. Upgrading existing trails or constructing new temporary access roads, if required, will be in accordance with the following guidelines: Temporary roads will be located where possible to avoid erosion prone areas, drainages, areas of woody cover, wetlands, or other sensitive areas and are subject to approval by Dakota Gasification Company and the landowner, or appropriate agency. Temporary roads will be designed with culverts properly located to minimize erosion and sedimentation dust will be controlled, where required, by a suitable water sprinkling program or surfacing with dust-free materials.</p>
72.	Q.	How will the lake crossing construction be prosecuted?
	A.	<p>As Mr. Weir testified, contrary to our application, the "controlled depth tow" method of construction will be used where pipe sections are welded on-shore and pulled into place. Heavy equipment to be used in the excavation activities for the lake crossing will consist of barge-mounted dragline, tow boat, anchor/fuel barge, and a hydrographic survey boat. Other equipment will consist of that needed to transport, offload, position, and handle pipe, including welding machines, bulldozers, track hoes, motor graders, and miscellaneous service vehicles. Fuel will be provided in support vehicles designed for safety and for pollution control. Fuel reserves, other than that contained in the service vehicles, will not be stored on-site.</p> <p>The trench will be excavated to provide six feet of cover in the lake bottom. Centerline alignment of the trench will be maintained using a shore-based laser, while range positions will be monitored using a</p>

		<p>shore-based electronic measuring device. The trench depth will be checked using hydrographic surveying equipment. During excavation, 200 feet of silt curtain will be placed on each side of the excavation/soil storage area to mitigate the movement of silt. The materials to be excavated will comprised of about 78,000 yards, based on a four-foot wide trench bottom, 2.5:1 side slope, eight-foot trench depth, and a length of 11,000 feet. The material will be placed on the west side of the excavation. Once the pipes are in place on the trench bottom, excavated material will be returned to the trench in "plugs" spaced approximately 250 feet apart. The plugs are for the purpose of fixing the pipes in proper orientation and to prevent movement or displacement during subsequent backfilling operations. The trench will then be backfilled using the excavated spoil material. Once the new line is backfilled, the abandoned portion of the pipeline (11,400 feet) will be pulled from the lake with the use of a 100-ton winch.</p> <p>Bank erosion control measures will be implemented at both shorelines to prevent exposure of the pipes to damage and to prevent loss of material shoreline. The control measures will be implemented in the shoreline interval beginning at the water level at the time of construction and continuing to existing riprap. As required by the U.S. Department of Transportation, Office of Pipeline Safety, and in keeping with good industry practices, Dakota Gasification Company will maintain the lake banks at the pipe crossing and augment the erosion control measures if erosion occurs.</p>
73.	Q.	<p><b>Q:</b> Could you describe Dakota Gasification Company's erosion and sedimentation control measures.</p>
	A.	<p><b>A:</b> Temporary erosion and sedimentation controls will be installed immediately after initial disturbance of the soil. They will be properly maintained on a daily basis throughout construction and reinstalled as necessary until replaced by permanent erosion controls or restoration is complete. Where appropriate, slope breakers will be installed to reduce runoff velocity and divert water off the construction ROW. These will be constructed of soil, silt fence, staked hay or straw bales, or sandbags depending on site conditions. The type and spacing will be determined based on slope, soil erodibility, ground cover, expected runoff, and capacity requirements. Sediment barriers will be used to stop or reduce the flow of sediment. These will be constructed of materials such as silt fence, staked hay or straw bales, or sandbags. Water body sediment barriers will be installed immediately after initial disturbance of the waterbody or adjacent upland. These will be installed along the edge of the construction ROW as necessary to contain spoil and sediment within the ROW. These sediment barriers will be removed during ROW cleanup. Mulch will be applied to stabilize</p>

		the soil surface; it will consist of straw, hay, erosion control fabric, or some functional equivalent. Mulch will be applied before seeding if restoration activity is interrupted for extended periods, such as when seeding cannot be completed due to seeding period restrictions.
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## **LIST OF EXHIBITS**

DGC Board Policy No. 11

DGC Board Policy No. 12

ADOPTED:  
LAST REVISION:

05-10-89



BOARD POLICY 11

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## 11 – GENERAL SAFETY AND HEALTH

It is the policy of Dakota Gasification Company to comply with all federal, state and local safety and health standards. A strong safety and health program will be implemented to ensure that safe and healthful work places are provided to all employees, that safe work practices are employed, and necessary resources be committed to the program.

This policy will be implemented at all facilities and work sites and include all employees.

ADOPTED:  
LAST REVISION:

05-10-89



BOARD POLICY 12

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## 12 – ENVIRONMENTAL COMMITMENT & COMPLIANCE

It is the policy of Dakota Gasification Company to maintain compliance with all federal, state and local environmental legislation and regulations. The Company recognizes the need to maintain a healthy environment for all employees and for citizens in the surrounding areas and commits its support to management in the pursuit of that need.

**ADOPTED:**  
**LAST REVISION:**

**05-10-89**



**BOARD POLICY 12**

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