BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF SOUTH DAKOTA

IN THE MATTER OF THE APPLICATION OF DAKOTA ACCESS, LLC FOR AN ENERGY FACILITY PERMIT TO CONSTRUCT THE DAKOTA ACCESS PIPELINE PROJECT	))))))	HP14-002

REBUTTAL TESTIMONY OF

STACEY GERARD

ON BEHALF OF

DAKOTA ACCESS, LLC

DAKOTA ACCESS EXHIBIT #___

August 14, 2015

Q. Please state your name, present position and business address.

A. My name is Stacey Gerard.

Q. What is your professional background?

A. I previously served as the Assistant Administrator and Chief Safety Officer, U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) and before that, the Associate Administrator for Pipeline Safety.

PHMSA is the federal agency which works in partnership with states to oversee the safety of oil and gas pipelines and all hazardous materials in transportation. I was the senior career safety official. In that capacity I was responsible for all pipeline and hazardous materials safety regulatory matters and response to incidents of national significance. I was accountable to the Secretary of Transportation for meeting all statutory mandates and recommendations of the National Transportation Safety Board (NTSB), the General Accountability Office (GAO) and the Department Inspector General (IG). I set the regulatory agenda and made decisions about where to set safety standards. I also determined: the extent to which to prosecute companies which violated pipeline safety regulations, how to respond to and investigate accidents, how to prioritize the research agenda, training requirements, and overall strategic plan for the federal and state pipeline safety program. I served in an executive capacity from 1997 to 2008.

More recently I served as a public safety expert on the American Petroleum Institute team developing the Safety Management System Standard for pipelines, as recommended by the National Transportation Safety Board.

Currently, I work independently and have also served as a senior fellow with the Blacksmith Group of Houston, Texas. I conduct safety and operational audits of pipeline

companies, make recommendations for organizational improvements with emphasis on leadership, risk management, training, emergency response and safety.

Q. Have you previously submitted or prepared testimony in this proceeding in South Dakota?

A. No.

Q. What is the purpose of your testimony?

A. I will testify regarding pipeline oversight. Specifically, my testimony focuses on how the government oversees industry operations for positive safety and environmental outcomes. My testimony is in response, or to rebut, direct testimony filed by various interveners and expert witness, Brian Topp.

Q. Did you read testimony in preparation for your written rebuttal?

A. Yes.

Q. What fact witness, or intervener, testimony did you read?

A. I read testimony submitted by the following individuals: Corliss Faye Wiebers, Delores Assid, Devona Smith, Janice Elaine Petterson, Kevin John Schoffelman, Linda Ann Goulet, Margaret Hilt, Marilyn Murray, Matthew Anderson, Mavis Parry, Nancy Stofferhan, Peggy Hoogestraat, Rod and Joy Hohn, Ron Stofferhan, Shirley Oltmanns, Tom Stofferhan, Ruth Arends, Allen Arends, Lorrie Bacon and Sherrie Fines, Orrin Geide, Kent Moeckly, Sue Sibson and Laurie Kunzelman and the testimony of the applicant's witnesses.

My testimony is intended to address the concerns raised by individual interveners and clarify the role that PHMSA plays in the pipeline industry.

Q. What is PHMSA and what does it do?

A. Pipeline and Hazardous Materials Safety Administration is known as PHMSA. PHMSA is the federal agency which works in partnership with states to oversee the safety of oil and gas pipelines and all hazardous materials in transportation. PHMSA's pipeline safety program accomplishes its mission by identifying problems, setting the bar on where safety should be in regulation, educating and enforcing safety and environmental regulations. It conducts risk assessments, performs data analyses, conducts safety inspections and investigations, and makes grants to support state pipeline safety programs, outreach, training and research to advance technology.

PHMSA and its regulated community have reduced the number of pipeline incidents with death or major injury to below 40 since 2010, which is lower than the ten year average. The long term trend is an average decline of ten percent every three years. The safety performance of the oil pipeline industry has improved in the last 14 years. Pipelines transport over 14 billion barrels of crude oil, gasoline, diesel and jet fuel across our nation with more than 99.99 percent of those barrels reaching their destination safely. In the past decade, the risk of hazardous liquid spills with environmental consequence has declined by an average of five percent per year. All major causes of liquid petroleum spills were reduced in that same time frame, including corrosion, third party excavation and pipe material, seams and welds. Even age related threats can be managed effectively. The challenge remains to eliminate the lower probability/ high consequence incidents.

Q. Are you aware of South Dakota's history of hazardous liquid and natural gas pipeline incidents? If so, please provide detail.

A. I am aware. South Dakota experience reflects seven hazardous liquid and natural gas pipeline incidents between 2003 and 2014. Three of those incidents involved hazardous

liquid pipelines. Of the seven total incidents, three were excavation related, three were material/weld/or equipment related and one was corrosion related. Reports indicate no death or injury, less than 700 gross barrels and a net of 89 barrels lost, and property damage totaling $2 million from the seven events.

Q. How does the pipeline safety record compare to other modes of transportation for petroleum liquids?

A. U. S. Department of Transportation statistics show that pipelines have a better safety record than other modes of transportation for petroleum liquids.

Q. How does the age of the pipeline affect its safety?

A. As stated by the past chairman of the National Transportation Safety Board, Deborah Hersman, Janauary, 2013, "If a pipeline is adequately maintained and inspected properly, its age is not the critical factor. The condition of the pipe is the critical factor." In other words, I do not believe an aging pipeline is automatically a dangerous pipeline. The availability of new technology in the design, construction, operation and maintenance of this pipeline is significant, however, and I will address that later in my testimony.

Q. What does government do to influence or affect the maintenance of pipeline to assure their safety?

A. As much as I would like to say that it is in industry's interest to maintain its assets in good condition, the healthy tension of the regulator- regulatee relationship is a significant contributor to improved safety performance.

PHMSA has over 139 federal inspection and enforcement staff along with over 300 state inspectors. These folks are responsible for regulating nearly 3,000 companies that

operate 2.6 million miles of pipelines, 118 liquefied natural gas plants, and 6,970 hazardous liquid breakout tanks. The work of the inspectors has proven successful. PHMSA states in its budget that through its oversight programs, serious pipeline incidents have decreased by 37% since 2009.

PHMSA pipeline safety personnel report spending 60 percent of their time on inspections and investigations, of which 16 percent is spent inspecting the construction of new pipeline facilities. The balance is spent communicating with stakeholders, especially on excavation damage prevention and land use planning; working to continuously improve inspection methodologies and business processes and training.

While PHMSA serves as the federal pipeline safety regulator, pipeline operators must know, understand, and manage the risks associated with their own pipeline facilities. In addition to PHMSA inspections, operators frequently conduct internal reviews of their procedures, facilities, staff and emergency procedures. A recently published API Recommended Practice 1173 is expected to strengthen operators' required focus on safety assurance through their conduct of independent auditing and evaluation.

Q. Where do federal regulations fit into the analysis?

A. Pipeline safety regulations that establish minimum federal safety standards are a critical element of the safety analysis. Ensuring compliance involves regular inspections of pipeline operator programs and facilities and, when compliance violations are identified, the application of appropriate administrative, civil, or criminal remedies. Federal and state pipeline inspectors conduct these compliance inspections and also conduct accident investigations and respond to public complaints concerning

pipeline operations.

Pipeline safety regulations were originally established in the early 1970s and were based primarily on industry consensus standards in effect at the time. The regulations have been updated throughout the years with the addition of several significant new regulatory programs, including the Oil Spill Response Program, the Integrity Management Program, Operator Qualification Program and Control Room Management. As these took effect, OPS implemented an inspection program for each specific new regulatory program. Standard inspections are conducted to review operator compliance with the pipeline safety regulations originally put in place in the early 1970s. Both gas and hazardous liquid pipeline safety regulations include requirements for an operator to safely operate and maintain its pipeline systems. Inspectors review the operator's documented processes, procedures and records, they observe operator employees performing work in accordance with the operators processes and procedures, and check operating records to ensure the operator's pipeline systems are operated at or below the maximum parameters allowed by regulations. They also examine the operator's emergency procedures to determine if the operator is prepared to respond promptly and effectively if an abnormal condition or pipeline failure occurs.

In 2008, Office of Pipeline Safety (OPS) began pilot testing an integrated inspection process. By using data and information about a specific operator and pipeline system, an inspector can custom-build a list of regulatory requirements to be evaluated during an inspection. This data-driven process allows OPS to focus inspection resources on the regulatory provisions addressing the greatest identified risks. OPS maintains the ability to conduct the program-based inspections listed below, and has been conducting an

increasing number of integrated inspections since 2008. State partners may choose to conduct integrated inspections or continue with the program-based inspections.

Q. What is an oil spill response plan?

A. The Oil Pollution Act of 1990 requires the preparation of spill response plans by operators that store, handle, or transport oil to minimize the environmental impact of oil spills and to improve public and private sector response. DAPL has provided testimony that they have in fact already drafted the required plan. PHMSA reviews response plans submitted by operators of onshore oil pipelines to ensure the plans comply with PHMSA regulations. These plans also must be regularly updated by the operator and submitted for subsequent review by PHMSA. PHMSA also seeks to improve oil spill preparedness and response through data analysis, spill monitoring, mapping pipelines in areas unusually sensitive to environmental damage, and advanced technologies to detect and prevent leaks from hazardous liquid pipelines.

Q. Will Dakota Access be required to prepare and submit such a plan to PHMSA?

A. Yes.

Q. Does the Oil Pollution Act (OPA) provide any funding to help relieve some of the financial cost of an oil pipeline spill? Some landowners have expressed concern about the lack of South Dakota funding for such an eventuality.

A. Yes. In August 1990, the Oil Pollution Act was signed into law and authorized the use of the Oil Spill Liability Trust Fund. It consolidated the liability and compensation requirements of certain prior federal oil pollution laws. With the consolidation of these funds and the collection of a tax on the petroleum industry, the funding level was $1 billion. Fund uses include removal costs incurred by the U.S. Guard and the EPA in

response to an oil spill, state access for removal activities, payments to federal, state and Indian tribe trustees to conduct natural resource damage assessments and restorations, payment for claims for uncompensated removal costs and damages, and other specific appropriations like PHMSA's review and approval of the DAPL response plan. The OPA defines the conditions under which costs and damages may be recovered. Claim types include natural resources damages, removal costs, property damage, loss of profits and earning capacity, loss of subsistence use of natural resources, loss of government revenue, increased public services, and other claims.

Q. What are the various types of inspections that PHMSA will perform on the Dakota Access pipeline?

A. The following inspections will be performed: Standard Inspections, Integrity Management Program Inspections, Operator Qualification Inspections, Control Room Management Inspections, New Construction Inspections and review and approval of the oil spill response plan. There could be other forms of inspections as well.

Q. What is an Integrity Management Program (IMP) Inspection?

A. The goals of the IMP program are to improve pipeline safety through accelerating the integrity assessment of pipelines in High Consequence Areas, improving integrity management systems within companies, improving the government's role in reviewing the adequacy of integrity programs and plans, and providing increased public assurance in pipeline safety.

The initial integrity management rule for hazardous liquid pipelines applied to operators with more than 500 miles of pipeline. It became effective May 29, 2001. A rule change effective February 15, 2002, made the rule applicable to owners of all hazardous liquid

pipelines.

In the context of pipeline operations, the term "integrity" means that a pipeline system is of sound and unimpaired condition and can safely carry out its function under the conditions and parameters for which it was designed. "integrity management" (IM) encompasses the many activities pipeline operators must undertake to ensure the integrity of their pipeline systems. The IM regulations are tailored to each pipeline system type. Inspections of IM programs generally verify that an operator uses all available information about its pipeline system to assess risks and take appropriate action to mitigate those risks. Inspections include reviewing the written IM program and associated records.

The Liquid IM Rule specifies how pipeline operators must identify, prioritize, assess, evaluate, repair and validate the integrity of hazardous liquid pipelines that could, in the event of a leak or failure, affect High Consequence Areas (HCAs) within the United States. HCAs include: population areas; areas containing drinking water and ecological resources that are unusually sensitive to environmental damage; and commercially navigable waterways.

Key features include providing enhanced protection for HCAs which have been mapped by PHMSA and made available to industry. Hazardous liquid pipeline operators must develop a written IM Program. Within this plan, an operator must specify by what methods it can demonstrate condition and provide a schedule for assessment of each segment, and explain risk factors used in scheduling the assessments. An operator's IM Program must include a process for continual integrity assessment and evaluation, an analytical process that integrates all available information about pipeline integrity and the

consequences of a failure, repair criteria to address issues identified by the integrity assessment method and data analysis, a process to identify and evaluate preventive and mitigative measures to protect HCAs, methods to measure the integrity management program's effectiveness, and a process for review of integrity assessment results and data analysis by a qualified individual. An operator must perform periodic integrity assessments (i.e., continual integrity evaluation and assessment) on line segments that could affect HCAs at intervals not to exceed 5 years. The rule requires that certain defects identified through internal inspection be repaired within defined time limits. In evaluating the integrity of the line, the operator must integrate all available information, including information about the potential impacts of a release on drinking water intakes and other sensitive areas.

Operators must conduct risk analyses for the line segments that could affect HCAs. These analyses should identify and evaluate the need for additional preventive and mitigative actions to protect drinking water. Operators must explicitly evaluate the need for emergency flow restricting devices and enhancements to leak detection systems to protect HCAs.

Q. How are the preventative and mitigative measures relevant to the concerns of South Dakota landowners?

A. I understand that landowners have concern about leaks into water and the watershed area. The IM rule is designed to bring more protection to drinking water and environmentally sensitive areas. PHMSA requires the DAPL operator to consider how its pipeline can affect these areas – not just whether these areas are crossed, but if they could be affected in the event of a leak or failure, considering terrain and weather. This is a high standard

to consider.

First, operators are required to have a means of detecting leaks and they must evaluate and consider if the means is adequate to protect the high consequence areas. The evaluation must include the length and size of the pipeline, the product carried, the proximity to the high consequence area, the swiftness of the leak detection, location of nearest response personnel, and risk assessment results. There are many ways an operator may detect leaks. DAPL has provided testimony that within their control system, they will use a form of computational pipeline monitoring that must comply with PHMSA standards. The standard speaks to design, operation and maintenance, including instrumentation, alarms, controller response, analysis, testing, training, control limits, how data is displayed and presented and the man-machine interface and relationship. Other PHMSA regulations on control room management go even further to address factors like fatigue. The computational pipeline monitoring is more advanced leak detection that those used in many older liquid pipeline systems.

The IM program also requires devices operators must use to limit the amount of product released in the event of a leak or rupture. This device could be a check valve or a remotely controlled valve. DAPL has provided testimony that in the 274.65 miles of proposed pipeline in South Dakota, their design calls for 40 main line valve which can be remotely activated and locally activated. They IM rule requires the evaluation of right of way information about the population and the environment in the consideration of placement of these valves including terrain surrounding the segment, drainage systems such as small streams and other small waterways that could act as a conduit to high consequence areas, elevation profile, possibility of a spillage in a farm field following the

drain tiles into a waterway, and ditches alongside a roadway the pipeline crosses, among other factors. DAPL testimony states that the design for placement of the 40 valves was based on the PHMSA requirements for protection of high consequence area locations.

Q. Will Dakota Access be required to submit an IM Plan for Inspection?

A. Yes.

Q. What are Operator Qualification (OQ) Inspections?

A. In 2001, pipeline safety regulations were revised to require pipeline operators to document the training and qualifications of their employees. Operators are required to prepare a written operator qualification program that identifies employee positions that perform safety-sensitive operation or maintenance tasks. Employees in these positions must be trained and tested to ensure they have the necessary knowledge, skills and abilities to perform each task, as well as to recognize and react to emergencies that may arise while performing those tasks.

PHMSA and state inspections verify that operators have created acceptable OQ programs and identified all safety-sensitive employee positions. Inspectors also review records to verify that employees in these positions have been trained and tested. Operator employees performing operations and maintenance tasks are observed to ensure the tasks are completed in accordance with the operator's program.

Q. Will Dakota Access be subject to Operator Qualification Inspections?

A. Yes.

Q. What are Control Room Management (CRM) Inspections?

A. PHMSA amended the pipeline safety regulations to prescribe safety requirements for controllers, control rooms, and SCADA systems used to remotely monitor and control

pipeline operations. The regulations address human factors engineering and management solutions for the purpose of enhancing the performance reliability of operator personnel that control pipeline operations. This rule will generate significant public benefits by reducing the number and consequences of shortfalls in control room management practices and operator errors when remotely monitoring and controlling pipelines and responding to abnormal and emergency conditions. By improving control room management, it is expected that leaks or abnormal events can be identified and responded to at the soonest possible time, hopefully mitigating the consequences to a minimum event. For this critical new regulation that addresses human factors and human operational performance, the inspection guide for federal and state inspectors performing CRM inspections is 55 pages.

Q. Will Dakota Access be subject to Control Room Management Inspections?

A. Yes.

Q. What are New Construction Inspections?

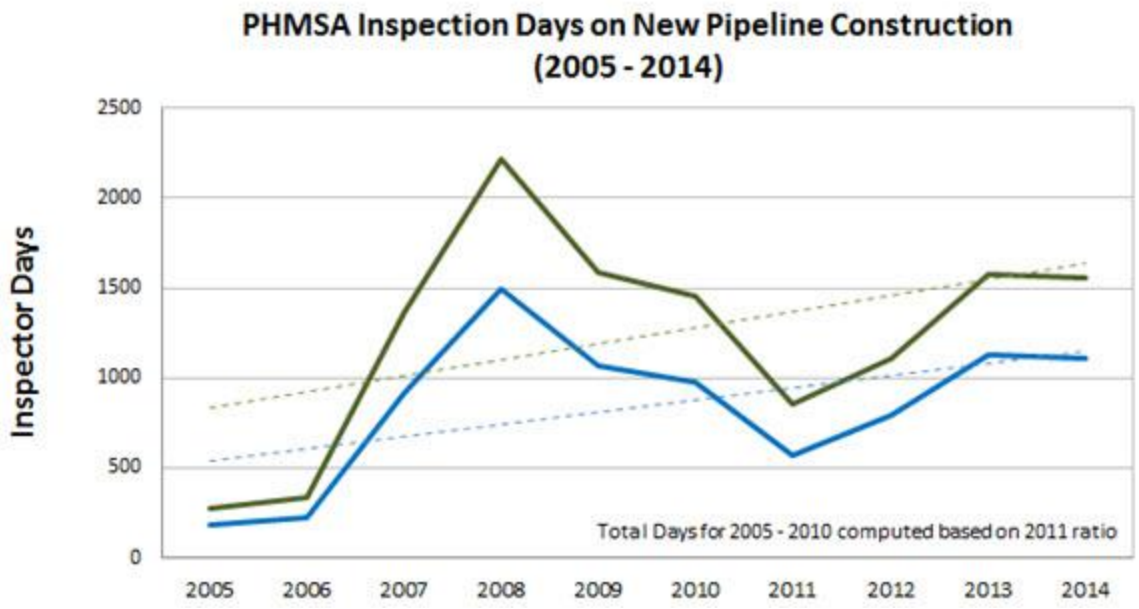
A. PHMSA's responsibility in pipeline construction is assuring that the pipeline will operate safely once it is placed in service. PHMSA has established regulations governing aspects of pipeline design and construction and conducts inspections of pipelines under construction in order to fulfill this responsibility.

Requirements related to pipeline design and construction are in Chapter 49 of the Code of Federal Regulations (CFR). 49 CFR Part 195 established requirements for hazardous liquid pipelines. Design requirements address such issues as the required strength of pipe for certain applications and the design of components that will be attached to the pipeline. Requirements specifically addressing construction issues include how welding must be

performed, limitations on pipe bending, installing pipe in the ditch, and the required depth of burial.

PHMSA inspects pipeline construction to assure compliance with these requirements. Inspectors review operator-prepared construction procedures to verify that they conform to regulatory requirements. Inspectors then observe construction activities in the field to assure that they are conducted in accordance with the procedures.

There has been a significant jump in the amount of pipeline under construction in the past few years. PHMSA has responded to this increase by devoting more of its inspector's time to performing construction inspections. The graph below shows the number of inspector-days per year devoted to inspecting pipeline construction.



		2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	Total Days	277	333	1364	2221	1585	1450	853	1109	1581	1554
	Days AFO*	186	224	916	1492	1065	974	573	790	1127	1107

* Away from office

Data as of 02/26/2015

Since 2007, the pipeline industry has experienced unparalleled growth driven by the need to satisfy the Nation's energy demand and bring new sources of supply to the market. As a result, PHMSA has stepped up the number of new pipeline construction inspections performed each year. Through new construction inspections performed during the 2008 through 2010 pipeline construction seasons, PHMSA inspectors discovered issues requiring immediate operator remediation prior to the pipeline being placed in service or requiring pressure reduction to assure pipeline integrity. Issues discovered during PHMSA inspections have included poor quality control and procedures for welding,

coating, fittings, hot bends, and pipe; as well as inadequate operator inspection and general construction practices.

PHMSA has met with operators constructing new pipelines on several occasions to discuss issues found during inspection. In an effort to reach out to all member of the pipeline industry, PHMSA hosted a workshop in collaboration with its State partners, the Federal Energy Regulatory Commission (FERC) and Canada's National Energy Board (NEB) in April 2009. The objective of the workshop was to inform the public, alert the industry, review lessons learned from inspections, and to improve new pipeline construction practices prior to the 2009 construction season.

In 2009, PHMSA challenged industry leaders to come up with a plan or practice to resolve these issues. A letter was sent by PHMSA to industry trade groups to encourage their members to have quality action plans in place for each new pipeline construction project. PHMSA has received responses from all the trades concerning their efforts to resolve new pipeline construction issues and enforce and maintain best practices including technical work groups that have developed improved practices to resolve these quality issues.

As reported in its recent budget, PHMSA knows how important it is to get pipeline construction right. PHMSA is aware of the potential impact on pipeline integrity that can occur should the pipeline not be constructed to the highest standard. PHMSA is committed to continue its focus on new pipeline construction and inspections.

PHMSA inspectors spent nearly ten times as many days on construction inspections in 2008 as they did in 2005. The number of inspection days has decreased from this peak,

but is still nearly six times the 2005 value. PHMSA has found that the procedures for most pipeline construction projects are adequate and reflect the recommendations of consensus standard and inspects to assure the procedures are followed.

Quality control (QC) is used on pipeline construction projects to assure that the quality of construction meets required specifications. It is an extra layer of defense beyond having adequate procedures and doing things correctly. QC can find problems which are indicative of problems in construction. The correct response from operators is to identify the reasons why the construction problems are occurring and correct them. The owners of pipeline projects are responsible for assuring that their construction personnel are adequately qualified. Pipeline operators need to assure that their specification are adequate. They must also assure that steel and pipe mills, fitting and manufacturers have and follow quality management programs design to ensure the production of quality materials. Finally, operators need to inspect the materials that they receive, including during manufacturing, to assure that their specifications have been met.

Q. Will Dakota Access be subject to New Construction Inspections?

A. Yes.

Q. What role does new technology play in making a new pipeline safer than pipelines constructed in past decades?

A. For many years, pipeline experts have conducted historical pipeline performance reviews. Both PHMSA and the industry are involved in funding these studies. Operators in most recent times have many advantages over operators of past decades by making improvements in pipe manufacturing, design, construction and maintenance.

Technological improvements increase safety performance and improve pipeline resistance to forces that contribute to leak or failure.

The improvements are in the people, the practices and the technology --- hardware and software. The pipelines built today are constructed with improved materials, better construction management practices, better installation, greater depth of cover, improved backfilling practices and higher quality coatings. All such improvements make the pipe more resistant and able to withstand penetration and stresses and help the coating stay adhered to steel.

In addition, corrosion prevention, including cathodic protection technology, is more advanced. We now have the myriad of diagnostic techniques better able to discriminate and characterize defects to help operators evaluate pipe condition and prioritize repair and corrosion program adjustment. Better mapping and information management and data integration also help operators with risk management and decision making. Other improvement have been made in the area of aggressive damage prevention programs. Such programs include right of way marking, the support of one call centers and creation of 811, (call before you dig).

Leak detection technologies are improving along with control room management and monitoring systems. Valve design, placement and automation work better to respond more rapidly in the event of a release. New standards are in place for safety management systems designed to bring leadership, management and safety assurance practices to a higher level of performance. These mechanical and technological advances, along with the focus on a culture of safety, cause for a better safety management systems.

Q. Do PHMSA regulation speak to the concerns of South Dakota landowners about a possible future decommissioning of the DAPL?

A. Yes. Should DAPL decide to decommission or deactivate their pipeline, DAPL would be required to report to PHMSA. Such a report includes: the date of abandonment, pipe diameter, method of abandonment and certification that, to the best of the operator's knowledge, all of the reasonable information requested was provided and that the abandonment was completed in accordance with applicable laws. Abandonment includes safe disconnection from an operating pipeline system, purging of combustibles and sealing abandoned facilities left in place to minimize safety and environmental hazards. This requirement applies to onshore pipeline operators that cross over, under or through commercially navigable waterways. I believe in this case, the DAPL crosses the Sioux River, portions of which are classified as federally "navigable." Pipe is either considered active or abandoned. If the pipe is standing idle, not currently being used to move hazardous liquid, but could be put in service at a later date, then the idle pipeline is still subject to the integrity management rule.

Q. Does this conclude your testimony?

A. Yes.

Dated this _____ day of August, 2015

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Stacey Gerard