Exhibit No.:_____
Issues: Negative Impacts to Farming
And Ranching Operations
Witness: Charles E. Kruse
Sponsoring Party: Show-Me Concerned Land Owners
Type of Exhibit: Rebuttal Testimony
Case No.: EA-2016-0358
Date Testimony Prepared: January 24, 2017

BEFORE THE PUBLIC SERVICE COMMISSION

OF THE STATE OF MISSOURI

In the Matter of the Application of Grain Belt Express Clean Line LLC for a Certificate of Convenience and Necessity Authorizing it to Construct, Own, Operate, Control, Manage, and Maintain a High Voltage, Direct Current Transmission Line and an Associated Converter Station Providing an Interconnection on the Maywood-Montgomery 345 kV Transmission Line	)))))))	Case No. EA-2016-0358

REBUTTAL TESTIMONY OF

CHARLES E. KRUSE

ON BEHALF OF THE

SHOW ME CONCERNED LANDOWNERS

JANUARY 24, 2017

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I. INTRODUCTION AND PURPOSE OF TESTIMONY

Q. Please state your name, position and address.

A. My name is Charles E. Kruse. My wife Pam and I are the owner/operators of Charles Kruse Farms, Inc., started in 1976. My address is 1007 Woodland Drive, Dexter, MO 63841.

Q. Please describe your experience and qualifications.

A. I am a fourth generation farmer, farming land that my great-grandfather, grandfather, and father farmed before me. I received a BS in Agronomy from Arkansas State University in 1967, and an MS in Agronomy with an emphasis in plant genetics from the University of Missouri in 1974. I served as a Research Agronomist for the University of Missouri Delta Research Center, doing research on soybeans and small grains. I was a Technical Representative for BASF Ag, a world-wide company, providing product information and advice to farmers. I was elected by my peers and served on the Missouri Soybean Merchandising Council. I was appointed by Governor John Ashcroft and served as Director of Agriculture for the State of Missouri. I was recruited and served as the CEO of the North American Equipment Dealers Association, made up of agriculture and construction equipment dealers in the US and Canada. I was elected for 9 two-year terms by the membership of Missouri Farm Bureau to serve as State President, retiring in December, 2010. During that time I served on both the American Farm Bureau Board of Directors and the American Farm Bureau Executive Committee. I received the Distinguished Alumni Award from both Arkansas State University and the University of Missouri. I also received the Outstanding Service to Agriculture Award from the

Missouri Farm Bureau, and the Distinguished Service Award from the American Farm Bureau.

Q. On whose behalf are you appearing in this proceeding?

A. I am appearing on behalf of the Show Me Concerned Landowners.

Q. Please describe the scope and purpose of your testimony.

A. This proceeding addresses the application of Grain Belt Express Clean Line LLC (Grain Belt) for a certificate of convenience and necessity authorizing it to construct, own, operate, control, manage, and maintain a high voltage, direct current (DC) transmission line and an associated converter station providing an interconnection on the Maywood—Montgomery 345 kV transmission line. I will rebut Grain Belt witnesses James Arndt's and Lanz testimonies regarding how the Grain Belt Express project could impact farming operations as well as discuss other issues regarding the negative impacts to farming and land as a result of large transmission projects like the Grain Belt project. Specifically, I will address the following negative impacts: Compaction of Soil; Erosion; Irrigation Equipment Interference; Difficulty in Aerial Applications to Crops and Pastures; Possible GPS Interference; Problems Maneuvering Large Farm Equipment around Towers; Precision Farming Problems; Concerns about Storm Recovery; and Eminent Domain.

II. ISSUES REGARDING THE NEGATIVE IMPACTS TO FARMING AND RANCHING OPERATIONS

A. INTRODUCTION

Q. Did you review any materials about the Grain Belt project for your testimony?

A. Yes. I reviewed the direct testimonies of Messrs. Lanz and Arndt. I also reviewed information from Grain Belt's website at http://www.grainbeltexpresscleanline.com/site/home . In addition, I viewed a video of the Rock Island Clean Line Construction Simulation at http://www.cleanlineenergy.com/video/video/rock-island-clean-line-construction-simulation.

Q. What are some of the negative impacts to farming and land as a result of the placement of transmission line structures?

A. A study done by the Public Service Commission of Wisconsin in July, 2013, entitled, "Environmental Impacts of Transmission Lines,"[1] stated that the placement of transmission structures can cause the following agricultural and non-agricultural impacts:

- Aesthetics
- Agricultural Lands
- Airports and Airstrips
- Archeological and Historical Resources
- Cultural Concerns
- Electric and Magnetic Fields (EMF)
- Endangered/Threatened and Protected Species
- Implantable Medical Devices and Pacemakers

[1] See Schedule CEK-1, page 1.

- Invasive Species
- Noise and Light Impacts
- Property Owner issues
- Recreation Areas
- Safety
- Stray Voltage
- Water Resources
- Wetlands
- Woodlands

Under the Agricultural Lands section of the report, it lists the following negative impacts:

- Create problems for turning field machinery and maintaining efficient fieldwork patterns;
- Increase soil erosion by requiring the removal of windbreaks that were planted along field edges or between fields;
- Create opportunities for weed and other pest encroachment;
- Compact soils and damage drain tiles;
- Result in safety hazards due to pole and guy wire placement;
- Hinder or prevent aerial spraying or seeding activities by planes and helicopters;
- Interfere with moving irrigation equipment;

- Hinder future consolidation of farm fields or subdividing land for residential development.[2]

From my experience, all of the issues cited by the Wisconsin Commission report are valid, although the report does not identify all of the negative impacts associated with transmission structures. My testimony will address the issues I identified in my answer to question 4 above, many of which are referenced in the Wisconsin Commission report. I have attached the Wisconsin Commission report as Schedule CEK-1 to my testimony.

B. COMPACTION OF SOIL

Q. What is compaction of soil?

A. Soil compaction is the physical consolidation of the soil by an applied force that destroys structure, reduces porosity, limits water and air infiltration, increases resistance to root penetration, and often results in reduced crop yields.

Q. Why is soil compaction a problem for farming and land?

A. Compaction effects on crop yields can be a significant factor in today's farm economy and is a very serious problem in Agriculture today. Farmers and Ranchers spend a lot of time and money to prevent soil compaction from adversely affecting their crops and pastures. Soil compaction can result in stunted growth of plants; impede the uptake of plant nutrients, and have an adverse effect on plant growth and development.

Q. What causes soil compaction?

[2] See Schedule CEK-1, attached, page 8.

A. Heavy machines and equipment are the main cause of soil compaction. Soil compaction is made much worse by heavy equipment moving over the land, and when the equipment is used during wet conditions, the compaction issues become much worse.

Q. Will the Grain Belt Project cause compaction of soil?

A. Yes, it will. Due to the size of the structures, Grain Belt will have to use very large and very heavy equipment to construct and maintain the towers and infrastructure. In the Rock Island Clean Line construction simulation video that I viewed on Clean Line's website, the construction equipment mentioned were Augers, Excavators, Cranes, and Material and Concrete Hauling Trucks. The video also shows smaller trucks, vehicles and wire stringing equipment. Grain Belt will have to pour tons and tons of concrete to set its transmission towers in a farmer's field. If a concrete truck is carrying 10 cubic yards, then the weight of the concrete is 40,000 pounds. The truck will weigh approximately 26,000 pounds for a total weight of 66,000 pounds. It can be reasonably expected that it would take several concrete trucks per tower to supply all the concrete needed for one tower.

Without question, if this project were to move ahead, there would be very significant soil compaction, both due to the heavy equipment moving over the land, and the disregard for wet soil conditions that would make soil compaction much worse. The following picture is an example of damage to land during power line work during wet conditions:[3]

[3] See Schedule CEK-1, attached, page 9.

The Wisconsin report states the following on soil compaction:

> Soil mixing, erosion, rutting, and compaction are interrelated impacts commonly associated with transmission construction and can greatly affect future crop yields. Soils may be mixed during the excavation of pole foundations or during the undergrounding of electrical lines. The excavation depth for transmission structure foundations can vary greatly, but in some projects may be more than 50 feet deep. Excavated parent material or subsoils should not be mixed with topsoils and spread on the surface of the ROW [Right of Way]. Significant rutting can occur when soils become saturated or in areas of sensitive soils (see Figure 3). This may impact agricultural lands by increasing the mixing of soils, eroding topsoils during rain events, and compacting soils. The degree to which soils are compacted by heavy construction equipment again depends on the type of soil and its saturation level. Ineffective erosion controls may wash valuable topsoils downhill and impact wetlands and waterways. Agricultural soils that have been improperly protected or mitigated may suffer decreased yields for several years after the construction of the transmission line is completed.[4] (emphasis added).

[4] *Id.* at page 8.

In some areas, the compaction problems for landowners could last for years, and in some areas, the damage may be permanent.

Q. Do you have comments regarding Grain Belt's "Missouri Agricultural Impact Mitigation Protocol," Schedule JLA-2?

A. Yes, I do. Policy 8, at page 8 of the protocol discusses the "Restoration of Soils of Compaction and Rutting." The policy states that Clean Line will "attempt to avoid and minimize the potential for compaction or rutting," and it will "restore rutted and compacted land to as near as practicable to its pre-construction condition." These are nice sounding words. These words are similar to Clean Line claiming that they will attempt to stop the rain from falling and restore a house burned by a fire. As I have described, soil conditions take years to change. That's why farming is a life-long endeavor. Compaction cannot be remedied quickly. During that time, the land will experience productivity losses.

C. EROSION

Q. What is soil erosion?

A: Mr. Arndt accurately describes soil erosion as the detachment and displacement of soil particles by agents of wind or air. I agree that topsoil eroded from susceptible soils reduces soil fertility and degrades soil tilth, which can become especially severe when topsoil is eroded completely. Also, sediments deposited downslope can affect plant germination and growth through burial, adversely affect soil tilth, contaminate nearby wetlands, lakes, streams and rivers, with sediment, and compromise farm program enrollment.

Q. What are some common methods used to prevent or control erosion?

A. I would note three in particular. They are the following:

TERRACING is the practice of constructing berms or earthen embankments in fields and pastures in order to prevent erosion during times of heavy rain. Terraces slow the movement of water and thereby prevent washouts and gully formations. While this is a costly process, it is common practice in order to maintain the optimum condition of fields and pastures.

TILING is the practice of burying pipes in order to drain excess water during times of heavy rain so as not to experience washouts and gully formations. Tiling is also used to drain pockets of water in fields and pastures so that the soil will dry more quickly and not cause damage to crops and pastures. Again, this is a costly endeavor, but is quite popular in order to utilize the best soil conservation practices. Fortunately, tiling is rare along the Grain Belt Express proposed route. Underground conduits are far more prevalent in that area.

WATERWAYS are built as a means to move water away from Significant elevation differences in fields and pastures. They are what the term implies-man-made areas that have the ability to move water away from these areas. In order for waterways to work as designed, they must have a thick cover of grass in order to prevent erosion.

Q. Did Mr. Arndt address the measures Clean Line will undertake to prevent or control erosion?

A. Yes, he did. But Clean Line's measures will not adequately protect the land during construction or in the future. All of the above practices are utilized throughout the eight counties that would be impacted by the Clean Line project These practices are expensive but are very popular in order to maintain the quality of the land and to prevent serious

erosion and gully formation. There is no doubt that the Clean Line project will cause serious damage to all three of these practices. It will take both considerable money and time to restore these and the risk exists that, in the event of heavy rains occurring during the reestablishment process, serious damage can occur to the soil. I simply do not believe Clean Line can anticipate the damage the construction process will cause to the investments already made in these efforts.

More importantly, the line will interfere in and frustrate future endeavors to protect the land from erosion. Farmers are constantly investing in their land to improve its fertility. That is part of the stewardship they have in their land. The new physical structures will interfere with their efforts to implement new terracing, tiling and waterways. In addition, the Transmission Line Easement Agreement proposed by Mr. Lanz severely restricts the rights of landowners to make improvements on their land within the easement. At paragraph 4 of Schedule DKL-4, the Agreement provides that the landowner shall not undertake an activity that would "interfere with Grain Belt's use of the Easement . . . without in each case the prior written consent of Grain Belt." This provision effectively gives Grain Belt veto power over activities that the landowner would undertake to improve his land and protect it against soil erosion. From a business perspective, this is a constraint on the farmer's economic liberty and hinders his ability to run his business as he sees fit.

D. IRRIGATION EQUIPMENT INTERFERENCE

Q. What is irrigation?

A: Irrigation is the artificial application of water to the land or soil. It is used to assist in the growing of agricultural crops, maintenance of landscapes, and revegetation of disturbed soils in dry areas and during periods of inadequate rainfall.

Q. Is irrigation of farm land used extensively in Missouri?

A. Irrigation, out of necessity, has become much more prevalent over the past several years. In Missouri, the two most prevalent types of irrigation are flood irrigation and center pivot irrigation. With flood irrigation, the land is shaped so there is a slight grade, and the irrigation water is then run between the rows of crop. With center pivot irrigation, a large structure moves in a circle around the field, distributing water on the crop as it moves.

Q. What kind of irrigation is used for the land along the proposed transmission route?

A. The proposed route for Grain Belt has land that, because of topography, is much more conducive to center pivot irrigation. The structures that are being proposed by Grain Belt would make it an impossibility to irrigate the fields impacted by Grain Belt structures. In my opinion, timely moisture is the greatest variable to maximizing crop production. The inability to irrigate as a result of the Grain Belt structures would dramatically reduce the potential for this land, thereby reducing the land value significantly, as a result of the diminished productivity potential.

Q. Do you have any specific responses to Mr. Arndt's testimony?

A. Yes, I do. At page 15 of Mr. Arndt's testimony, at lines 4 through 6, he states that "Irrigation is not expected to be a common agricultural land use along the preferred route in Missouri. Most of the counties have aquifers and soils that are not favorable for large-scale center pivot irrigation." This statement is unbelievable. As I just stated, the topography in the part of the state where the line is proposed to be located is more

conducive to center point irrigation. In an attempt to quantify my observation, I requested the USDA National Agricultural Statistics Service in Columbia, Missouri provide me with the most recent statistics for irrigated acres in counties affected by the Clean Line route. I have attached the response to my request as Schedule CEK – 2 to my testimony. As Schedule CEK – 2 shows, there were 120 farms and in excess of 10,636 acres of land irrigated in 2012. That is a significant portion of the eight counties affected by the Clean Line proposed route. And considering the topography of these counties, there is no doubt that the majority, if not all of these acres are under center-pivot systems. There are clearly more irrigated acres in these counties today then there were in 2012. In fact, irrigated acres have increased state-wide at a significant rate and will continue to do so. The reason is simple- timely moisture is arguably the greatest impact on crop yields and pasture growth than any other factor. Mr. Arndt is wrong. Clean Line structures will cause significant problems, which will be very costly, and in some cases, almost impossible to resolve. It is at best impractical and at worst impossible to reconfigure a center pivot system around a structure such as the one Clean Line is proposing.

E. Difficulty In Aerial Applications To Crops And Pastures

Q. What are aerial applications?

A. Aerial application is often the most efficient and most economical way to apply crop protection products, fertilizer and even seed to grow and protect crops such as corn, soybeans and wheat. Aerial applications in agriculture are increasing every year. Herbicides, fungicides, insecticides, and other materials are applied aerially to a greater extent than ever before.

Q. What effects to aerial application can be expected from Grain Belt's structures?

A. While the Grain Belt structures would create obvious hazards for low-level flying, the structures would also create serious impediments to being able to uniformly apply the product, and some areas of the field simply would not be treated. This would adversely impact the potential profit picture for these fields. In the case of severe insect infestations, the untreated areas would allow the insects to thrive, creating the necessity for repeated applications of insecticides as the insects spread over large areas of the fields. As a result, costs would be greater and at the same time, profit potential would be diminished.

F. POSSIBLE GPS INTERFERENCE

Q. What is GPS?

A. The Global Positioning System (GPS) is a space-based satellite navigation system that provides location and time information in all weather conditions, anywhere on or near the Earth where there is an unobstructed line of sight to four or more GPS satellites.

Q. How is GPS used in farming?

A. Farmers use GPS receivers to record location. This information helps determine how much fertilizer, weed control, and water is needed in various locations of the field. Additional soil analysis combined with market information about predicted crop prices helps farmers decide what is the best crop rotation.

Q. How prevalent is the use of GPS in farming operations?

A. Farmers and ranchers are utilizing GPS at a greater level than ever. GPS is used to guide equipment so that rows are straight and uniform, herbicides are not overlapped, fertilizer applications are uniform with no double-applications or skipped spots. GPS is very important for both row–crop and pasture land.

Q. Can there be negative impacts to using GPS for farm operations from structures like Grain Belt will be building on farm and pasture land?

A. Yes, it is possible. Whether or not transmission lines interfere with GPS is not completely settled. In 2009, the Wisconsin Department of Agriculture, Trade and Consumer Protection prepared an Agricultural Impact Statement on American Transmission Company, LLC's proposed Rockdale to West Middleton 345 kV transmission line project ("Wisconsin Impact Statement"). GPS was one on the issues studied. On page 54, the report stated:

> "The question of whether transmission lines may have an effect on increasingly sophisticated agriculture equipment, including the GPS component of precision agriculture systems, has come up frequently in recent years. Some experts in the field have indicated that they believe that there were no effects of transmission lines on GPS, but that the issue deserves further investigation. A technician at John Deere stated that his experience suggested that transmission lines do interfere with the GPS signal, as well as stating that this issue should be formally studied and that he would support such a study."[5] (emphasis added).

I have attached a copy of the Wisconsin Impact Statement as Schedule CEK-3 to my testimony. Later on, the study quotes the expert witness testimony by J. Michael Silva for Montana Alberta Tie Ltd., who had done both extensive measurement and theoretical analysis to determine the possibility of transmission line impacts on GPS signals:

> "Silva's testimony does leave room for two possible remaining ways that transmission lines could conceivably act to affect GPS-guided equipment. The first case would be if the power line tower physically blocked the line-of-sight between a fixed base station used to provide differential correction to satellite information and a mobile piece of farm equipment, just as a building or a tree might similarly block a satellite signal "depending on the relative instantaneous satellite and user positions." (Silva, 2007, 12) He sees this as highly unlikely.[6] (emphasis added).

And:

[5] See Schedule CEK-3, attached, page 54.
[6] *Id.* at page 55.

> The other method by which GPS might be affected, while speculative, remains worthy of further investigation. This would be through the transmission line being a media for conveyance of higher frequency harmonics of electromagnetic energy that are near to GPS frequencies. 'Performance of GPS can be degraded due to unintentional electromagnetic energy from a variety of sources, especially those that produce higher frequency harmonics near to the GPS frequencies.' (Silva, 2007, 13). Silva sees it as unlikely that harmonics of the 60 Hz. frequency of power lines would be a source of GPS interference. 'A harmonic is an integer multiple of the basic frequency at which a device is designed to operate and it is usually much lower in intensity than the primary frequency. High voltage transmission lines have very little harmonics and would not be a source of interference to GPS.' (Silva, 2007, 13).[7] (emphasis added).

The report concludes on this issue:

> However, it is documented that radio frequency electric currents are present on transmission lines. These are used for communications and remote control by electric utilities. In addition, there are many high frequency transients present on power lines originating due to switching derived from sources along the line that affect power quality. Where power line carrier (PLC) techniques are used on power lines for telemetry, protective relaying or supervisory control, some studies demonstrate the potential for the field generated 'to degrade navigation signal receiver performance.' (Silva and Whitney, 2002).[8] (emphasis added).

To be fair, the study did indicate that major interference was unlikely, but importantly that further study was warranted.[9] The fact that some experts indicate that further studies are necessary on the impacts to GPS on large transmission lines demonstrates that Grain Belt cannot conclusively confirm that their structures and DC high voltage line will not interfere with GPS. Given that Grain Belt is asking for eminent domain powers to force landowners against their will to have these structures placed on their land, Grain Belt should be held to a very high standard in demonstrating conclusively that GPS for farming operations will not be adversely affected by their project.

[7] *Id.* at page 56.
[8] *Id.*
[9] *Id.*

Q. On page 28, lines 1 through 5 of Grain Belt witness James Arndt's testimony, he states that "there is no evidence of power lines interfering with GPS but for a possible blockage degradation of signal immediately next to a large monopole. Instances of signal loss associated with support structures are uncommon and typically would only occur for a short period of time, if at all.". Do you agree?

A. Not necessarily. The fact that there is anecdotal evidence of interference (the John Deere representative cited in the Wisconsin Department of Agriculture, Trade and Consumer Protection report) and that report's conclusion that further studies are warranted show that the science is not settled on this issue. This is in and of itself evidence that there is interference. I believe that is why the Wisconsin Department of Agriculture, Trade and Consumer Protection report concluded that more studies are needed on this important topic for farmers.

G. PROBLEMS MANEUVERING LARGE FARM EQUIPMENT AROUND TRANSMISSION TOWERS

Q. Why is it a problem to maneuver large farm equipment around transmission towers?

A. By necessity, farm equipment continues to get larger. Fifty years ago, a four-row planter was considered large. Today, it is not uncommon for farmers to have 24-row planters or larger. Spray booms can be 120 feet wide. It is not unusual for tillage equipment to be 25-40 feet wide. Combine grain headers can be 45 feet wide. With all the large farming equipment used today, it is a nightmare to try to maneuver around obstacles such as the ones that Grain Belt is proposing. Looking at the proposed route, a very high percentage

of these obstacles would traverse farmland at an angle, which makes the maneuverability problem even worse.

Q. What are the effects of the maneuverability problems associated with transmission towers?

A. Farmers will have to take more time and use more fuel to maneuver around these obstacles. This means more expenses, which cuts into the amount of income a farmer can earn.

H. PRECISION FARMING PROBLEMS

Q. What is precision farming?

A. Precision farming is simply utilizing technology, especially GPS, to apply optimum amounts of fertilizer to small areas of fields based on intensive soil testing instead of applying the same rate of fertilizer to the entire field. Precision farming has become very popular in recent years.

Q. Why is precision farming becoming so popular?

A. Precision farming is not only more cost-effective, it also eliminates the practice of over-fertilizing some areas of fields.

Q. What effects could the Grain Belt project have on precision farming?

A. A transmission project like the Grain Belt project could make it much more difficult to utilize precision farming practices, due to maneuverability problems around the large Grain Belt structures and due to potential interference with GPS.[10] Again, the fact that

[10] See Schedule CEK-3, attached, pages 53-56, and my testimony under II. E. above.

the Grain Belt structures would traverse fields at an angle would make precision farming extremely difficult.

I. STORM RECOVERY CONCERNS

Q. Do you have concerns about how Grain Belt's storm recovery efforts may affect the land?

A. Yes, I do. As much as we would hope that our state never has storms that damage property, that has not, and will not be the case. In the event of a storm that topples some of the Grain Belt structures, agriculture would experience substantial damage. Whether livestock or crops, the potential for significant losses would be high. The immediate loss of crops and livestock would be bad enough, but the moving of large equipment across fields and pastures to recover the structures and lines would cause much greater damage. There is a very high probability that the ground will be very wet and that will, of course, cause many problems—great damage to crops and pastures, severe rutting and soil compaction.

III. FINAL COMMENTS AND CONCLUSION

Q. The studies and documents you have attached as schedules to your testimony indicate that mitigation, remediation, and payments to landowners for damages can compensate the landowner for negative impacts to the land. Do you agree?

A. Yes, but only to a certain extent. Even if Grain Belt will be required to compensate landowners for negative impacts to the land, it has been my experience as a farmer, and as Missouri Farm Bureau President, that in practice such compensation can never be completely adequate. This project will have a permanent negative impact on farming and

ranching operations in Missouri for which Grain Belt can never adequately mitigate, remediate, or compensate affected landowners. Furthermore, my understanding is that the Grain Belt project will be so much larger than traditional alternate current (AC) transmission projects like we have currently in Missouri, both in the size of the structures and the amount of power flowing on the lines. Accordingly, the impacts could be more severe than those that have ever been experienced before in Missouri.

Q. Do you have any other comments?

A. Yes. During the time I served as Missouri Farm Bureau President, we saw a lot of abuses of eminent domain. We, as an organization, decided to try to pass stronger eminent domain legislation, which we were successful in doing. One of the aspects of this legislation was that eminent domain could not be used solely for economic development purposes. That part of the law, in my opinion, makes the Grain Belt effort a non-starter. Additionally, eminent domain is supposed to be used in Missouri to further the public good of our citizens. In my opinion, Grain Belt's plan provides at best only a minimal public good that is far outweighed by the negative impacts of this project on the citizens of Missouri. Furthermore, as I understand the project, there are so many unknowns, uncertainties and blanks to be filled in. In the best interests of the people of the State of Missouri, the PSC should deny this application. To approve this massive amount of eminent domain for a project like this is unwarranted and unjust.

Q. Does this conclude your testimony?

A. Yes, it does.

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AFFIDAVIT OF CHARLES E. KRUSE

STATE OF MISSOURI)
) ss
COUNTY OF Stoddard)

Charles E. Kruse, being first duly sworn on his oath, states:

1. My name is Charles E. Kruse.

2. Attached hereto and made a part hereof for all purposes is my Rebuttal Testimony on behalf of Show Me Concerned Landowners, consisting of 19 pages, having been prepared in written form for introduction into evidence in the above-captioned docket.

3. I have knowledge of the matters set forth therein. I hereby swear and affirm that my answers contained in the attached testimony to the questions therein propounded, including any attachments thereto, are true and accurate to the best of my knowledge, information and belief.

Charles E. Kruse

Charles E. Kruse

Subscribed and sworn before me this 24 day of January, 2017.

TERESA NEELEY
Notary Public - Notary Seal
State of Missouri
Commissioned for Stoddard County
My Commission Expires: July 13, 2019
Commission Number: 15636677

Teresa Neeley

Notary Public