

IN THE UNITED STATES DISTRICT COURT  
FOR THE WESTERN DISTRICT OF PENNSYLVANIA

UNITED STATES OF AMERICA,	)	Civil Action No. 1:90-cv-00229
	)	Civil Action No. 1:17-17-cv-0006-BR
Plaintiff	)	
	)	
v.	)	
	)	
ROBERT BRACE, and ROBERT BRACE	)	
FARMS, INC.,	)	
	)	
Defendants	)	
	)	

**AFFIDAVIT OF SUSAN KAGEL**

I, SUSAN KAGEL, being duly sworn, depose and state as follows:

1. I am over the age of 18 and am a resident of the State of Idaho. I have personal knowledge of the facts herein and if called upon could testify completely thereto.
2. I have been designated as an expert witness for Defendants in the case of *United States. v. Brace et. al.*, 17-cv-06, W.D. Pa., and have prepared a report in rebuttal to the expert report prepared and submitted by Peter Stokely of the EPA on behalf of the United States in this matter.
3. I have also reviewed the expert report prepared and submitted by Richard Brooks of Brooks Consulting on behalf of the United States in this matter.
4. I am a Wetland Scientist, with over ten years of experience in wetland investigation, including extensive experience in wetland delineation using soils, hydrology, and vegetative data as well as historic aerial photography interpretation in connection with (1) the assessment of alleged violations of Section 404 of the Clean Water Act (“CWA”); (2) routine wetland delineations; and (3) problematic and/or challenging wetland delineations. In completing these



assessments and delineations, I collect and analyze data to determine the hydrologic properties of various wetlands and wetland systems, as well as their physical, chemical and biological relationships to downstream wetlands and water bodies.

5. I received a Bachelor's of Science in Agriculture from the University of Missouri in 1982 and a Master's of Science in Animal Science (with an emphasis on pasture management) from the University of Nebraska in 1986. I served as a pasture specialist for 3M in 1985-1986. While at 3M, I oversaw the application of the plant growth regulator mefluidide and collected and analyzed data regarding the effects of mefluidide on forage yield and quality and on the weight gain of animals whose food source consisted of treated pastures.

6. I received my Ph.D. in Veterinary Molecular Biology in 1996 from Montana State University. I completed my four-year postdoctoral fellowship on bacterial toxin metabolism and biology 1996-2000 at Children's Hospital in Boston, which is a Harvard Medical School teaching hospital. Following the postdoctoral fellowship at Harvard, I served as a Senior Scientist, and later as the Director of Pre-Clinical Research in vaccine development for LigoCyte Pharmaceuticals in Bozeman, Montana. All of these experiences developed and refined my ability to scientifically address a variety of biological questions, from interactions between animals and their environment (ecological considerations) to examining man-induced changes on animals and their environment.

7. In 2007, I joined Kagel Environmental, LLC ("KE") and began full-time training as a wetland scientist under former United States Army Corps of Engineers ("USACE") Training Officer Ray Kagel, M.S., P.W.S. In the past ten years, I have participated in over 135 wetland jurisdictional determinations, including more than 30 violation cases. I have personally conducted approximately 70 complete wetland delineations that were submitted to and approved by the USACE.

8. Since 2014, I have been KE's primary wetland delineation report writer, and I have been equally responsible for the determination of the wetland/upland boundaries with my business associate, Mr. Ray Kagel. In 2016, I was primarily responsible for boundary determination for a 2,500-acre wetland delineation KE conducted. I utilized a combination of traditionally collected field data (soils, vegetation and hydrology), LiDAR and aerial photography analysis. My work was validated on this large and controversial project by the Utah field office of the Sacramento District of the USACE, when they issued an Approved Jurisdictional Determination of the wetland/upland boundaries I determined with remote sensing. Through this exhaustive study, I developed considerable experience and knowledge of aerial photographic interpretation, as well as the use of LiDAR to accurately set wetland/upland boundaries.

9. I have completed various online and field courses, including Basic Wetland Identification and Delineation (Wetland Training Institute) and Problematic Wetland Delineations (Wetland Training Institute) where I presented several of the challenging and difficult wetland delineation cases that KE has completed. I also completed a Hydric Soils field course (North Carolina State University). I have spent many hours studying aerial photography analysis over the last several years in order to become familiar with procedures, as well as shortcomings and strengths of the techniques for my own use in large area wetland delineations as well as forensic wetland delineations. Each project that I have engaged in has sharpened my skills and increased my confidence in what remote sensing and photographic information does or does not indicate a wetland.

10. I have served as an expert wetland delineator and wetland violation resolution expert for approximately thirty separate violation cases across the country. With KE, I have completed

numerous forensic wetland delineations, analyzed wetland functions and values retrospectively as well as currently, and gathered and presented defensible data supporting our conclusions.

11. I have a working knowledge of Hydrogeomorphic (HGM) analysis of wetland functions and values.

12. I have been designated as an expert for the Defendant in the areas of wetland delineation, jurisdictional determination and aerial photography analysis.

13. In the course of preparing my expert report to rebut Mr. Stokely's expert report, I have had the opportunity to closely scrutinize Mr. Stokely's methodology, analyses and choice of language to describe the extent, nature and scope of his assessment.

14. Mr. Stokely states that he identified and digitized features such as "wetland boundaries, stream courses and areas of disturbance" for the Marsh Site. Identifying wetland boundaries is one and the same as delineation of a wetland.

15. Mr. Stokely states that among his purposes was to determine the existence and locations of wetlands, as well as connections to downstream waters. These activities are essentially a form of wetland delineation as well as jurisdictional determination. Mr. Stokely says he used his site visit on October 16 and 17, 2017 to confirm wetland presence, which is a major component of a wetland delineation. He then presented a map (Stokely Figure 14) showing the boundaries of the wetlands he mapped. This is a wetland delineation and cannot be interpreted any other way.

16. Mr. Stokely also reports confirming the adjacency and connection of Marsh Site wetlands with Elk Creek, a direct tributary to Lake Erie. The only use of this language is to indicate that the Marsh Site wetlands are jurisdictional.

17. The title of Dr. Brooks' report is "Ecological Functions and Connections of Wetlands and Waters at the Marsh Site, Waterford, Erie County, Pennsylvania". Dr. Brooks' expertise is wetland

functional assessment and developing assessment models, as shown by his publication record. However, in Dr. Brooks' expert report<sup>1</sup>, he did not use standard methods of wetland function assessment even though he has published extensively in this area.

18. Typically, to do a wetlands functional assessment, models are employed that utilize formulas incorporating variables such as VBIOMASS, VEXOTIC, VREGEN, VREDOX, and others, with the goal of ending up with a number that conveys a value of a wetland for performing a function compared to a "perfect" wetland providing the same function(s)<sup>2</sup>. Brooks did not do this on the Marsh Site, although he is published in developing and utilizing such models.

19. The Brooks report's introductory paragraph states that he was hired to provide an expert opinion on the "existence, conditions, and functions of wetlands" on the site, as well as, to determine their connectivity/significant nexus. In my professional opinion, the existence, conditions, and functions of wetlands are only relevant to the U.S. Department of Justice (DOJ) if those wetlands are jurisdictional. The DOJ does not have any interest in functions of wetlands that are not jurisdictional, by definition of what the DOJ does. Other agencies could have an interest in a scientific sense in non-jurisdictional wetlands, but there is simply no reason to gather the data Brooks did unless you want to determine if the wetlands are jurisdictional.

20. The only "data" Dr. Brooks reported from the actual Marsh Site was information that would be collected for wetland delineation and would not be typically featured in a wetlands functional assessment. If Dr. Brooks' report was actually devoted to providing a wetlands functional assessment, he would have measured, or at least estimated, wetland functions such as sediment

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<sup>1</sup> *United States v. Brace et al.*, 17-cv-06, W.D. Pa. Expert Report: Ecological Functions and Connections of Wetlands and Waters at the Marsh Site, Waterford, Erie County, Pennsylvania. Robert P. Brooks, Ph.D., December 18, 2017.

<sup>2</sup> Hydrogeomorphic Model Building Process. J.M. Rubbo and R.P. Brooks. Monitoring and Assessing Pennsylvania Wetlands 2004. II. Methods, Results, and Products. B.3.b.2. HGM Modeling Building Process.

trapping, wetland organism habitat functions, nitrogen clearance, etc., etc., rather than merely mention it in passing (Sec. 2.6).

21. A significant portion of the Brooks report actually does not present any documented facts about the Marsh Site itself and would not have required that he even be on the site.

22. The data actually reported represents his faulty results of sampling of six separate sites for soils, vegetation and hydrology, using i.e., jurisdictional wetland parameters. He reported this data on Wetland Determination Forms used for wetland delineations. There are no functional models employed or any equations utilized. In Dr. Brooks' publications, he typically uses reference sites to calibrate variables used in employing models for evaluating wetland functions. However, there is certainly no mention of calibration of any sort of variable in his expert report. This is not a standard wetland *functions* assessment, as advertised by the title or the stated purpose of the report.

23. The small amount of actual "data" that Dr. Brooks presents in his report is only useful in determining if a jurisdictional wetland exists. He does not provide a meaningful, scientific analysis of actual wetland functions of the Marsh Site.

24. Dr. Brooks' use of the following language in his "Introduction" – "significantly affect chemical, physical and biological integrity" when referring to "Elk Creek" and "Lake Erie," and his reference to "Lake Erie" as "the TNW into which Elk Creek directly flows" is undoubtedly the language in the definition of "significant nexus," which Justice Kennedy used in *Rapanos v. United States*, 547 U.S. 715 (2006) to determine if a wetland was/is jurisdictional.

25. Dr. Brooks also takes great care to state that there are surface connections to Elk Creek as well as Lake Erie, which is language used to establish jurisdiction as used by Justice Scalia in *Rapanos v. United States*, 547 U.S. 715 (2006) to determine if a wetland was/is jurisdictional.

26. The Brooks report's mention of the Marsh Site's wetland boundaries (in Sec. 2.6 and

Figure 4.0) also intuitively relates to a jurisdictional determination.

I declare that, to the best of my knowledge and belief, the information herein is true, correct and complete.

FURTHER AFFIANT SAITH NOT.

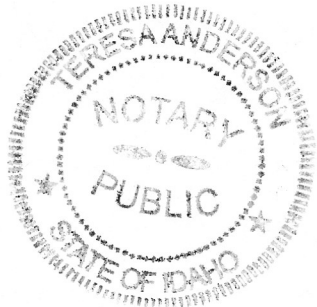
DATED this 14 day of March, 2018.

Susan Kagel  
SUSAN KAGEL

**NOTARY ACKNOWLEDGEMENT**

SUBSCRIBED AND SWORN TO before me this 14 day of March, 2018.

STATE OF Idaho COUNTY OF Jefferson .SS:



(SEAL)

Notary Public Teresa Anderson

My Commission Expires 7-1-23