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**DECLARATION OF DOUGLAS C. PFLUGH**

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I, Douglas C. Pflugh, declare as follows:

1. The facts and opinions set forth in this declaration are based on my personal knowledge and experience. If called as a witness in these proceedings, I could and would testify competently to these facts and opinions.

**Technical Qualifications**

2. I have worked as a Research Associate for Earthjustice since September 2001. My work at Earthjustice includes the use of aerial photography, Geographic Information System (GIS), other database management and query software, and paper and digital maps and records generated by public and private sources. GIS software uses geospatial data to create maps and perform analyses. GIS is recognized as an important tool for communication and problem solving by government, industry, and conservation organizations throughout the country.

3. I have a Bachelor of Science degree in Natural Resource Management from California Polytechnic State University San Luis Obispo. This degree was awarded Summa Cum Laude. The course work and related projects leading to this degree included federal land management, environmental law, environmental impact analysis, physical and biological sciences, and land surveying. While at the university, I also pursued studies in and served as a teaching assistant for courses in the outdoor recreation curriculum, including map reading and over-land navigation. These courses included material on and practical application of the understanding and interpretation of USGS topographic maps.

4. I have a Master of Urban Planning degree from the University of Washington. The course work and related research activities leading to this degree included training and experience with aerial photography interpretation, GIS and other database management and query software packages. I completed relevant undergraduate and graduate coursework in the Geography, Landscape Architecture, and Urban Design and Planning departments. The professional project that I completed in lieu of a thesis involved the creation of GIS data and interactive and static maps for the government of an Alaskan city.

5. I have worked in positions involving GIS and databases for state and local government entities and private firms for over five years. My work has included field data collection, database design and development, remote sensing analysis, automation of tasks using scripting languages, preparation of customized user interfaces, and production of maps for inclusion in documents and public display. I have provided GIS and database support for research projects funded by the National Science Foundation and the United States Geological Survey. I also performed extensive aerial photography interpretation for the USGS-funded project. I provided GIS support for a regional planning project conducted for a Washington county government. Maps that I produced for this project were displayed at the ESRI International User Conference and published in the ESRI Map Book, both industry-recognized showcases for excellence in work. As a research staff member at the University of Washington, I managed data, hardware, and software resources of the Remote Sensing Applications Laboratory and the Urban Ecology Research Laboratory.

6. In July 2002, I presented a talk entitled "Supporting Activism and Litigation: Geography and Oil & Gas Development" at the ESRI International User Conference. This conference is the major GIS industry annual conference and had more than 11,000 attendees. I

presented the same talk at the Society for Conservation GIS conference that was held immediately prior to the ESRI event.

7. Prior to my work at Earthjustice, I worked for the National Outdoor Leadership School for over four years as a field instructor and for one year as a program coordinator. During that time I was frequently responsible for both interpretation of USGS topographic maps for navigation in a wilderness and non-wilderness settings and student instruction in the same.

**USGS Topographic Maps Covering the Vicinity of the Claimed Bald Knoll Road Route**

8. I reviewed a copy of the USGS map "Bald Knoll, Utah," published in 1966. This map was published at a scale of 1:24,000, and is identified on the sheet as "N3715—W11222.5/7.5" and "AMS 3558 IV SW—SERIES V897." I found that the map has common characteristics of USGS topographic maps and included depictions of both natural and manmade features. This map was included as supporting information for Kane County's application for a non-binding determination (NBD) that an R.S. 2477 right-of-way exists for the entirety of the Bald Knoll route on the BLM website at: [http://www.blm.gov/style/medialib/blm/ut/lands\\_and\\_minerals/lands/test/bald\\_knoll\\_rd\\_nbd.Par.13779.File.dat/BaldKnollQuad.pdf](http://www.blm.gov/style/medialib/blm/ut/lands_and_minerals/lands/test/bald_knoll_rd_nbd.Par.13779.File.dat/BaldKnollQuad.pdf).

9. I reviewed a copy of the USGS map "Skutumpah Creek, Utah," published in 1966. This map was published at a scale of 1:24,000, and is identified on the sheet as "N3715—W11215.5/7.5" and "AMS 3558 IV SE—SERIES V897." I found that the map has common characteristics of USGS topographic maps and included depictions of both natural and manmade features. This map was included as supporting information for the Bald Knoll NBD on the BLM website at: [http://www.blm.gov/style/medialib/blm/ut/lands\\_and\\_minerals/lands/test/bald\\_knoll\\_rd\\_nbd.Par.47569.File.dat/SkutumpahCreekQuad.pdf](http://www.blm.gov/style/medialib/blm/ut/lands_and_minerals/lands/test/bald_knoll_rd_nbd.Par.47569.File.dat/SkutumpahCreekQuad.pdf).

10. I further found that that the claimed Bald Knoll Road route, as depicted on the map provided under Supporting Information for the Preliminary Non-binding Determination on Bald Knoll Road ("NBD") on the BLM website ([http://www.blm.gov/ut/st/en/prog/more/lands\\_and\\_realty/rs2477\\_rights-of-way/bald\\_knoll\\_road\\_non/supporting\\_informatiion/photos\\_\\_\\_map.html](http://www.blm.gov/ut/st/en/prog/more/lands_and_realty/rs2477_rights-of-way/bald_knoll_road_non/supporting_informatiion/photos___map.html)), traverses portions of these two maps. The claimed route, illustrated as a "Unimproved dirt" road, originates in Township 40 South Range 5 West Section 34 and terminates in Township 40 South Range 4 ½ West Section 17.

**"1960 Aerial Photos" Provided as Supporting Information for the NBD**

11. I reviewed the image file identified as "1960 Aerial Photos" under Supporting Information for the Preliminary Non-binding Determination on Bald Knoll Road ("NBD") on the BLM website at: [http://www.blm.gov/style/medialib/blm/ut/lands\\_and\\_minerals/lands/test/bald\\_knoll\\_rd\\_nbd.Par.41019.File.dat/1960AerialPhotos.pdf](http://www.blm.gov/style/medialib/blm/ut/lands_and_minerals/lands/test/bald_knoll_rd_nbd.Par.41019.File.dat/1960AerialPhotos.pdf).

12. Viewing these images on a computer monitor, I was unable to discern any features on these image sets that could be described definitely as a disturbed travel route. The numerous lighter, somewhat-linear features on the photo might be roads, trails, pipeline construction clearance, power lines, or, as appears to be evident on the lower portion of DSA-4AA-12, an artifact of photo handling and possibly scanning. Although there are Kane County route designations noted in the margin of one of the images, I could not definitively associate them with any feature and found that they do not provide any useful information. My interpretation was compromised not only by the poor quality of the images but also by the many markings covering one of the image sets (apparently related to a classification process).

13. I compared the "1960 Aerial Photos" image sets with the USGS maps described above in Paragraphs 8 and 9, and was not able to confirm that the image sets covered the area of the claimed route.

**Review of Original Prints of the "1960 Aerial Photos"**

14. Referencing the image file described above in Paragraph 11, I identified five aerial photographs that were included in the images: DSA-4 AA-12 dated June 28, 1960; and DSA-10 AA-18, DSA-10 AA-19, DSA-10 AA-21, and DSA-10 AA-22, all dated July 16, 1960. I identified these photographs in USDA Farm Services Agency online aerial photography catalog ([http://www.fsa.usda.gov/Internet/FSA\\_File/catalog.txt](http://www.fsa.usda.gov/Internet/FSA_File/catalog.txt)) which lists a set of 1:20,000, black and white 1960 photos for Kane County ("DSA" is the old alphabetic FIPS code for Kane County and is a designation used in the Farm Services Agency catalog). I ordered the five photographs listed above from the Farm Services Agency's Aerial Photography Field Office and received the photographs on October 22, 2007. Reproductions of these photographs are attached to my declaration as Exhibit A. I compared the photographs to the image file described above in Paragraph 11, and determined, to the best of my ability given the poor quality of the digital images, that the Farm Service Agency photographs I obtained are the same as those included in the image file maintained on BLM's website supporting the Bald Knoll Preliminary NBD.

15. I found that the photography I obtained from the USDA and described in Paragraph 14 covers only a portion of the area through which the claimed route passes: roughly the area from the southeast quarter of Section 22, Township 40 South Range 5 West, through the eastern terminus of the claimed route. DSA-4 AA-12 is the western most photograph; the other four photographs comprise a separate north-south flight line, where DSA-10 AA-21 is roughly

level with DSA-4 AA-12. I found that none of these photographs appear to show any portion of Township 40 South Range 5 West Sections 27 or 34. The exact extent of the southwest corner of DSA-4 AA-12 is difficult to determine due to lens distortion and a darkened image.

16. Using a 2x pocket stereoscope, I reviewed three of the above described photographs: DSA-4 AA-12, DSA-10 AA-21, and DSA-10 AA-22. I found that these three were sufficient for stereoscopic analysis of a portion of the area traversed by the claimed Bald Knoll route: from the southeast quarter of Township 40 South Range 5 West Section 13 east to the location of the eastern terminus of the route. I would have needed additional photography from the DSA-4 flight for stereoscopic coverage of the western area of the claimed route; for this area, I used the stereoscope as a magnifying device only. I did not use the remaining two photographs described above (DSA-10 AA-18 and DSA-10 AA-19) for analysis as they did not provide any additional coverage of the area of the claimed route.

17. During my review of the photography, I referred to the above described 1966 USGS maps (Paragraphs 8 and 9) to identify the location of the claimed route on the USDA photography. I found this to be a straightforward task due to the rugged topography of the area traversed by the claimed route, especially the portion located east of Thompson Creek. Stereoscopic viewing exaggerates vertical relief, making slopes quite apparent.

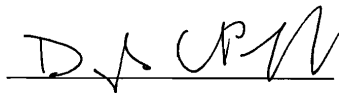
18. I found a landscape scar (readily visible to the naked eye) roughly corresponding to the claimed route to be visible from the northeast quarter of the southeast quarter of Section 22 through the northwest quarter of the southeast quarter of Section 14 (Township 40 South Range 5 West). I did not locate any additional landscape scars with approximately equivalent image signatures corresponding to the claimed route. A faint landscape scar (only readily visible with magnification) in the northwest quarter of Township 40 South Range 5 West Section 13 roughly

corresponds to the claimed route for approximately one-quarter mile. This scar may be a continuation of a route from the last point observed of the claimed route (northwest quarter of the southeast quarter of Township 40 South Range 5 West Section 14) but follows a different alignment from the path of the Bald Knoll route as claimed by Kane County from that point to the area of overlap and continues northeast where the claimed route turns sharply south. There are three other landscape scars that overlap very short portions (less than one-quarter mile each) of the claimed route, two in the Thompson Creek drainage in Township 40 South Range 5 West Section 13 and one in the southeast quarter of the northwest quarter and the northeast quarter of the southeast quarter of Township 40 South Range 4 West Section 18, but all of these appear to be of fluvial process origin rather than travel routes. Other than these, I did not find any landscape scars corresponding to the claimed route in Township 40 South Range 4 ½ West Sections 8, 17, and 18 and Township 40 South Range 5 West Section 13.

19. In contrast, other roads and trails indicated on the 1966 USGS topographic maps are visible on the photography.

Pursuant to 28 U.S.C. Section 1746, I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge, information, and belief.

Executed at Denver, Colorado on October 25, 2007.



Douglas C. Pflugh