

*Filed Nov. 4, 1985*

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In the  
**Supreme Court of the United States**  
October Term 1985

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No. 81, Original

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THE COMMONWEALTH OF KENTUCKY,  
*Plaintiff,*

v.

THE STATE OF INDIANA,  
*Defendant.*

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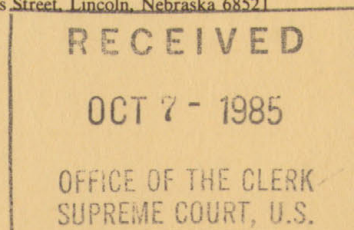
**REPORT OF SPECIAL MASTER**

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ROBERT VAN PELT,  
United States Senior District Judge  
Special Master

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JOE CHRISTENSEN, INC., 1540 Adams Street, Lincoln, Nebraska 68521





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## INTRODUCTION

It is probable, if this report is approved, that this litigation will be concluded during this term. A review of the proceedings leading to this report seems advisable. It also seems advisable to emphasize the relationship between this case, No. 81, Original, and No. 27, Original, *Ohio v. Kentucky*. See 410 U.S. 641 (1973) and 444 U.S. 335 (1980). Your Special Master was appointed to succeed The Honorable Phillip Foreman as Special Master in No. 27, Original, in 1978. My oath is dated July 28, 1978.

A motion for leave to file complaint in this action, No. 81, Original, together with the complaint and brief in support thereof, were tendered by the Commonwealth of Kentucky on November 7, 1978. The purpose of the tendered complaint was to determine the boundary between the Commonwealth and the State of Indiana. Objections were filed by Indiana and by Public Service Company of Indiana. The motion for leave to file the bill of complaint was granted on February 20, 1979. On April 20, 1979, an answer was filed by the State of Indiana. Your Special Master was appointed in this case May 14, 1979. 441 U.S. 941. His oath was filed May 21, 1979.

The motion of Public Service Company of Indiana for leave to intervene, which had been filed January 5, 1979, was referred to the Special Master at the time of his appointment. Your Special Master recommended denial of the motion to intervene, but recommended that permission to file briefs as a friend of the Court be granted. 444 U.S. 816 (1979). Thereafter, the recommended denial of intervention was approved by the Court and an Order was entered denying the motion to intervene, but granting leave to file a brief as *amicus curiae*. 445 U.S. 941 (March 24, 1980).

On November 28, 1979, your Special Master submitted a report in No. 81, Original, recommending that the Court

determine that the boundary between Kentucky and Indiana along the north side of the Ohio River is the low-water mark on the north side of the Ohio River as it existed in 1792 when Kentucky was admitted into the Union. The report also recommended that the parties be given a reasonable opportunity to agree upon the location of the 1792 boundary, and that your Special Master be authorized to hold hearings and take other necessary actions to determine the boundary if the parties were unable to reach an agreement. After the opinion of the Court was filed in No. 27, Original, Indiana moved in No. 81, Original, for summary adoption of the November 28, 1979, Report of the Special Master. It was the claim of Indiana that the decision in No. 27, Original, was binding as a precedent on the issue to be decided in this case. On March 3, 1980, the Court approved the Special Master's report and granted Indiana's Motion for Summary Adoption and for remand to your Special Master for the preparation of an appropriate form of decree. 445 U.S. 941 (1980).

In the meantime, your Special Master was holding hearings in No. 27, Original, as authorized in his appointment and he submitted a report dealing with the merits of the controversy which was received by the Court and ordered filed on October 1, 1979. By this Order (444 U.S. 816), exceptions and briefs were allowed. On June 14, 1979, an Order was entered setting the exceptions "for oral argument in due course." The case was thereafter scheduled for oral argument on December 3, 1979. An opinion authored by Mr. Justice Blackmun, in which Chief Justice Burger and Justices Brennan, Stewart, Marshall, and Stevens joined, was filed January 21, 1980. 444 U.S. 335. Justice Powell filed a dissenting opinion in which Justices White and Rehnquist joined. 444 U.S. 341. On March 17, 1980, Kentucky's motion for rehearing, which had been filed February 15, 1980, was denied.

Later a motion to intervene was filed by Dorothy Cole, et al., in both the Ohio and Indiana cases. 454 U.S. 1076 (1981). It was referred to your Special Master. 454 U.S. 1076. A report recommending denial was filed. *See* Special Master's Report Number Two of March 19, 1982. An Order was entered denying leave to intervene for Dorothy Cole, et al. in both No. 27, Original, and No. 81, Original. 456 U.S. 958 (1982), reh. den. 457 U.S. 1141 (1982).

Several miscellaneous Orders were entered by the Special Master and, after many delays, the parties agreed to a hearing of both No. 27, Original, and No. 81, Original, at the United States Courthouse in Cincinnati on July 14, 1981. *See* Filing No. 17 filed with the Special Master on January 30, 1981. This trial date was later changed by agreement and the cases were set for hearing beginning October 20, 1983. (*See* Filing No. 19 filed with the Special Master June 4, 1981.) The hearing was held at that time as shown by the transcript of the evidence, certified by the reporter under date of December 7, 1983, and filed with the Clerk of this Court as a part of this report.

It is the purpose of this report to recommend the exact location of the boundary line between the parties, to wit: The north shore of the Ohio River at low water mark as it flowed between Kentucky and Indiana in 1792, as nearly as it can now be determined. This boundary line is shown in red on Exhibits 1-49, inclusive. The latitude and longitude and state plane co-ordinates of the 7808 points so connected by the red line on Exhibits 1-49 are set forth in Exhibit 50.

## THE FACTS

Joint Exhibits 1 through 49, inclusive, being mylar sheets prepared by the United States Geological Survey, covering the Ohio River from the border between Indiana and Ohio to the border between the States of Illinois and Indiana



were received in evidence. This distance involves “around 350 miles.”

Also received in evidence is Joint Exhibit 50, which sets forth the latitude and longitude of 7808 points, constituting, when joined by a red ink line appearing upon the mylar sheets (Exhibits 1 through 49), the boundary between Kentucky and Indiana on the northerly and westerly side of the Ohio River as it existed in 1792 as nearly as it can now be ascertained. (*See* testimony of Donald C. Barnett, Assistant Chief of the Eastern Mapping Center, an entity of the National Mapping Division of the United States Geological Survey.)

There has also been received in evidence as Joint Exhibit 51 a stipulation of the parties which follows the form of Exhibit 31 received in No. 27, Original. The effect of it is to further authenticate Exhibits 1-49 and Exhibit 50. It is tendered to the Court with this report.

Mr. Barnett was fully identified as a witness in the trial in No. 27, Original, held on the same day as the trial in this case. The foundation for his testimony was laid in that case. The entire testimony filed by your Special Master with his report in No. 27, Original, by agreement of counsel, becomes a part of the record in this case. It was the subject of a report by your Special Master which was approved by the Court in No. 27, Original, as above set forth. A final decree was entered in that case establishing the boundary between the Commonwealth of Kentucky and the State of Ohio as charted on mylar maps similar to those in this case. — U.S. —, 53 USLW 3733, April 15, 1985; (correction 53 USLW 3824, May 21, 1985). An exhibit identified as Exhibit 30, marking the boundary points in a similar manner to Exhibit 50 in this case, was included as a part of the report in No. 27, Original. Paper copies of Exhibits 1-29, inclusive, and of Exhibit 30 are in the process of being filed in the counties in Kentucky and Ohio which border on

the Ohio River. Original mylar maps have been filed in the proper offices in each capitol.

Barnett testified that, in his opinion, the proposed line will be "the low water mark on the northerly and westerly side of the Ohio River as it existed in the year 1792 as nearly as it can now be ascertained." In addition to the above testimony of Mr. Barnett and the testimony which he and Petersen gave as part of the transcript of testimony in No. 27, Original, Indiana also called as a witness William Eckman Kreisle. Mr. Kreisle's testimony is included in the transcript of the evidence tendered to this Court with this report.

Mr. Kreisle holds an engineering degree from Purdue University; certificates from the University of Maryland and from Paris, France; and a Master's Degree from the University of Louisville. His memberships in professional societies; his lectures before engineering societies; the mapping projects in which he has been engaged; his work during his years of employment with the Corps of Engineers in the Louisville area; and matters concerning his research and cases in which he has participated, were all set forth as a part of his testimony.

This witness devised the idea which was used in this case and also in No. 27, Original, of a digitized line. At the time of his testimony in this case, Mr. Kreisle was no longer employed by the United States Army Corps of Engineers, but was associated with the Defense Mapping Agency in its Louisville office as a research cartographer. Mr. Kreisle testified as to his work on the Ohio River during the 17 years he was Chief of the Survey Branch with the Corps of Engineers in the Louisville area, a position he left in April of 1981. Since that time, he was employed by Indiana to investigate "the location of the 1792 low-water mark."

He tells of locating all original maps possible that the Corps had made on the river, including the 1866-67 Milner

Roberts maps, 1896-1906 series, the 1911-1914 series which was updated in 1928 after the dams were in, and the 1960-65 series. He also discusses earlier maps and surveys.

He testified that exhibits similar to Exhibits 1 through 29 and Exhibit 30 in No. 27, Original, would be prepared and completed. They are now tendered as Exhibits 1 through 49 and as Exhibit 50 and have been received in evidence by your Special Master. Kreisle testified that the low water mark on the northerly and westerly side of the Ohio River as it existed in the year 1792 as nearly as it can now be ascertained would be established by the line shown on these maps.

Mr. Kreisle gives an interesting account of the work of the joint commission of Ohio and Indiana in 1837 in establishing the common point between Indiana and Ohio, and the marking of two points with nine-foot stones weighing 5000 pounds apiece; how one of the monuments was buried five feet below the ground; that it had been set in 1837 and disappeared under silt, with the result that in 1855 it was 10 feet under ground, but by 1930 it had washed out again. Later it was again covered with silt. Using these points, and electronic distance measuring equipment, the engineers, having cut a five-foot line through weeds that were approximately 12 feet high, came to the point where the marker should be if the measurements were accurate, and dug down and found that they had hit the rock right "on the nose." The recital of these events is only important because it shows the skill of these experts and their ability to read early surveys and locate monuments which were established over 100 years ago. Your Special Master feels, as he did when hearing the testimony in No. 27, Original, that we have been fortunate to have experts of the ability of these who testified in these cases and that they are establishing a boundary line that can be located in the future by any careful surveyor who knows how to determine latitude and longitude accurately.

The experts also discuss five adjustments they made by reason of islands shown on early maps, but which later became attached to the Indiana portion of land on the river. In these five different places this 1792 boundary is not out into the water of the Ohio River, but is on dry land. One of these five sites, Green River Island, was determined to be part of Kentucky in *Indiana v. Kentucky*, 136 U.S. 395 (1890), in a decision written by Justice Field.

The Court may recall from my original report suggesting the boundary location, which the Court adopted, that John Marshall, as Chief Justice, in *Handly's Lessee v. Anthony, et al.*, 18 U.S. 374 (1820), determined the Kentucky/Indiana boundary for a distance which may vary from nine miles to fifteen or twenty miles and concluded as shown by the head mark "The boundary of the state of Kentucky extends only to the low water mark on the western or northwestern side of the River Ohio." *Id.* at 374.

The second question decided by this Court in *Handly's Lessee* was "whether Kentucky was bounded on the west and north-west by the low-water mark of the river, or at its middle state? or, in other words, whether the state of Indiana extends to low-water mark, or stops at the line reached by the river when at its medium height?" *Id.* at 378.

John Marshall had represented Kentucky when Virginia ceded to Kentucky the lands here involved. It will be clear to anyone reading his opinion in *Handly's Lessee* that he knew the intentions of both Virginia and Kentucky. One hundred sixty-five years later we are now determining, as nearly as it can now be done, the exact location of the intended boundary.

There are four exhibits identified as Indiana exhibits in this case in addition to those received in No. 27, Original. They are Indiana Exhibit 1, being an early survey showing Flint Island; Indiana Exhibit 2, showing the river from mile posts 679 to 684; Indiana Exhibit 3 is a mylar sheet showing

Corps of Engineers' Map No. 36 of the 1896-1906 variety. Since we now have mylar sheets for the entire boundary line, this exhibit is beneficial only to show the sort of a map that was used by the Corps as its base map. Indiana Exhibit 4 is the report of an 1821 Survey of the River from Louisville to the Mississippi made by the United States Corps of Engineers.

Your Special Master concludes from the evidence that Exhibits 1 through 49 each represent the best that can be done at this time under the present development of the mapping art and that the determination of the low water mark boundary shown on the exhibits is as accurate a determination as can now be ascertained. These 49 exhibits mark the line described on Exhibit 50.

As a part of this report, a decree is tendered following that proposed in No. 27, Original. In it, it is suggested that copies of the Court's decree and the Special Master's report, including Joint Exhibit 50, shall be filed with the Clerk of this Court, the Secretary of State of the Commonwealth of Kentucky, and with the Archives Division of the Indiana Commission on Public Records of Indiana. Paper prints of Joint Exhibits 1 through 49, promptly when they become available, and a copy of Exhibit 50, will be filed in the Commonwealth of Kentucky in the Office of the County Clerk in each of the following counties: Union, Henderson, Daviess, Hancock, Breckinridge, Meade, Hardin, Jefferson, Oldham, Trimble, Carroll, Gallatin, and Boone; and in the State of Indiana in the office of the County Recorder of each of the following counties: Posey, Vanderburgh, Warrick, Spencer, Perry, Crawford, Harrison, Floyd, Clark, Jefferson, Switzerland, Ohio, and Dearborn.

In order that future historians and surveyors will understand the evidence on which this report is based and upon which it is proposed that this Court enter its decree, I refer to my report in No. 27, Original, so far as applicable to this

case for information relating to the preparation and accuracy of the joint exhibits offered herein.

Exhibits 1 through 49, inclusive, which are maps prepared by the United States Geological Survey, are joint exhibits of Indiana and Kentucky. These exhibits were prepared on mylar sheets, a stable based material which has an advantage over paper in that it is not as subject to stretching or shrinking and thus it better assures the accuracy of the map data over long periods of time.

These 49 exhibits cover every foot of the Ohio River from the Indiana/Ohio/Kentucky border, downstream to the border between Indiana and Illinois. The distance is approximately 350 miles. Each of Exhibits 1 to 49, inclusive, is based upon a separate quadrangle map prepared as a part of the mapping of the entire continental United States. To map the entire contiguous 48 states requires approximately 55,000 such maps. The United States Geological Survey in Reston, Virginia, is known as the Eastern Mapping Center, which is an entity under the National Mapping Division. It employs approximately 400 people whose mission is to map and revise maps for the 22 eastern states, which generally includes all states east of the Mississippi River, together with Puerto Rico and the Virgin Islands. The division has 30 people devoted solely to collecting boundary information and plotting that information on topographic maps. This is in addition to the work of the division's field force.

These quadrangle maps are known as 24,000 scale maps, each covering 7.5 minutes of latitude and 7.5 minutes of longitude. The 1:24,000 scale refers in map making to a map on which one inch on the map equals 2,000 feet on the ground. The width of the red line on Exhibits 1-29, inclusive, which in ten-thousandths of an inch, equates to 20 feet on a 1:24,000 scale map.

This red line on Exhibits 1 through 49, inclusive, marks 7808 points along the Ohio River, representing the low

water mark on the northerly side of the Ohio River as it existed in the year 1792 as nearly as it can now be determined. In some places the so-called northerly side is also the westerly side of the Ohio River. On Exhibit 50 is found not only the latitude and longitude of each of the 7808 points shown on Exhibits 1 through 49, but the exhibit also correlates each of the 7808 latitude and longitude points with the state plane coordinates systems of Kentucky and Indiana. The state plane coordinate systems are indexed and can be found on Exhibit 50 as the Indiana West Zone and as the Kentucky South Zone. Your Special Master believes that Exhibit 50, when read with Exhibits 1 through 49, will answer any questions that can hereafter arise as to the location of the joint boundary between the State and the Commonwealth.

Exhibits 1 through 49 have been prepared in keeping with the national mapping standards. The coordinates, which are numbered consecutively, always proceed down the river. Thus, point 1 on Exhibit 50 begins at the point common to the States of Ohio, Indiana and the Commonwealth of Kentucky and continues downstream through point 7808, the point common to the boundary lines of the States of Indiana, Illinois, and the Commonwealth of Kentucky. Joint Exhibit 50 precisely locates, by geodetic coordinates, the proposed angle points along the boundary line. It gives the geographic or geodetic coordinates. The experts appear to use these terms interchangeably. Exhibit 50 represents the approximation of the low water mark on the northerly side of the Ohio River in 1792 as it flows between Kentucky and Indiana as nearly as can be ascertained at this time. The red line shown on Joint Exhibits 1 through 49, as is noted above, depicts the line created by joining the 7808 points of latitude and longitude set forth in Joint Exhibit 50.

I am pleased to be able to recommend to you this boundary line as is shown in red on Exhibits 1 through 49, inclusive.

### RECOMMENDATION

Your Special Master therefore requests approval of this report for the establishment of the boundary line between the State of Indiana and the Commonwealth of Kentucky as referred to me as your Special Master. Your Special Master requests that the Court adopt the latitude and longitude of 7808 points along the Ohio River, together with the correlation of the latitude and longitude points with the State plane coordinate systems of Indiana and Kentucky, all as set forth on Exhibit 50 as the 1792 low water mark boundary between the State of Indiana and the Commonwealth of Kentucky. Your Special Master requests that the tendered decree be adopted, approved, and filed as recommended, together with copies of Joint Exhibits 1-50, inclusive.

That upon approval of this report and the making of the filings as ordered herein by the Court, that your Special Master be discharged from further duties in No. 81, Original, upon filing a financial report, approved by the parties, showing receipt and disbursement of all monies paid to him by the parties and distribution of any balance remaining in his hands after payment of the expenditures approved by the parties to the State of Indiana and to the Commonwealth of Kentucky in the proportion contributed by each party to such fund. That the Order further provide that your Special Master is not to receive any payment or other recompense for his services herein other than the payments



for travel, hotel expenses and similar items as approved by the parties.

Respectfully submitted,

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ROBERT VAN PELT  
Special Master  
566 Federal Building  
100 Centennial Mall North  
Lincoln, Nebraska 68508

September 30, 1985.

**SUPREME COURT OF THE UNITED STATES  
KENTUCKY v. INDIANA**

No. 81, Original      Decided \_\_\_\_\_, 1985

**DECREE**

It is ordered, adjudged and decreed that:

1. The boundary line between the State of Indiana and the Commonwealth of Kentucky is fixed as geodetically described in Joint Exhibit 50 to the Special Master's Report filed with this Court on \_\_\_\_\_, 1985. Joint Exhibit 50 is incorporated by reference herein.

2. Copies of this Decree, and the Special Master's Report (including Joint Exhibits 1-50, inclusive) shall be filed with the Clerk of this Court, the Archives Division of the Indiana Commission on Public Records of Indiana; and the Secretary of State of the Commonwealth of Kentucky.

3. Copies of this Decree, and the Special Master's Report (including Joint Exhibit 50 and paper prints of Joint Exhibits 1-49, inclusive, once they become available) shall be filed with the Office of the County Recorder in each of the following Indiana counties: the counties of Posey, Vanderburgh, Warrick, Spencer, Perry, Crawford, Harrison, Floyd, Clark, Jefferson, Switzerland, Ohio, and Dearborn; and with the County Clerk's Office in the Commonwealth of Kentucky in each of the following Kentucky counties: the counties of Union, Henderson, Daviess, Hancock, Breckinridge, Meade, Hardin, Jefferson, Oldham, Trimble, Carroll, Gallatin, and Boone.

4. The State of Indiana and the Commonwealth of Kentucky each have concurrent jurisdiction over the Ohio River.

5. The costs of this proceeding shall be divided between the parties as recommended by the Special Master.

# INDEX OF EVIDENCE, INCLUDING EXHIBITS, ETC.

## Joint Exhibits

1	Lawrenceburg Quadrangle Map	IN-KY-OH
2	Aurora Quadrangle Map	IN-KY
3	Rising Sun Quadrangle Map	IN-KY
4	Aberdeen Quadrangle Map	IN-KY
5	Patriot Quadrangle Map	IN-KY
6	Florence Quadrangle Map	IN-KY
7	Vevay North Quadrangle Map	IN-KY
8	Vevay South Quadrangle Map	IN-KY
9	Carrollton Quadrangle Map	KY-IN
10	Madison East Quadrangle Map	KY-IN
11	Madison West Quadrangle Map	IN-KY
12	Bethlehem Quadrangle Map	IN-KY
13	La Grange Quadrangle Map	KY-IN
14	Owen Quadrangle Map	IN-KY
15	Charlestown Quadrangle Map	IN-KY
16	Jeffersonville Quadrangle Map	IN-KY
17	New Albany Quadrangle Map	IN-KY
18	Louisville West Quadrangle Map	KY-IN
19	Lanesville Quadrangle Map	IN-KY
20	Kosmosdale Quadrangle Map	KY-IN
21	Fort Knox Quadrangle Map	KY
22	Rock Haven Quadrangle Map	KY-IN
23	Laconia Quadrangle Map	IN-KY
24	Mauckport Quadrangle Map	IN-KY
25	New Amsterdam Quadrangle Map	KY-IN
26	Leavenworth Quadrangle Map	IN-KY
27	Beechwood Quadrangle Map	IN-KY
28	Alton Quadrangle Map	KY-IN
29	Derby Quadrangle Map	IN-KY
30	Rome Quadrangle Map	IN-KY
31	Mattingly Quadrangle Map	KY-IN
32	Cloverport Quadrangle Map	KY-IN
33	Cannelton Quadrangle Map	IN-KY
34	Tell City Quadrangle Map	IN-KY
35	Lewisport Quadrangle Map	KY-IN
36	Rockport Quadrangle Map	IN-KY
37	Owensboro East Quadrangle Map	KY-IN
38	Owensboro West Quadrangle Map	KY-IN
39	Reed Quadrangle Map	KY-IN
40	Yankeetown Quadrangle Map	IN-KY

41	Newburgh Quadrangle Map	IN-KY
42	Evansville South Quadrangle Map	IN-KY
43	West Franklin Quadrangle Map	IN-KY
44	Henderson Quadrangle Map	KY-IN
45	Wilson Quadrangle Map	KY-IN
46	Caborn Quadrangle Map	IN-KY
47	Mount Vernon Quadrangle Map	IN-KY
48	Uniontown Quadrangle Map	KY-IN
49	Wabash Island Quadrangle Map	KY-IL-IN
50	Printout showing geographic coordinate systems and latitude and longitude at 7808 points and State plane coordinate systems for Indiana West Zone and Kentucky South Zone for the same 7808 stations.	
51	Stipulation of parties as to Exhibits 1 through 50.	

Indiana Exhibits

- 1 1866-67 Survey showing Flint Island
- 2 Map showing the Ohio River from mile posts 679 to 684
- 3 Mylar sheet showing Corps of Engineers' Map No. 36 of the 1896-1906 variety
- 4 1821 Survey of Ohio River from Louisville, Kentucky to Mississippi River





