

other manner, and just as he might procure a discharge of any judgment against him, the amount of which had been collected by suit thereon in another State."

What has been said sufficiently discloses that the Federal questions raised in the case were so plainly devoid of merit as to afford no basis for a review in this court.

Writ of error dismissed.

STATE OF GEORGIA *v.* TENNESSEE COPPER
COMPANY AND DUCKTOWN SULPHUR, COP-
PER & IRON COMPANY, LIMITED.

MOTION TO ENTER A FINAL DECREE AGAINST THE DUCK-
TOWN SULPHUR, COPPER & IRON COMPANY, LIMITED.

No. 1, Original. Argued April 6, 7, 1915.—Decided May 10, 1915.

The defendant Ducktown Sulphur Copper & Iron Company and the State of Georgia not having agreed as to the method of operation of the furnaces of the former and additional testimony having been taken relating to alleged changed conditions since 1907 and it appearing that the furnaces are emitting fumes in excess of what is proper *held* that:

A final decree against the Ducktown Company be now entered restraining it from operating its plant except upon the terms specified therein; the cause to be retained for further action and either side may present a decree in conformity with this decision. Final decree ordered in 206 U. S. 230, against defendant Ducktown Company.

THE facts, which involve questions of nuisance arising from fumes from smelting ore and the power of the court to enjoin the same at the instance of a State, are stated in the opinion.

Mr. Warren Grice and *Mr. J. A. Drake*, with whom *Mr. Lamar Hill* was on the brief, for complainant.

237 U. S.

Opinion of the Court.

Mr. J. A. Fowler and *Mr. W. B. Miller* for defendant Ducktown Company.

MR. JUSTICE McREYNOLDS delivered the opinion of the court.

Both defendants are smelting copper ores in Polk County, East Tennessee, near the Georgia line. The works of the Tennessee Company, much the larger of the two, are situated within half a mile of the line; those of the Ducktown Company are some two and one-half miles away. The ores contain a very large amount of sulphur—around 20%—and in the process of smelting great quantities of sulphur dioxide are formed; if allowed to escape into the air this becomes sulphurous acid, a poisonous gas destructive of plant life.

In October, 1905, the State of Georgia began this Original proceeding alleging that defendants permitted discharge from their works of noxious gases which being carried by air currents ultimately settled upon its territory and destroyed the vegetation, and asking for appropriate relief. The case was heard on the merits and the issues determined in complainant's favor, May, 1907. We then said: "If the State of Georgia adheres to its determination, there is no alternative to issuing an injunction, after allowing a reasonable time to the defendants to complete the structures that they now are building, and the efforts that they are making, to stop the fumes. The plaintiff may submit a form of decree on the coming in of this court in October next." 206 U. S. 230, 239.

Hope was entertained that some practical method of subduing the noxious fumes could be devised and by consent the time for entering a final decree was enlarged. Both companies installed purifying devices. The Tennessee Company and the State finally entered into a stipula-

tion whereby the former undertook annually to supply a fund to compensate those injured by fumes from its works, to conduct its plant subject to inspection in specified ways, and between April 10th and October 1st not to "operate more green ore furnaces than it finds necessary to permit of operating its sulphuric acid plant at its normal full capacity." The State agreed to refrain from asking an injunction prior to October, 1916, if the stipulation was fully observed. The Ducktown Company and the State were unable to agree, and in February, 1914, the latter moved for a decree according a perpetual injunction. Consideration of the matter was postponed upon representation that conditions had materially changed since 1907, and leave was granted to present additional testimony "to relate solely to the changed conditions, if any, which may have arisen since the case was here decided." A mass of conflicting evidence has been submitted for our consideration.

The Ducktown Company has spent large sums—\$600,000 and more—since the former opinion in constructing purifying works (acid plant); and a much smaller proportion of the sulphur contained in the ores now escapes into the air as sulphur dioxide—possibly only $41\frac{1}{2}\%$ as against $85\frac{1}{2}\%$ under former conditions. Similar improvements have been installed by the Tennessee Company at great expense, but we are without adequate information concerning the effect produced by them. As it asked and was granted opportunity to show material changes the burden is upon the Ducktown Company. A full and complete disclosure of the improvements installed by it and the results continuously obtained has not been presented.

Counsel maintain that escaping sulphur fumes now produce no substantial damage in Georgia, and further that if any such damage is being done the Tennessee Company alone is responsible therefor. We think the

proof fails to support either branch of the defense, and the State should have a decree adequate to diminish materially the present probability of damage to its citizens.

The evidence does not disclose with accuracy the volume or true character of the fumes which are being given off daily from the works of either company. Averages may not be relied on with confidence since improper operations for a single week or day might destroy vegetation over a large area, while the emission of great quantities of fumes during a short period would affect but slightly the average for a month or year.

It appears that in 1913 the total ores smelted by the Ducktown Company amounted to 152,249 tons, or 304,498,000 pounds—20% sulphur; total matte shipped was 12,537,000 pounds—about 4% of the ore; the total sulphur in the smelted ores not accounted for and which escaped into the air in the form of sulphur dioxide was 13,102 tons, or 26,204,000 pounds—over two pounds of sulphur for each pound of matte and an average of more than 35 tons per day.

During July, 1913, the total matte shipped (approximately the production) was 846,000 pounds—more was shipped in June and less in August. The July production was thus approximately 7% of the year's total. The sulphur in the fumes generated in connection with the production for this month, not redeemed by the acid plant and emitted into the air, may be fairly estimated as not less than 7% of 13,102 or 917 tons—substantially 30 tons per day. This amount produced harmful results and must be diminished.

It is impossible from the record to ascertain with certainty the reduction in the sulphur content of emitted gases necessary to render the territory of Georgia immune from injury therefrom; but adequate relief, we are disposed to think, will follow a decree restraining the Duck-

town Company from continuing to operate its plant otherwise than upon the terms and conditions following: (1) It shall keep daily records showing fully and in detail the course and result of the operations. (2) A competent inspector to be appointed by this court shall have access to all the books and records of the Company, shall make frequent careful observations of the conditions—at least once each fortnight—during the next six months, and at the end of that time shall make full report with appropriate recommendations. An adequate sum to cover the necessary costs and expenses must be deposited with the Clerk by the Company. (3) It shall not permit the escape into the air of fumes carrying more than 45% of the sulphur contained in the green ore subjected to smelting. (4) It shall not permit escape into the air of gases the total sulphur content of which shall exceed 20 tons during one day from April 10th to October 1st of each year or exceed 40 tons in one day during any other season.

The cause will be retained for further action and either party may apply hereafter for appropriate relief.

Within ten days either side may present a decree in conformity herewith, together with such suggestions as seem desirable.

MR. JUSTICE HUGHES, dissenting: I do not think that the evidence justifies the decree limiting production as stated.

THE CHIEF JUSTICE and MR. JUSTICE HOLMES join in this dissent.

See page 678, *post*, for decree entered in conformity with this opinion.