

Clearly aware that, in this case, the tide cannot be measured, the Court, ostensibly relying on *Luttet*, equates measuring high tide with measuring daily water levels in the Laguna. But by doing so, the Court strips *Luttet* of any legitimate foundation. *Luttet* did not decide that measuring daily water levels in the Laguna is the same thing as measuring daily tide levels, but rather it assumed that those water levels reflected tide. All parties agree that *Luttet* requires computing water levels over an 18.6-year period. What the Court ignores is that 18.6 years is the length of an entire tidal cycle.² Thus, *Luttet* necessarily requires the water levels being measured to be tidal levels. And here, tide cannot be measured.

The Court tries to bridge this fault line by noting that the Court in *Luttet* used the word “water” when it concluded that the mean higher high tide line in the Laguna could be determined. And because the Laguna’s conditions here and in *Luttet* are essentially the same, the Court accordingly concludes that mean higher high tide can be determined in this case as a matter of law. But the Court’s bridge crumbles in the absence of a fact the Court assumed in *Luttet* – that the tide could be measured. All parties in *Luttet* assumed that some tidal movement could be measured. Of course, that assumption is no longer viable because we now have the undisputed fact that, as concluded by the federal government, the tide, at least in this part of the Laguna Madre, cannot be measured.

To avoid the impossibility of finding the mean higher high tide, the Court slides into asserting that what *Luttet* really meant is that any water level could be measured against the 18.6-year tidal cycle to determine the water levels’ mean. But that is simply junk science. If one is not measuring the tide, then

² *Id.* at 192 (opinion on rehearing).

extrapolating whatever water measurement you have over the 18.6-year tidal cycle simply produces a number. It doesn't produce the mean for higher high tide. Regardless, the Court obviously sees the problem because rather than render judgment on any tide line, it directs that judgment be rendered for the Foundation on a line surveyed by Matt Claunch and Bill Lothrop because that line is somewhere above the mean higher high tide line. Hardly a jurisprudentially sound decision. One would be hard pressed to find any case in Texas jurisprudence in which the court awarded judgment to a party on what the party was willing to take absent the party proving it was entitled to take at least something. Furthermore, the Claunch/Lothrop line does not purport to locate the mean daily higher high water level, let alone the mean tide line. Rather, it locates a line one foot above the National Geodetic Vertical Datum of 1929 (Datum Plane), which is a fixed reference adopted as a standard geodetic datum for elevations determined by leveling.³

All the parties to this litigation and even the Court knows that no one can determine the mean tide line and use it to locate the Laguna Madre's west margin. And while the Court ignores this scientific conundrum, in the end, it obviously concludes high water measurements cannot be used. For with no legal or evidentiary support, the Court instructs the trial court to enter judgment for the Foundation using the Datum Plane plus one foot line.

But the Court need not ignore the record and apply a tidal formula to non-tidal data to determine the proper boundary in this case. We have two hundred years of history about the west margin of the

³ See CTR. FOR OPERATIONAL PRODS. & SERVS., U.S. DEP'T OF COMMERCE, TIDE AND CURRENT GLOSSARY 17 (1999).

Laguna Madre to guide us. And establishing the boundary using historical evidence is fully supported by pre-*Luttet* case law. Moreover, the State produced evidence supporting the jury finding that the State's proposed boundary, which was based on physical evidence and historical documents, marks the west margin with reasonable accuracy. Accordingly, I would affirm the court of appeals' judgment in favor of the State.

I. THE PROBLEM WITH *LUTTES*

The problem with insisting *Luttet*, irrespective of the facts, controls this case is that the Court forces a round peg into a square hole. *Luttet* applies the civil law. And the civil law locates seashores using mean higher high tide. The Court assumes, when it concludes that *Luttet* permits merely high water to be measured and not high tide, that a mean can be calculated. But the formula we have for calculating this mean requires using the 18.6-year tidal cycle. Thus, it is the tide that must be measured and not simply water levels.

As *Luttet* established, when grantors of civil-law littoral tracts used the word "shore," they intended that it be the area regularly covered and uncovered by the sea over a long period of time, that the upper level of the shore be the shoreline, and that the shoreline be located at the line of mean higher high tide.⁴ In selecting mean higher high tide as the shoreline measurement, the *Luttet* Court explained that "tide" means the regular and predictable perpendicular daily rise (or rises) and fall (or falls) of the waters as a result of astronomical forces, to wit, the gravitational pull of the sun and moon (mostly the latter) upon

⁴ See *Luttet*, 324 S.W.2d at 191-92.

the earth.”⁵ That the Court in *Luttet* intended the tide be measured is clear from the Court’s specification that daily tide gauge measurements must be correlated to an 18.6-year tidal epoch, in which all the astronomic forces in the tidal cycle appear.⁶ This intent is also clear from the Court’s definition of “tide,” quoted above, which focuses on the predictable rise and fall of the waters based on astronomic factors. And it is clear from the Court’s reliance on the United States Supreme Court’s reasoning in *Borax Consolidated v. Los Angeles*.⁷ In *Borax*, the Supreme Court expressly approved the methodology of the U.S. Coast and Geodetic Survey (a precursor to today’s National Oceanic and Atmospheric Administration, or NOAA) for calculating mean high tide.⁸

Although acknowledging that water levels in the Laguna Madre are also strongly affected by nonastronomical forces such as wind and weather, the Court in *Luttet* clearly assumed that the tide could still be measured.⁹ In fact, the Court went so far as to assume that advancements in science would make measuring the tide even easier.¹⁰ But science didn’t get to the answer the Court expected. Since *Luttet* was decided, NOAA has concluded that the tide cannot be measured in areas of the Laguna Madre, including along its disputed west margin. And the Foundation offered no evidence otherwise. Rather, the

⁵ *Id.* at 173.

⁶ *Id.* at 174, 187.

⁷ 296 U.S. 10 (1935).

⁸ *Id.* at 26.

⁹ *Luttet*, 324 S.W.2d at 192.

¹⁰ *Id.*

only evidence is a report from NOAA, published in 1995, which analyzes the Laguna Madre's tide characteristics and concludes that the mean tide cannot be accurately calculated along the disputed property.¹¹ According to NOAA, other forces acting on the water in the Laguna, primarily meteorological, mask the astronomic tide. This, according to NOAA, makes it impossible to determine whether water level measurements are truly tidal. That's because, as NOAA explains, it cannot tabulate tide levels consistently because water levels derived from meteorological forces are not predictably repeated.

The significance of this conclusion is that, in order to correlate daily water measurements to the 18.6-year tidal cycle to produce the mean water level, those measurements must be compared to a long-term control station, where a tide gauge has been in continuous operation for a full 18.6-year tidal cycle. NOAA cautions that this comparison cannot be done properly if the measurements taken from the short-term gauge are not tidal ones because those measurements will not be similar to the measurements from the long-term gauge. NOAA has therefore classified parts of the Laguna, particularly in the disputed area, as nontidal.¹²

The Court dismisses this undisputed evidence by concluding that determining the mean daily high water level is not dependent on NOAA or its policies, which post-date the land grants by more than a century. But the Court's argument obfuscates the issue. NOAA simply and irrefutably states the fact that

¹¹ See STEPHEN K. GILL, JAMES R. HUBBARD & GARY DINGLE, U.S. DEP'T OF COMMERCE, TIDAL CHARACTERISTICS AND DATUMS OF LAGUNA MADRE, TEXAS 30, 49 (1995).

¹² *Id.* at 53.

the tide along the disputed boundary cannot be measured. And tide is precisely what *Luttet* states the civil law requires to be measured for determining shorelines.

The Court apparently buys the Foundation's argument that NOAA's conclusion that the Laguna Madre in the disputed area is nontidal is irrelevant because under *Luttet* it is simply the daily highest water level that is to be averaged, regardless of the cause, and not the daily highest tide. Pointing out that *Luttet* recognized that the water in the Laguna is strongly influenced by nontidal forces, the Foundation concludes that any tide gauge measurements will do. But this argument robs *Luttet* of its scientific underpinnings. Because *Luttet* required the water measurements to ultimately reflect the 18.6-year astronomic tidal cycle, the underlying measurements themselves must necessarily reflect astronomic tidal highs. Otherwise, the 18.6-year time frame is meaningless. Put another way, if it is not the tide that one is measuring, then factoring that measurement over the 18.6-year tidal cycle cannot produce the mean of the higher high tide.

Cavalierly, the Court concludes that the jury's failure to find that the mean higher high tide line could be determined is "superfluous," because the property's boundary can be located as a matter of law at the Claunch/Lothrop line, which in fact was the only line the Foundation sponsored at trial. But the Claunch/Lothrop line is simply a line one foot above the Datum Plane. A line one foot above the Datum Plane indisputably does not accurately represent the mean higher high tide line. Despite the Court's insistence that *Luttet* controls the outcome of this case, it too must have concluded that the disputed property's boundary could not be determined using the civil law's mean higher high tide line or even the mean of some other water line, for the Court does not actually use either line to locate the boundary.

The Court attempts to divert attention from its gap-filled reasoning by pointing out that the Foundation's tide expert, Dr. Flick, evaluated high water measurements at various locations throughout the Laguna. But Dr. Flick's evaluations were not the basis of the Claunch/Lothrop line, which had already been surveyed. And the Claunch/Lothrop line was not based on the mean of the higher high tide. It is telling that the Foundation did not rely on Dr. Flick or anyone else to prove the actual location of the mean tide line, relying only on the Claunch/Lothrop line.

Undaunted by this failure in proof, the Court concludes that the Claunch/Lothrop line must mark the Laguna's west margin along the disputed property because the State has conceded that that line is at or above mean daily high water levels. Even if the State made that concession, that fact does not establish the missing proof – that the Foundation's suggested boundary line is the mean higher high tide line. Everyone, including the Foundation, knows it is not.

To be sure, the Foundation maintains that, despite geophysical reality and assuming *Luttet* doesn't require tide to be the boundary's measure, the line of mean higher high water can be calculated here, and the Claunch/Lothrop line is at or above that line. The Foundation notes that Dr. Flick testified that he calculated mean higher high water for the disputed area. But Flick admitted that he did not use NOAA's methodology in performing his calculation, and that in fact he used a methodology he himself had never used before. Essentially, Dr. Flick used non-tidal measurements, factored them over the 18.6-year tidal cycle, and declared he had found the mean. He may have found a number, but it clearly was not the mean of any water level contemplated by the Court in *Luttet*.

According to the civil law and *Luttet*, the boundaries of Texas seashore properties are at the mean of the higher high tide. *Luttet* does not permit using a line at the Datum Plane plus one foot, because that is not what the civil law requires. And *Luttet* certainly doesn't require establishing a boundary at a line that can't be found. True, as the Court says, the jury found that the Claunch/Lothrop line is at or above the mean higher high tide line of the Laguna Madre (although I don't know how, as there is no evidence of this line). But how does that help the Foundation? All the Foundation proved is that its boundary line was not measured by the mean of the higher high tide required by the civil law and *Luttet*. There is no basis in law or in fact for the Court's decision to locate the property's boundary at the Claunch/Lothrop line.

The Court erroneously suggests that I would accept the Foundation's "position" but for NOAA's conclusion that tide in the disputed area of the Laguna Madre cannot be measured.¹³ That suggestion results from the Court being confused by its own reasoning. The Foundation's "position" is that *any* high water level can be measured to produce a high water level mean, which according to the Foundation, is all that *Luttet* requires. That's the position the Court buys. I don't. The civil law requires the shoreline to be measured by the mean higher high tide, not just any water level. *Luttet* doesn't hold otherwise.

Further, as I've said, answering the question of law, whether Texas shorelines are measured by the mean higher high tide, does not answer the question of fact, whether the mean higher high tide in this case can be measured. It is not just the Foundation's "position" that fails, but its proof as well. That failure, the Court ignores. I don't. The Claunch/Lothrop line, which is the only boundary line the Foundation

¹³ ___ S.W.3d ___.

proffered and which the Court today imposes, reflects no mean of any water level at all. So much for *Luttet* controlling this case. Furthermore, there is a reason the Foundation offered no evidence of the mean higher high tide line. It can't be found. Quite simply, as NOAA's report concludes, no one can measure the tide in this area of the Laguna.

I suspect the reason the Court refuses to confront the scientific problem presented in this case is because the Court concludes that *Luttet* *has* to apply. *Luttet* dealt with property along the west margin of the lower Laguna Madre, and the Court has fixated on the notion that because some of the characteristics of the surrounding property in this case are similar to the characteristics of the surrounding property involved in *Luttet*, the result in this case must be identical. The Court is just wrong.

The difference between *Luttet* and this case is that we now know based on NOAA's work that the water movement in this area of the Laguna is non-tidal. Thus, we also know that the known formula for determining the mean of higher high tide, which requires factoring the measurements over the 18.6-year tidal cycle, cannot be applied. As a result, we cannot determine this water level's mean.

Therefore, despite the Court's insistence to the contrary, *Luttet* and the civil-law rule it identifies simply cannot control the result in this case. In the end, the Court agrees with me, for it locates the property's boundary at the Datum Plane plus one foot line, not the mean water level it claims can be calculated.

II. LOCATING THE WEST MARGIN OF THE LAGUNA MADRE

If there is no mean higher high tide line to determine the boundary of a civil-law grant, then how do we resolve this boundary dispute? We return to first principles. The appropriate method for locating a

boundary is a legal question for the court.¹⁴ And in locating a boundary, the overriding goal is to follow the grantor's intent.¹⁵ Further, civil-law cases decided before *Luttes* considered historical evidence substantially contemporaneous with the grants in determining a specific boundary line on the ground. Indeed, in *Cavazos v. Trevino*, the Court recognized the importance of such evidence:

The practical interpretation which parties interested have by their conduct given to a written instrument, in cases of an ancient grant of a large body of land, asked for and granted by general description, is always admitted as among the very best tests of the intention of the instrument.

In construing such a grant, the circumstances attendant, at the time it was made, are competent evidence for the purpose of placing the court in the same situation, and giving it the same advantages for construing the papers, which were possessed by the actors themselves.¹⁶

Accordingly, historical evidence is appropriate to determine the west margin of the Laguna Madre in this civil-law grant because the civil-law rule for determining seashores cannot be used.

Here, the State's expert, Darrell Shine, correctly examined the historical evidence to determine the location of the west margin of the Laguna Madre that the original grantors intended. Further, the jury found that the Shine line marks the margin with reasonable accuracy. And there is evidence supporting that finding.

Not only was it undisputed, but experts for both sides testified that based on the original surveys and maps and photographs of the area from the time of the grants to the present, the area's physical

¹⁴ See *Brainard v. State*, 12 S.W.3d 6, 14 (Tex. 1999).

¹⁵ *Wheeler v. Stanolind Oil & Gas Co.*, 252 S.W.2d 149, 152 (Tex. 1952).

¹⁶ 35 Tex. 133, 163 (1872) (citing *Cavazos v. Trevino*, 73 U.S. 773, 784-85 (1867)).

characteristics have not materially changed since the time of the grants – two hundred years. As well, the historical evidence shows that the grantors intended the bluff or vegetation line to mark the west margin of the Laguna Madre, making it the eastern boundary of the two grants at issue — the Big Baretta and the Little Baretta. And the Shine line is based largely on this historical evidence.

Shine reviewed the original grants, prior surveys, an early patent for portions of the disputed property, historical photographs, prior court cases, and information from NOAA. He overlaid prior surveys on aerial photographs of the disputed area and observed that the shoreline had not changed noticeably since the date of the earliest surveys, despite the construction of the Intracoastal Waterway in the 1940s.

Furthermore, in 1882, J.J. Cocke surveyed 186 sections of the Big Barreta to enable the State to locate railroad company certificates in the area. The survey did not include the disputed area as a part of the proposed railroad sections, but instead treated it as a part of the bed of the Laguna Madre. In 1902, the State sued some of the Foundation’s predecessors-in-interest, claiming the area as unpatented State land. Although the original grant had been lost, the court held that the defendants proved that the grant was issued, and its judgment identified the eastern boundary of the grant as the Laguna Madre’s west margin. The court ordered a survey of the area to establish the boundary for issuance of a patent. That judgment was affirmed in *State v. Spohn*.¹⁷ After the *Spohn* judgment, F.M. Maddox surveyed the Big Barreta

¹⁷ 83 S.W. 1135, 1135 (Tex. Civ. App. — 1904, writ ref’d).

grant, and a patent was issued on the Maddox field notes in 1907. Maddox's survey generally conformed to the Cocke survey. Both surveys confirm that the Big Barreta grant did not include the disputed property.

Also in evidence were the original grants and surveys of the Little Barreta. The Little Barreta was originally surveyed by Domingo de la Fuente in 1834. In 1879, Cocke made a confirmation survey of the Little Barreta grant. The meander lines of the Cocke survey conform closely to de la Fuente's diagrammatic sketch.

Physical evidence on the ground also supports the Shine line. George Cole, an expert in surveying water boundaries, testified for the State. He explained that, to find a water boundary when tidal data are not available, a surveyor would find the location of the ordinary high water mark. The ordinary high water mark is a physical feature impressed on the ground by standing water, due to changes in vegetation or in the soil itself. Cole testified that Shine's line basically follows what Cole would consider to be the ordinary high water mark in the disputed area.

In rejecting the Shine line, the Court avoids the weight of history by dismissively asserting that Shine simply followed previous surveyors' meander lines, and noting that meander lines in and of themselves are not the boundary. True also, as the Court maintains, the original surveys of civil-law land grants were not done to establish a boundary but to ensure adequate grazing land. And, the Court claims that *Luttes* rejected use of a bluff or vegetation line as a boundary.

But none of these arguments justifies the Court ignoring history, nor do they provide authority to reject the jury's finding that the Shine line reasonably accurately locates the west margin of the Laguna

Madre. The Court's arguments make sense only if one blindly accepts that *Luttes* controls irrespective of whether the civil law's mean higher high tide can be measured.

In the typical case, meander lines are not themselves a boundary line.¹⁸ But the meander lines of earlier surveys are historical evidence of where the surveyors understood the Laguna Madre's west margin to be. And Shine's line is consistent with the evidence of where *every* surveyor before Claunch and Lothrop placed the west margin.

Moreover, an authority no less than the United States Supreme Court has permitted meander lines to establish a water boundary in a case in which the physical characteristics of the area in question made it impossible to use other methods. In a series of decisions involving a dispute between the United States and Utah about the boundary of the Great Salt Lake, the Court was called upon to determine the original boundary of the Lake when Utah was admitted to the Union in 1896.¹⁹ A meander line had been surveyed around the Lake in segments beginning in 1855 and finally concluding in 1966.²⁰ The customary method for locating the Lake's boundary would have been to locate the ordinary high water mark, which is typically indicated by a line of vegetation or erosion.²¹ Because of the unique physical characteristics of the Lake, no such line could be found, in the past or the present.²² Moreover, a variety of factors combined to

¹⁸ See, e.g., *Stover v. Gilbert*, 247 S.W. 841, 842 (Tex. 1923).

¹⁹ See *Utah v. United States*, 427 U.S. 461 (1976).

²⁰ Report of Special Master in *Utah v. United States*, reprinted in 1976 UTAH L. REV. 245, 265, adopted in 427 U.S. 461 (1976).

²¹ 1976 UTAH L. REV. at 255.

²² *Id.* at 255-56.

produce fluctuations in the Lake's water level, causing water to flood and recede from large surrounding areas of flats.²³

The Special Master appointed by the Supreme Court concluded that “the meander line is believed to be the most reasonable answer” to the boundary question.²⁴ The Special Master also concluded that historical data was significant in fixing the boundary.²⁵ The Supreme Court adopted the Special Master's report and issued his recommended decree.²⁶

Regarding civil-law grants, this Court has never absolutely rejected original civil-law grant surveys as some evidence of the grantor's intent. Interestingly, as the Court discusses, courts have observed that it was not unusual for original surveys to contain excess land and to be done for the purpose of assessing payment due from the grantee.²⁷ But ignored by the Court in this case, is that the evidence indicates the opposite, that here the disputed area was intended to not be part of the grants. Moreover, subsequent surveys and maps located the west margin of the Laguna Madre in substantially the same place.

Overstating *Luttet*, the Court suggests *Luttet* declared that a bluff line can never provide evidence of a boundary. But that is not true. *Luttet* concluded only that the bluff line in that case could not be the mean higher high tide line, where it was clear that the bluff line had been the original shoreline and the

²³ *Id.* at 253.

²⁴ *Id.* at 295.

²⁵ *Id.* at 301-02.

²⁶ *Utah*, 427 U.S. at 461.

²⁷ See, e.g., *Stover*, 247 S.W. at 842; *Corrigan v. State*, 94 S.W. 95, 98 (Tex. Civ. App.), writ ref'd, 94 S.W. 101 (Tex. 1906).

evidence showed that the water had since receded.²⁸ In fact, consistent with the notion that a vegetation or bluff line could be relevant, the Court in *Luttet* anticipated that the shoreline would have obvious physical characteristics on the ground.²⁹

Finally, the Court suggests that accepting the Shine line as the boundary in this case will create confusion along the entire Texas coastline. I disagree. I recognize that the *Luttet*'s declaration about the civil law was designed to provide the benefits of certainty and stability for civil-law shoreline boundaries. But the civil law, as a matter of law, requires the mean higher high tide line to be used. In this case, that line cannot be found as a matter of fact. Furthermore, I find the Court's argument about predictability of shorelines ironic. Not until this Court's decision today does the Foundation even have an argument that its property's boundary is at some location different than where the historical evidence shows it to be. And today, without so much as a blush, the Court chooses the Foundation's boundary, the proof of which shows that it was found by determining neither the mean of the higher high tide nor any other water.

III. CLAIM AND ISSUE PRECLUSION/ATTORNEYS' FEES

Because I would dispose of the case in the State's favor on other grounds, I would not reach the State's argument that the Foundation's claims are barred by either claim or issue preclusion. Further, I agree with the court of appeals' holding denying the State's and the Foundation's claims for attorneys' fees.

²⁸ *Luttet*, 324 S.W.2d at 192 (opinion on rehearing).

²⁹ *Id.* at 180.

IV. CONCLUSION

The civil law identified by *Luttet* requires that Texas property shorelines be located at the mean higher high tide line. *Luttet* cannot control the result in this boundary dispute because the Laguna Madre's west margin cannot be located using the mean of the higher high tide. That's because the only available water measurements are non-tidal. Moreover, the Foundation not only failed to carry its burden to prove to the jury, but it produced no evidence that the Claunch/Lothrop line marks the Laguna Madre's west margin even under its own theory about *Luttet*.

Because the mean of the higher high tide cannot be determined, and because the west margin has not changed since the original grants, I would hold that the west margin may be located by historical evidence substantially contemporaneous with the grants. Further, the State produced evidence that its line – the Shine line – is consistent with the historical evidence substantially contemporaneous with the grants and with physical evidence of the high water mark in the disputed area. Consequently, I would hold there is some evidence supporting the jury's finding that the Shine line "marks with reasonable accuracy the line between the fast land and the shore of the Laguna Madre." Thus, I would affirm the judgment of the court of appeals. Because the Court does not, I must dissent.

Opinion delivered: August 29, 2002

Craig T. Enoch
Justice

