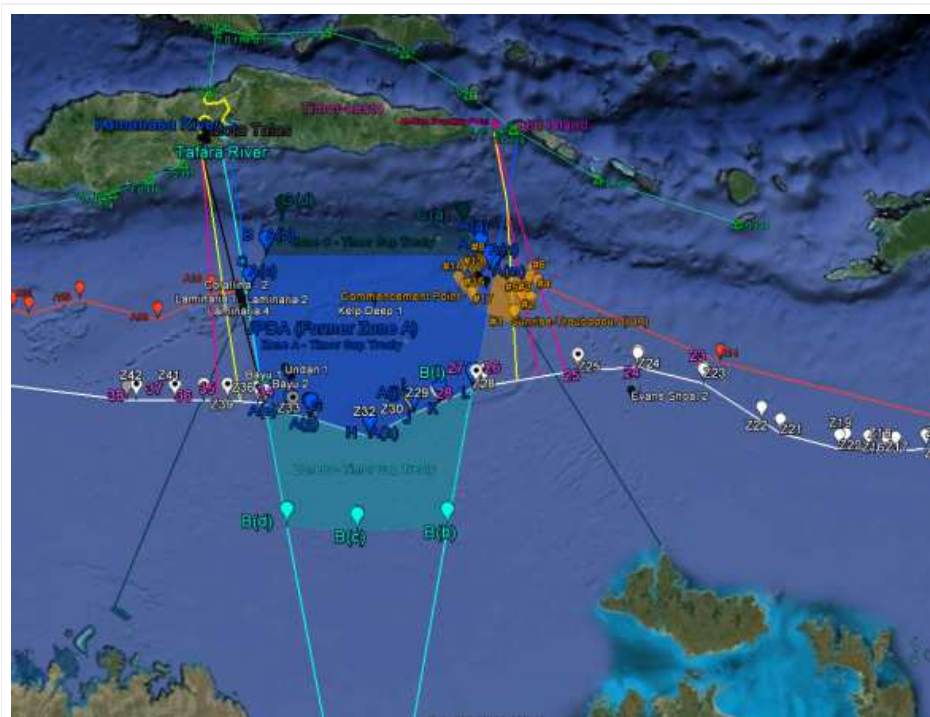


Google Earth Map for the Timor Sea Maritime Boundary Dispute

Posted on [March 17, 2014](#)

Google Earth is an amazing thing, and it's hard to understand what's truly going on in the Timor Sea simply by looking at pictures, so I've created a Google Earth collection that shows the coordinates provided in the major treaties affecting the region: the [1972 Indonesian-Australian Seabed Boundary Agreement \[PDF\]](#), the [1981 Provisional Fisheries Surveillance and Enforcement Arrangement \[PDF\]](#), the 1989 Timor Gap Treaty, the 1997 Water Column Boundary Agreement, the 2002 Timor Sea Treaty, and the 2006 Sunrise IUA/CMATS.

The Google Earth collection for the Maritime Boundaries in the Timor Sea can be downloaded [here](#).



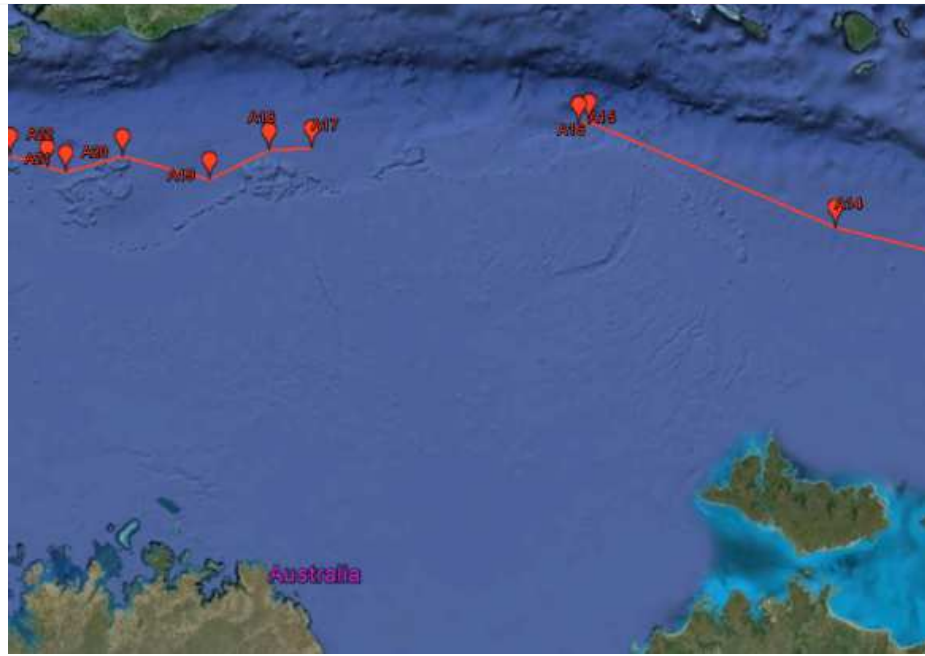
— if you display all of the treaties at once, it kind of looks like a rainbow threw up in the Timor Sea

If you're interested in figuring out how all these treaties work together, it is probably more useful to just go ahead and play around with it on Google Earth, but I've provided a visual summary below using screenshots from the collection.

I. The Indonesian-Australian Seabed Boundary Agreement (1972)

In the beginning, there was the gap:





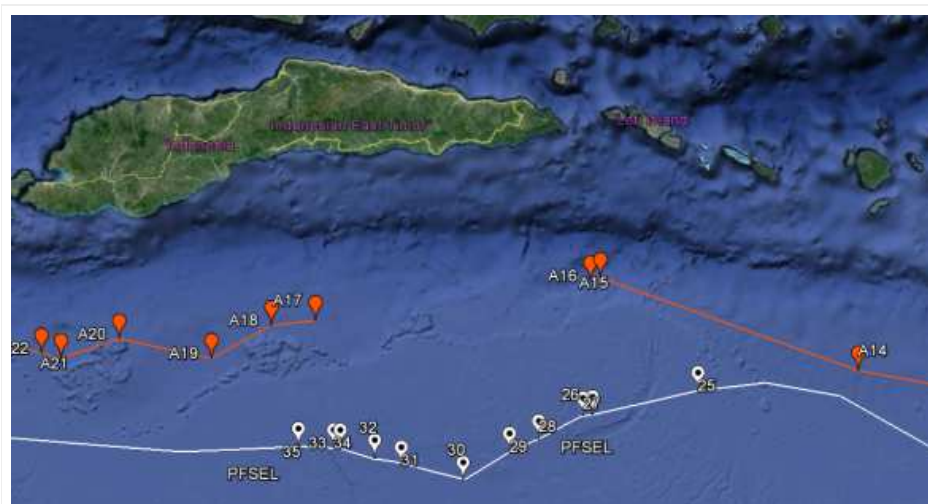
— 1972 Seabed Boundary, with coordinates

Australia and Indonesia entered into the 1972 seabed boundary treaty, which established a maritime boundary that was significantly north of the median line between Indonesia and Australia. The boundary in front of Portuguese-controlled Timor remains unfixed.

In 1975, Portuguese exited the scene, and Indonesia promptly invaded. Indonesia and Australia try, and fail, to enter into an agreement establishing the maritime boundary between Australia and Indonesian Timor.

II. The PFSEL (1981)

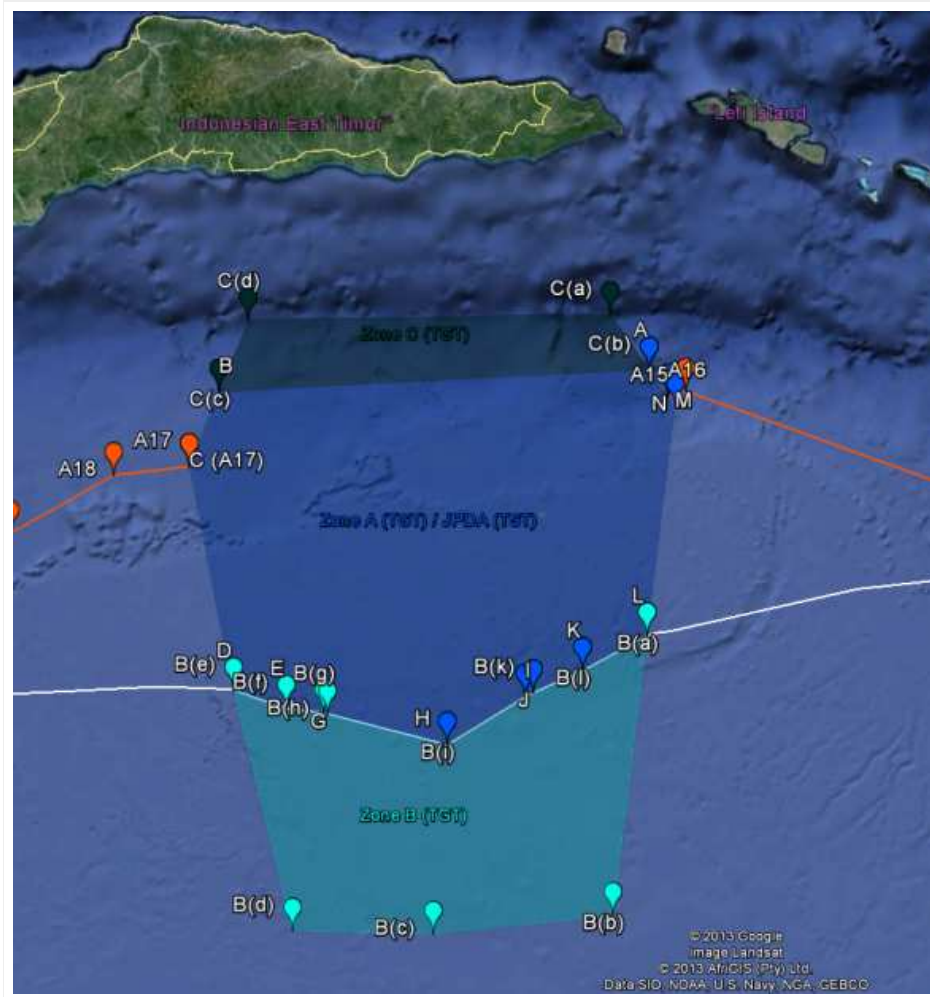
In 1981, Indonesia and Australia still had not entered into any permanent treaty arrangements over their maritime boundaries, but they did succeed in reaching a Memorandum of Understanding concerning the Provisional Fisheries Surveillance and Enforcement Arrangement. This MOU did not establish any agreement as to the seabed resources, but provided a working arrangement for other maritime concerns in the region by establishing the Provisional Fisheries Surveillance and Enforcement Line (PFSEL). The PFSEL was drawn roughly along the median between the coasts of Timor and Australia, and this line would later be largely replicated as the water column boundary in the 1997 Treaty between the Australia and Indonesia, establishing an Exclusive Economic Zone Boundary and Certain Seabed Boundaries



— 1972 seabed boundary (red) and 1981 PFSEL (white)

III. The Timor Gap Treaty (1989)

In 1989, Australia and Indonesia entered into the Timor Gap Treaty, which came into effect in 1991. The TGT, if taken in a generous light, could be described as a “creative compromise.” It was ultimately reached by simply setting aside the question of maritime boundaries, and instead establishing three ‘zones of cooperation’ in which Australia and Indonesia could jointly produce petroleum found in the disputed Timor Sea region. Tax revenues from Zone A were split between Australia and Indonesia 50%/50%; in Zone B, Australia paid Indonesia 10% of the tax revenues it collected; and in Zone C, Indonesia paid Australia 10% of the tax revenues it collected.



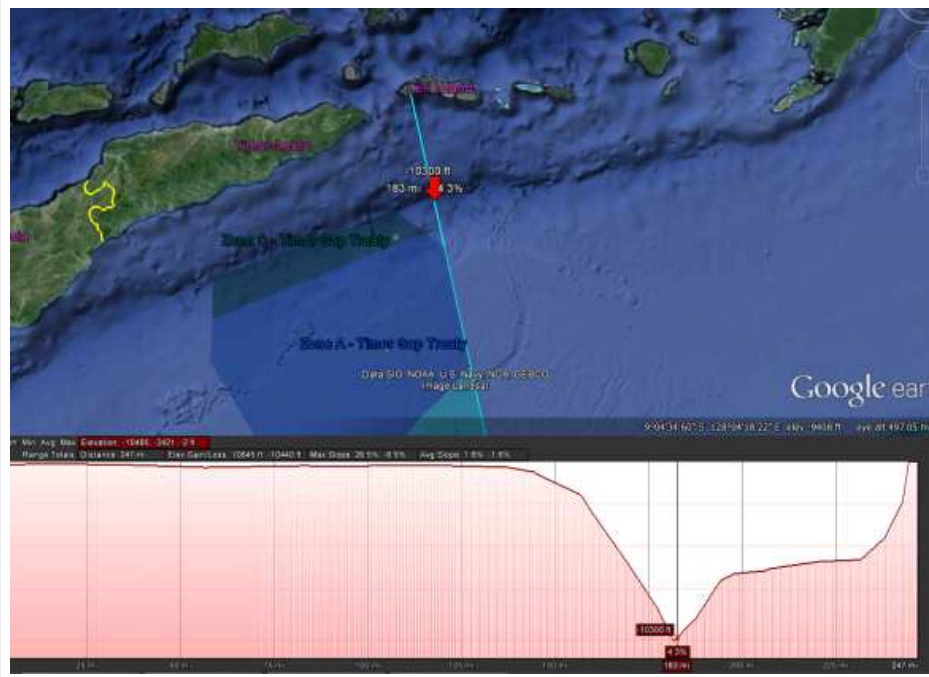
— The three “Zones of Cooperation” established by the Timor Gap Treaty (1989)

The coffin-shaped design of the Zone of Cooperation Whole (“Zone”) was a deliberate choice made by Indonesia and Australia, and it does not directly reflect maritime boundaries that would be suggested by international law. Essentially, the parties agreed that the widest part of the Zone would be placed where the “Timor gap” lay, in between the opening left by the 1972 seabed boundary line, and the Zone would then become narrower both to the north and south of the Timor gap.

Northern and Southern Boundaries of the Zone

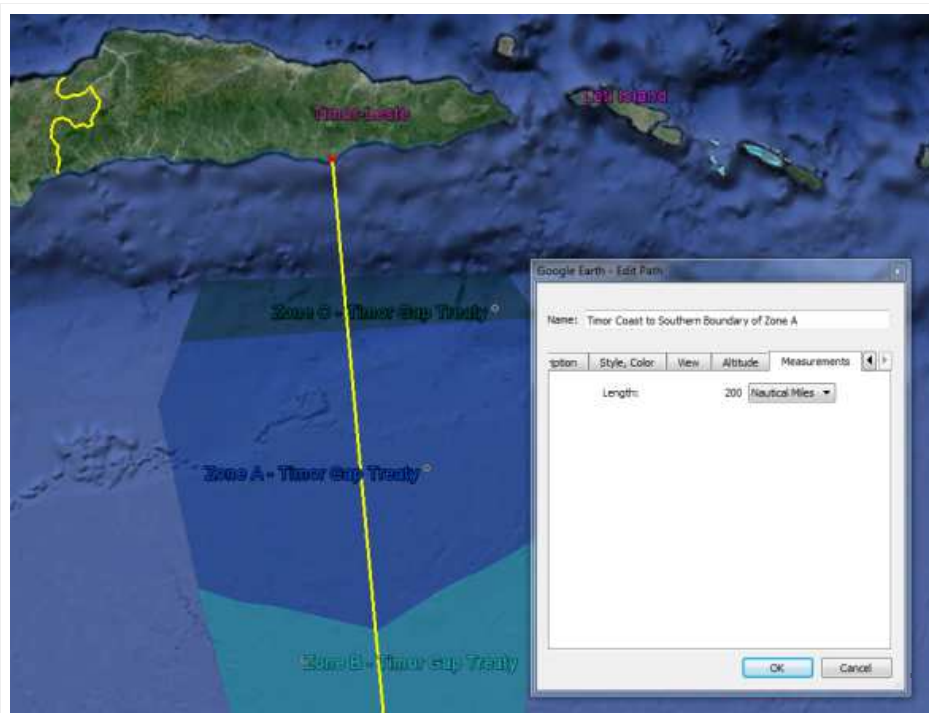
The northern and southern boundaries of the Zone have a relatively objective basis for their placement. The northern boundary of the Zone is drawn along the deepest point of the Timor Trough, and represents the full extent of Australia’s claim to the Timor Sea under its

“natural prolongation” principle. Australia’s maritime claims are based on its belief that it has sovereign rights to the entirety of its continental shelf — which in its view, extends to the lowest point along the seafloor between two adjacent states:



- Eastern boundary of the Zone of cooperation, with elevation profile showing Timor Trough/Northern boundary of Zone

In contrast to the northern boundary, the southern boundary of the Zone is drawn along a line 200 nautical miles off the coast of the island of Timor. This represents the fullest possible extent of a state’s claim to an EEZ under UNCLOS. When the sea between two adjacent states is less than 400nm (as is the case in the Timor Sea), both states are unable to have a full 200-mile EEZ, and instead the EEZ is typically drawn along a median line. However, when negotiating the Timor Gap Treaty, the parties’ compromise in setting the Zones of Cooperation is that it would reflect both Indonesia and Australia’s maximum possible maritime territorial claims.





- Southern boundary of the Zone is 200 nautical miles off from Timor's coast

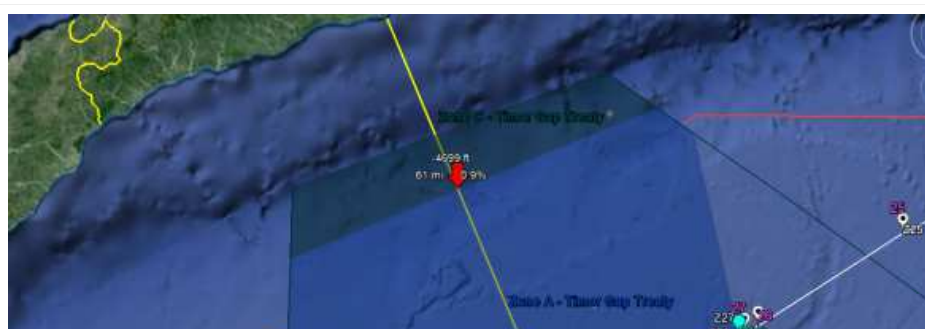
Internal Zone Boundaries

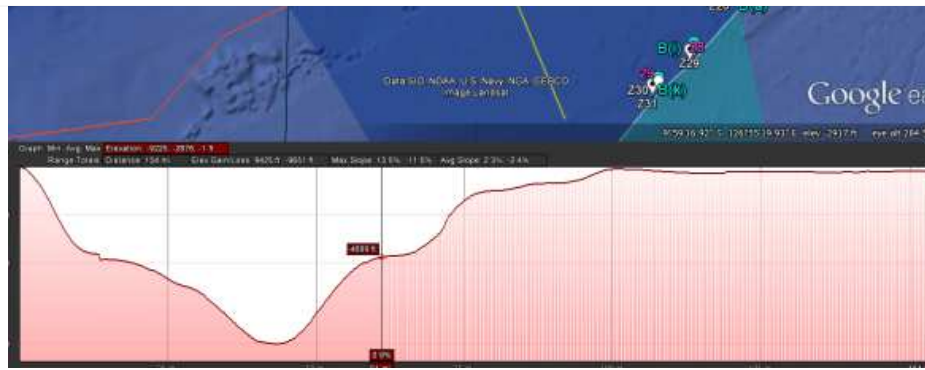
The division between Zone A and Zone B is drawn along the median between Australia and Timor. This boundary is close — but not identical — to the median line established in the Provisional Fisheries Surveillance and Enforcement Arrangement, along the PFSEL. (Side note: the 1997 water column agreement between Australia and Indonesia establishes a median line that is identical to the PFSEL for every point outside of the Timor Gap. Inside the Timor Gap, the points of the 1997 boundary correlate to the points of the Timor Gap Treaty, but with coordinates that run slightly to the north of the TGT's points.)



- Close-up of the western leg of the boundary between Zone B (south, green) and Zone A (north, blue), showing the coordinates from PFSEL (black dot, purple text) and the 1997 Water Column treaty establishing the median boundary (white), as well as the identical coordinates of the Timor Gap Treaty (1989) and Timor Sea Treaty (2002) (overlapping, depicted in green in screen cap).

The division between Zone C and Zone A lies somewhat close to the original 1972 seabed boundary, but the angle of the division does not all match the angle of the 1972 division. Instead, it appears as if Zone C was demarcated on the basis of seabed features, as it appears to track a ridge on the southern side of the Timor Trough, where the “canyon” levels off somewhat (marked with red arrow on map, elevation data shown on bottom), which leads to the northern and southern boundaries of Zone C being somewhat parallel:

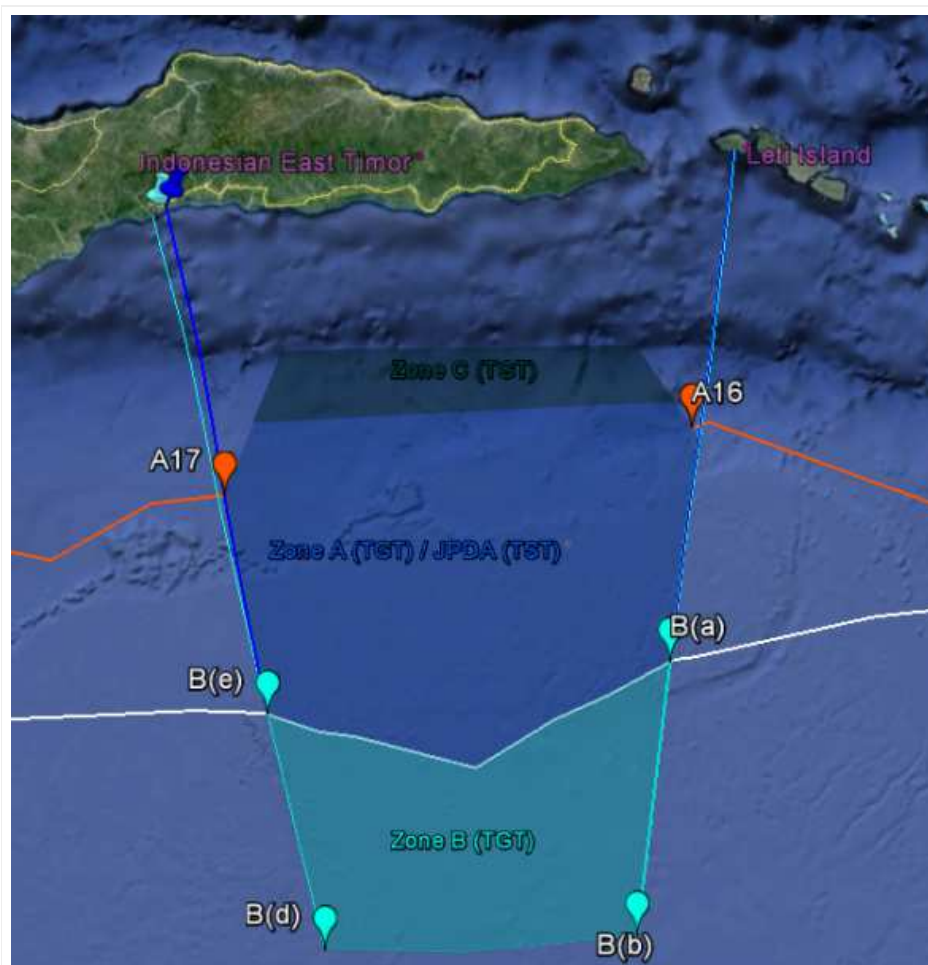




— Southern plateau of Timor Trough, marking southern boundary of Zone C

Western Lateral Boundaries of Zones A and B

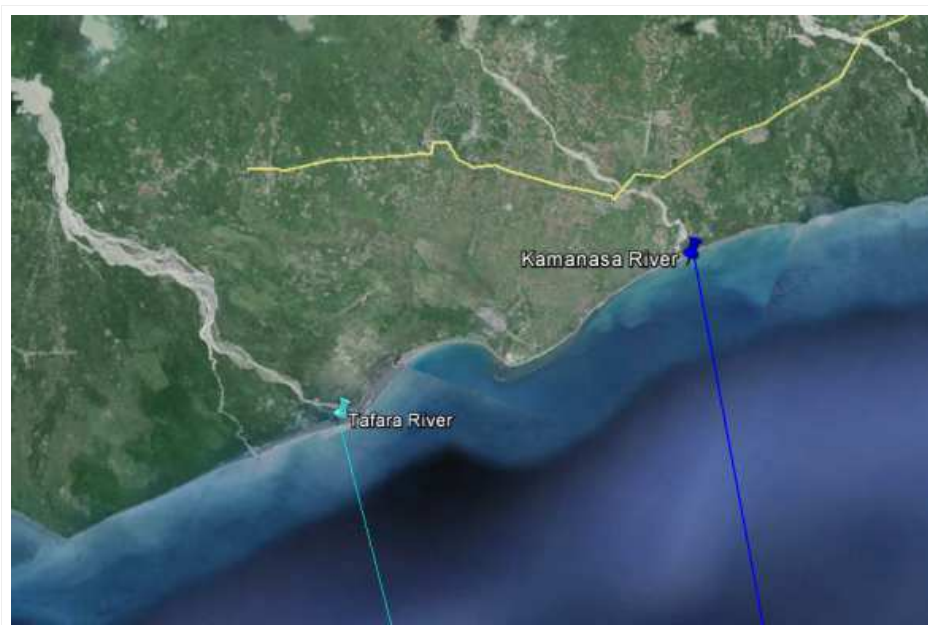
The lateral boundaries of the Zone (marking the width of the Zone as it runs east-west) are more arbitrarily drawn than the longitudinal boundaries. The western lateral boundary of the Zone is particularly odd, as it is in fact two different boundaries. Unlike the eastern boundaries for Zones A and B (which are roughly identical) the western boundaries for Zones A and B show a marked and unexplained divergence. It appears that the western boundary of Zone A (in royal Blue) was established by a line drawn from the mouth of the Kamanasa River through the point of A17, which then terminates where it meets the median boundary between Australia and Indonesia (in white), to intersect at the point marked by point B(e). The western boundary of Zone B (in cyan), although roughly similar, runs at a different angle from Zone A's boundary. Zone B's boundary appears to have been established by drawing a line from the mouth of the Tafara River through point B(e), which then terminates where it meets the 200 nautical mile line of Timor's EEZ (the southern border of Zone A), to intersect at the point marked by B(d):



- Eastern and Western lateral boundaries of Zone of Cooperation, extended to shore of Timor
(The points marking A(c) and A(n) are not pictured, because their coordinates are the same as points A16 and A17 from the 1972 Seabed Treaty. Note that A16 and A17 are the bookends to the “Timor gap”.)

The logic behind the placement of the Zone’s western boundary is not immediately apparent. It is often said that the western boundary is a “simplified” equidistant line that divides the territorial seas between Portuguese Timor and Indonesia, but there is reason to question this assumption. First, the western lines simply don’t appear to be an equidistant boundary, as it is claimed; it may perhaps be a “simplified” line of equidistance, but if so, it’s an unintuitive approximation of that. Second, the boundaries of the Zones are unerringly straight; they draw direct line into the coasts, and not angled in a manner that would suggest they are following an organic boundary division. And, third, based on the historical context, it makes little sense for the lateral boundaries of the Zone to have been drawn along a line of equidistance. In 1989, there was only a single sovereign on the island of Timor, and that was Indonesia. The purpose of the Timor Gap Treaty was to resolve the division of an undelimited maritime boundary between a sovereign that held the entirety of the north and a sovereign that held the entirety of the south; there was absolutely no need to calculate the boundary of two adjacent sovereigns on the northern side, or to have the division of the Zone reflect that. The Zone was plainly a compromise, as shown by its Trough-marked northern border and 200nm southern border, and there is no reason to assume that the western and eastern border were not also based on pragmatic considerations — as opposed to reflecting the sovereign territory of the state of Timor-Leste, which no longer existed.

And from the maps, it does very much appear that the western boundaries had been drawn in reference to geographic features on Timor. Both the Zone A and Zone B western boundaries line up directly with river mouths on Timor’s shore:



- Extension of western boundary of Zone B (green) and Zone A (blue) to Timor shore

If the Zone established by the Timor Gap Treaty were the result of compromise and pragmatically drawn boundaries (which, from all the evidence, appears to have been the case) then it makes more sense that the western boundary was not intended to represent the then-nonexistent Timor-Leste’s territorial waters, but instead was chosen on the basis of other concerns. Yes, using the Tafara and Kamanasa Rivers to establish the western boundaries for the Timor Gap Treaty would be somewhat arbitrary, as these two rivers are not themselves significant boundary markers, but that further suggests that the boundary had little or nothing to do with Timor-Leste. The mouth of the Massin river, called the Mota Talas, is a far more significant geographical marker. The Massin River, which is the river immediately to the west of Tafara and Kamanasa, is the boundary between Timor-Leste and Indonesia today. If the Zones of Cooperation had truly been drawn to delineate the territorial sea of what was Portuguese Timor, then you would expect the western boundary of the Zone to lead directly to Mota Talas.

But it doesn't. Below, Mota Talas has been marked with a black pushpin, and the boundary line from Mota Talas to point B(e) has been marked in black, showing what a boundary from Mota Talas would look like, compared to a boundary from either Kamanasa or Tafara:



- Angle of hypothetical boundary drawn from the Timor-Leste/Indonesian border through the point marked B(e) from Timor Gap Treaty (in black)

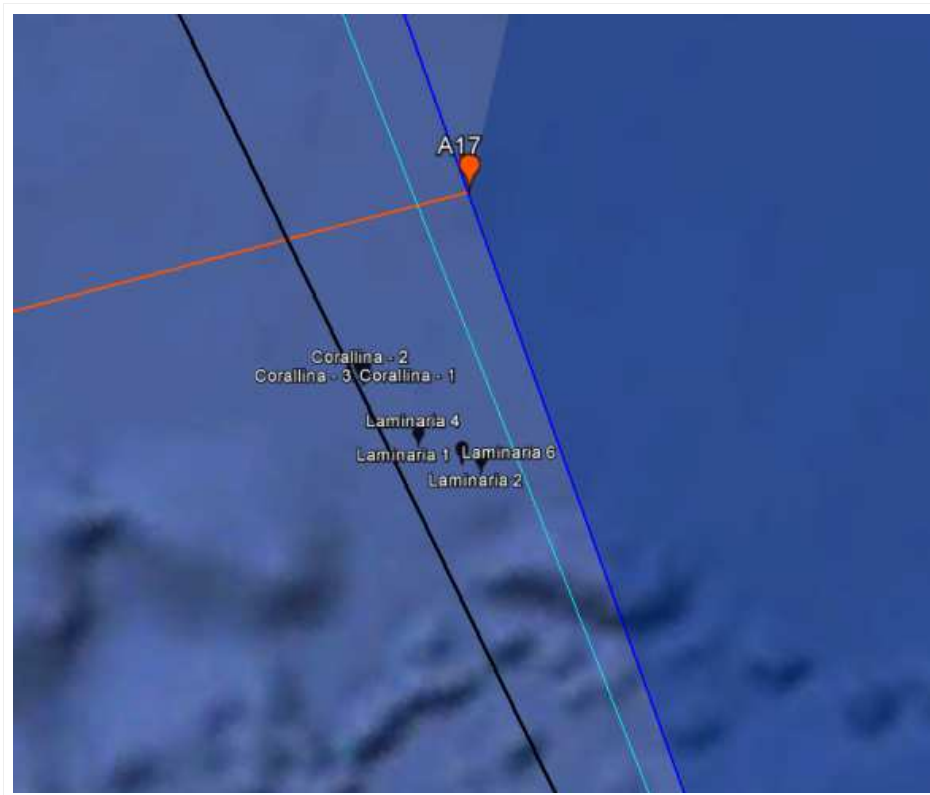


- Close-up of the three rivers where western lateral boundaries converge on shore of Timor

So why draw the western boundary from Tafara or Kamanasa instead of Mota Talas? Admittedly, this distinction doesn't make a huge difference in terms of total sea area — using the boundary drawn from Tafara, marked by the cyan line, instead of the boundary drawn from Mota Talas, marked by the black line, would exclude approximately 131 square nautical miles from the shared territory of Zone A, leaving it exclusively in Australia's possession.

Given this marginal difference in total area, even if the lateral boundary *should* have been drawn from Mota Talas, is Timor-Leste truly prejudiced today by having a territorial sea that is drawn from the Tafara or Kamanasa, instead of from Mota Talas?

Well, yes. One reason why Australia may have chosen not to use Mota Talas becomes immediately apparent once you turn on the markers for the Laminaria-Corallina gas fields:

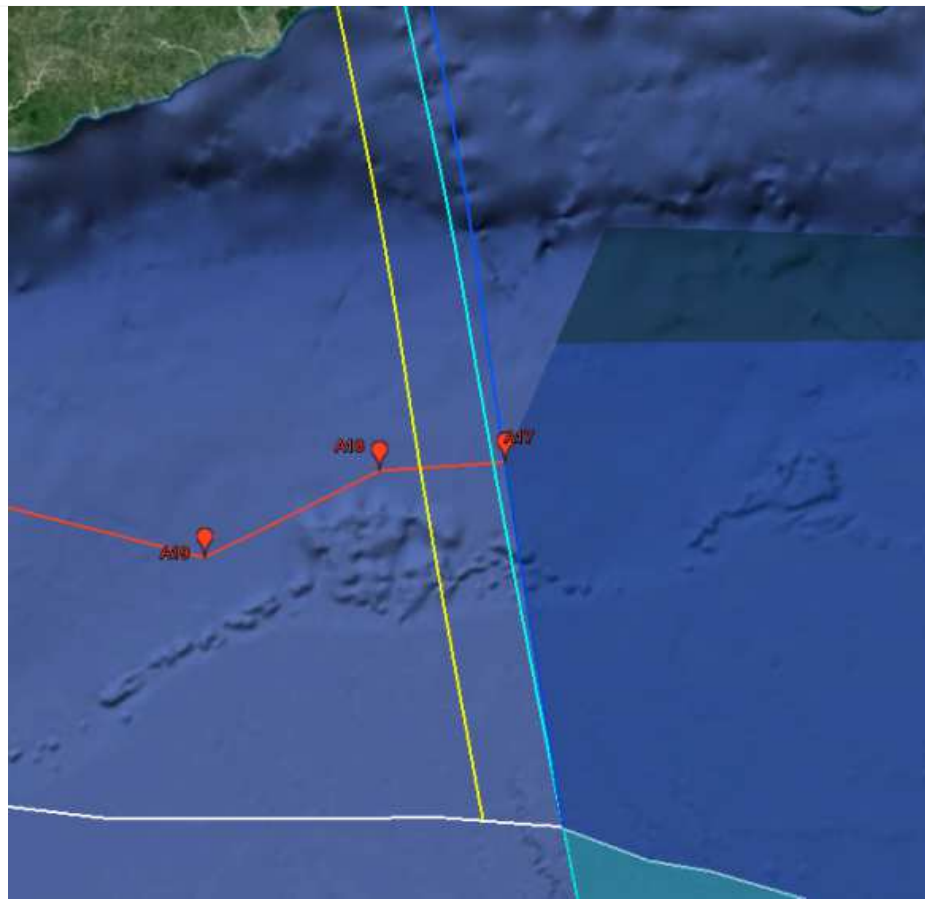


- Close-up of western boundary of Zone A, showing boundary line of Zone A (blue), Zone B (green), and hypothetical Mota Talas line (black). Note the convenient placement of Laminaria-Corallina wells.

It could be a coincidence. But you can understand my skepticism.

In any event, if the western lateral boundary of Timor's EEZ and territorial sea were to be re-drawn today (and, if I were in charge of the world, the one that I would I draw), a more appropriate division might be provided by the proposed boundary depicted below, in yellow:





— Alternative western lateral boundary between Australia, Indonesia, and Timor-Leste (yellow)

This boundary preserves the angle established by the Timor Gap Treaty (and the Timor Sea Treaty), which is not terribly far off from the angle of an equidistant line, but it shifts the maritime boundary's starting point to its appropriate beginning at Mota Talas.

This proposed division also reflects the equidistant-influenced 1972 Seabed Boundary. Although the 1972 line was drawn to reflect Australia's "natural prolongation" claim, the ultimate boundary was a compromise between a continental shelf division (which lies along the Timor Trough) and an equitable division based upon the shape of the Timorese and Australian coast line. The boundary line that runs between points A18 and A17 of the 1972 treaty partially reflect the straightening of Timor's coast, as it turns to run more directly east — and this straightening in the coast begins just before the border of Indonesia and Timor-Leste. This would also suggest that a more appropriate maritime boundary between Timor-Leste and Indonesia would fall somewhere west of A17 and east of A18, instead of on A17 itself.

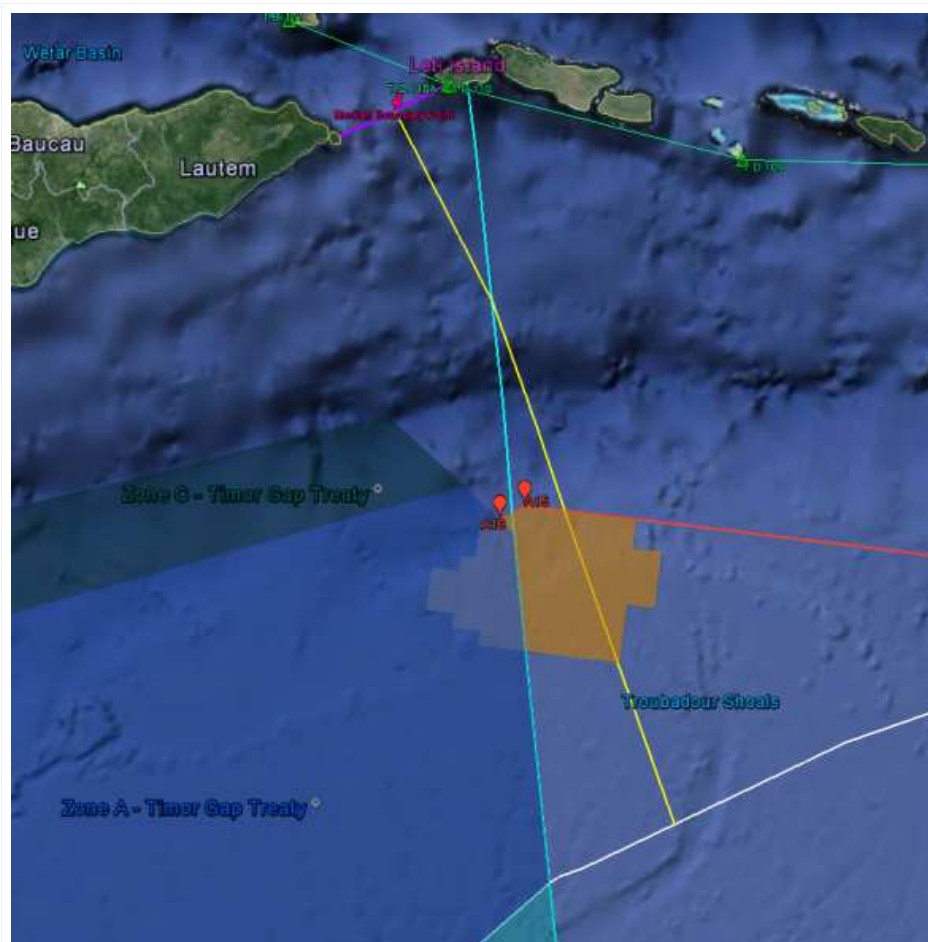
Eastern Lateral Boundaries of Zones A and B

The eastern lateral boundaries of Zones A and B are nearly aligned, with angles that have only the barest degree of difference. The boundary has been established along a line that starts in the middle of the island of Leti (at mile 4 of an 8-mile island), and then moves southwest until it meets the 200nm boundary south of Zone B. Its angle is somewhat arbitrary, though; instead of drawing the eastern boundary through A16, as might be expected, the line intersects the 1972 boundary between A16 and A15. In some respects, it could have been drawn to represent a "simplified" line of equidistance. But, once again, as with the western boundary, there is only an approximate resemblance to the hypothetical equidistant line, and it has a more pronounced convergence away from Timor than would be expected, if the boundary were based on a territorial division between Indonesia and Timor-Leste. And, also like the western boundary, there is no reason to expect that, in 1989, Indonesia and Australia would have established the eastern boundary of their Zone of Cooperation so as to reflect the appropriate territorial division between Australia, Indonesia, and a nonexistent third state.

The eastern boundary may also have been established simply to mirror the angle of the western boundary, and provide for a more

symmetrical Zone. Whatever the reason, the eastern boundary goes from Leti Island on a westerly angle to where it intersects the median line, at the point marked by A(m) (which is now point M from the Timor Sea Treaty), before finally terminating at the 200nm line, at the point marked by B(b).

But the angle created by starting the boundary at Leti is unequitable and arbitrary when applied to a territorial division between three sovereigns. When the eastern boundary was created, that wasn't an issue, since all of the islands were Indonesian; Leti served as a convenient geographical base to use as a reference point in plugging up the Timor Gap, and the boundary did not need to take into account the competing claims of a sovereign state across the channel from Leti. A more equitable line might be something approximately along the boundary line shown below, in yellow. This boundary represents an equidistant division beginning at the median of Leti and Jaco, but which angles back towards the west to represent the effect of Indonesia's straight baselines. The territory covered by the Sunrise IUA has also been shaded in, in orange, for reference:



— Alternative eastern lateral boundary between Australia, Indonesia, and Timor-Leste (yellow)

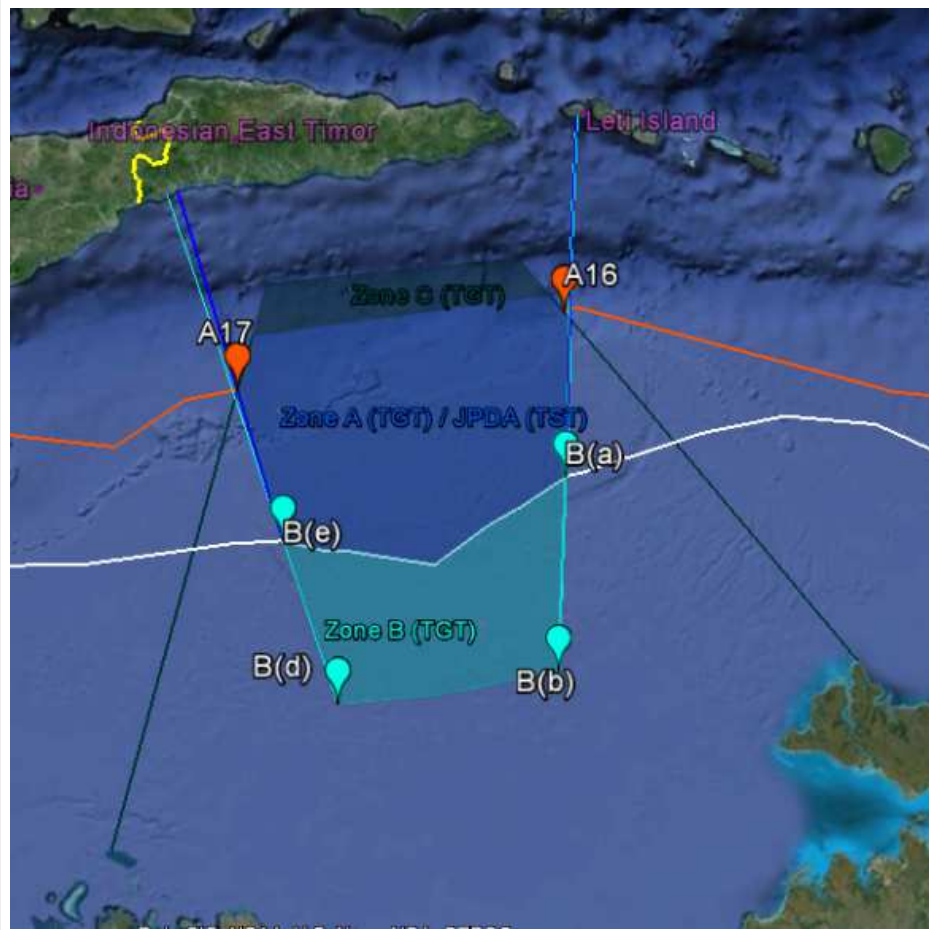
Once again, the result of this change is small, but significant. Timor-Leste's territory would encompass an approximately 70% of the Sunrise-Troubadour field region, as opposed to the 20% that falls within the JPDA today.

Eastern and Western Lateral Boundaries of Zone C

The lateral boundaries for Zone C (which converge closer towards Timor) are almost entirely arbitrary: they were established by taking the northern-most point on the Australian coast that lies to the east of the Timor gap (Melville Island) and the northern-most point that lies to the west of the gap (Long Reef) and then drawing a line from those geographical features through points A16 and A17, respectively. Those lines then terminate where they intersect with the Timor Trough (northern boundary of Zone C).

The western and eastern lateral boundaries of Zone C are shown below, with extensions drawn to the northernmost points of Long

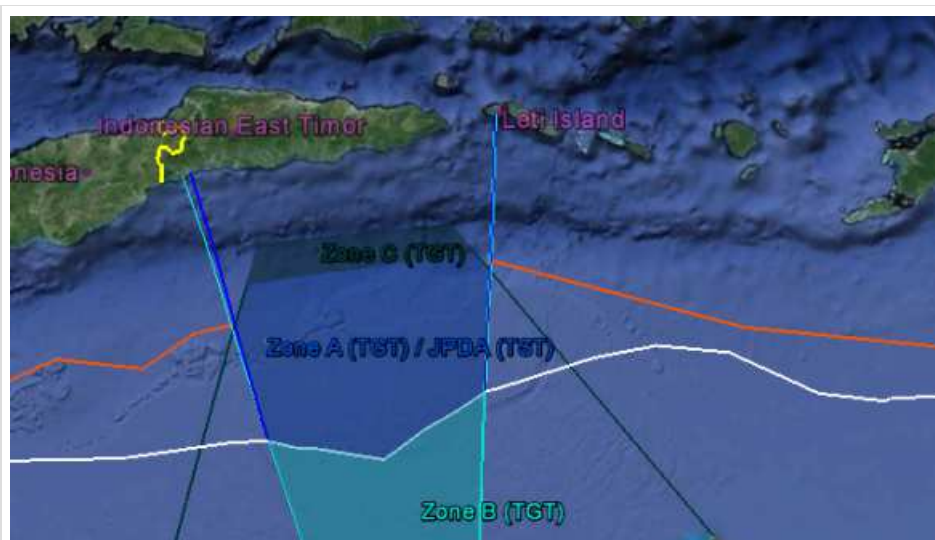
Reef and Melville, for reference:



- Lateral boundaries of Zone C, drawn from Melville Island through A16 to the Timor Trough (eastern), and from Long Reef through A17 to the Timor Trough (western)

Timor Gap, All Lateral Lines

Finally, by extending the lateral boundaries of Zone B south, to where they meet the Australian coast, and north, to where they meet the coast of Timor, you can see the truly inequitable shape created by the Zones of Cooperation (and, subsequently, by the JPDA):





IV. Timor Sea Treaty (2002) and the Joint Petroleum Development Area

Following Timor-Leste's independence, Timor-Leste and Australia negotiated the Timor Sea Treaty. The TST essentially preserved Zone A of the TGT, shown below in royal blue, and provided for a division of control and tax revenue from petroleum production in that area. Following the TST, the status of the areas to the east and west of the JPDA that lie between the red and white lines remained uncertain.



V. The Sunrise IUA and CMATS (2006)

Following the boundary lines established by the TST, approximately 80% of the resource-rich gas fields known as Greater Sunrise remained in no-man's land. Although the 20% of Greater Sunrise that lies within the JPDA would be governed by the TST (with revenues split 90%/10% in Timor-Leste's favor) the other 80% of Greater Sunrise was unaccounted for by the TST. Under the Certain

Maritime Arrangements in the Timor Sea treaty, which put it into place the earlier (but unratified) Sunrise IUA, a Greater Sunrise area was established, shaded in orange below, which provided for Timor-Leste and Australia to split the revenues from production within the area 50%/50%.



VI. The Lowe Opinion

The [Lowe Opinion \(2002\)](#) is a paper that was prepared at the behest of an energy company that had previously been divested from any opportunity of developing the oil and gas fields in the Timor Sea. Following Timor-Leste's independence, corporations who were not among the select consortium that had an enshrined right in the Australian-issued leases (i.e., everyone other than Woodside and its JV buddies) had a financial stake in encouraging Timor-Leste to take a more aggressive stance in negotiations with Australia regarding the delimitation of the seabed boundary.

The Lowe Opinion was intended to encourage Timor-Leste to do just that, and, in order to show Timor-Leste the full extent of what was potentially on the bargaining table, it proposed an alternate plan for establishing the maritime boundaries between Timor-Leste that was tilted in Timor-Leste's favor. It did so primarily by drawing the southern/northern boundary along the median boundary (in white), and then re-drawing the lateral boundaries in an, err, aggressively equitable fashion, so that Timor-Leste had more maritime territory to the east and west of the JPDA. The proposed lines from the Opinion are shown below in neon pink:





— The proposed maritime boundaries of the Lowe Opinion

The eastern lateral boundary shows two hypothetical lines — one is a median line drawn equidistant between Timor and Leti's coasts, while the line farther east is drawn so as to give only a partial effect to the Leti Islands, owing to their smaller size.

The Lowe Opinion does correctly point out that points A17 and A16 from the 1972 Indonesian-Australian Seabed Boundary are arbitrary points that reflect what was convenient to the drafters of the Timor Gap Treaty, rather than reflecting what international law would provide for. Although the Opinion's western lateral boundary is overly generous, and just as arbitrary as the JPDA's current western boundary, it does represent a good faith claim Timor-Leste could have asserted when going into negotiations with Australia. (And it is certainly far more reasonable, and far more in good faith, than Australia's own starting position was.) The eastern lateral boundaries proposed in the Lowe Opinion range from fairly reasonable to, at the most extreme, a fairly unreasonable discounting of Indonesia's own territorial seas. The effect the proposed eastern lateral boundaries would have had, if adopted, would be to place all, or substantially all, of Greater Sunrise within the EEZ of Timor-Leste.

-Susan

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