Environmental Liability in Commercial Space Launches: Examining the South Texas Mass Tort Case Against SpaceX

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On April 30, 2026, eighty plaintiffs filed a federal complaint in the U.S. District Court for the Southern District of Texas against Space Exploration Technologies Corp. ("SpaceX"). The case, *Aguilar et al. v. Space Exploration Technologies Corp.*, No. 1:26-cv-00485, alleges that repeated Starship launch and landing operations at the Starbase facility in Cameron County have caused structural damage to homes across Port Isabel, South Padre Island, and Laguna Vista. Asserting claims of negligence, gross negligence, and trespass under the exclusive federal jurisdiction of the Commercial Space Launch Act ("CSLA"), the case has the potential to reshape the legal relationship between commercial launch operators and neighboring communities.

The Complaint

The plaintiffs are homeowners residing roughly six to twenty-two miles from Starbase's launch pads. The complaint alleges that eleven Starship/Super Heavy test flights between April 2023 and October 2025, together with earlier sub-orbital tests and static firings, subjected their properties to intense acoustic energy. The complaint relies on peer-reviewed research by Brigham Young University scientists whose field measurements during the fifth and sixth test flights recorded maximum unweighted sound levels exceeding a threshold that SpaceX's own assessments and FAA environmental reviews recognize as the onset of structural damage risk. Sonic boom

overpressures near and exceeding such a threshold were recorded at the closest locations, which is generally associated with windows shattering and superficial structural damage.

Critically, the complaint draws on SpaceX's own regulatory submissions, including a 2024 corporate statement acknowledging a "gap in data" regarding acoustic prediction for its Raptor engines. The plaintiffs frame this as evidence that SpaceX has been operating at the frontier of acoustic science while conducting the most powerful rocket launches in history, establishing both foreseeability and conscious indifference to risk.

Legal Claims and Statutory Framework

The complaint asserts three causes of action. First, the negligence claim alleges that SpaceX failed to conduct adequate pre- and post-launch studies and proceeded despite a high likelihood of property damage. Second, the gross negligence claim seeks exemplary damages, arguing that SpaceX had actual awareness of acoustic risks, especially after the inaugural April 2023 test destroyed its own launch pad, yet continued with conscious indifference. Lastly, the trespass claim contends that SpaceX intentionally caused acoustic energy to enter the plaintiffs' properties without consent, resulting in physical harm.

Jurisdiction rests on 51 U.S.C. § 50914(g), which grants federal courts exclusive jurisdiction over third-party property damage claims arising from licensed launch activities. This provision confirms that the CSLA contemplates such suits but does not immunize the licensee. SpaceX is required under the statute to carry up to $500 million in third-party liability insurance, and the FAA's 2022 environmental assessment explicitly stated that SpaceX would be responsible for resolving structural damages caused by sonic booms.

Potential Legal Consequences

The outcome will turn on causation: whether the plaintiffs can demonstrate that launch-generated acoustic energy, rather than pre-existing deficiencies or other factors, caused their alleged damages. The complaint does not itemize specific harm to each property, which will demand expert engineering and acoustic testimony. SpaceX may challenge the causal link and argue for regulatory compliance.

However, regulatory compliance is not typically a complete defense to tort claims under Texas law; an FAA launch license does not, by itself, insulate a licensee from negligence or trespass liability. The gross negligence claim, if successful, could expose SpaceX to exemplary damages well beyond compensatory relief. The plaintiffs' strategy of grounding their case in SpaceX's own admissions and peer-reviewed acoustic data gives it a scientific credibility that may prove difficult to overcome at summary judgment.

Industry Implications

The ripple effects of this case will likely extend well beyond South Texas. The FAA authorized up to 25 Starship launches per year from Boca Chica in 2025, and similar acoustic concerns have been flagged at Cape Canaveral, Florida, where SpaceX is building another Starship launch site. A substantial damages award or a judicially imposed constraint could prompt a reassessment of how launch site proximity to residential communities is evaluated during environmental review.

The case also exposes a gap in the CSLA framework: while the statute requires insurance and channels claims to federal court, it does not establish a dedicated compensation mechanism for communities chronically affected by launch operations (e.g., like airport regimes or military installations). As vehicles grow more powerful and cadences increase, policymakers may need to reconsider whether this

framework adequately balances interest in space access with the existing property rights of neighboring populations. For operators planning new or expanded sites, this lawsuit is a timely reminder to integrate acoustic modeling and community engagement from the outset.

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