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May 13, 2021

Mr. Dan Schreiber
Lemonade, Inc.
5 Crosby Street, 3rd Floor
New York, New York 10013

Open Letter to Dan Schreiber of Lemonade, Inc. (NYSE: LMND)

Dear Mr. Schreiber:

Muddy Waters Capital LLC is short Lemonade because it is clear that Lemonade does not give a fuck about securing its customers' sensitive personal information. This is particularly galling, given that in yesterday's call, you stated Lemonade has worked "so hard" to create a "trustworthy" company. Moreover, Lemonade routinely bashes its competitors for being too old to compete in the digital world.

Sensitive Customer Information has been Indexed by Google, Bing, and the Wayback Machine

In the course of using Lemonade's site to do fundamental business research, it was accidentally discovered that Lemonade's site contains an unforgivably negligent security flaw that potentially exposes its customers' personally identifiable information ("PII"). This vulnerability is so gaping that Google, Bing, and the Wayback Machine have *inadvertently* accessed the site *and indexed* customer PII. By clicking on search results from public search engines, we shockingly found ourselves logged in to and able to edit Lemonade customers' accounts without having to provide any user credentials whatsoever! This vulnerability appears to have existed since at least July 2020, yet it is detectable through an industry standard off-the-shelf security testing application that costs $400 per year. Given that Lemonade is "built on a digital substrate", there are no legacy systems, and Lemonade was founded in an age of mass security breaches, how could it leave the front door wide open for attackers? I can only assume it is due to *callous indifference* to security. Or maybe you personally were distracted by selling $48 million of stock just six months after the Lemonade IPO.

Lemonade's failures possibly implicate costly legal and regulatory breaches. We discovered that one of the crawlers had indexed an EU resident's PII. Considering that Lemonade markets its products directly to EU residents, we believe that Lemonade could have violated the EU's GDPR, which could lead to significant liability. We also believe that Lemonade could have violated the California Consumer Privacy Act and New York's regulations related to the cybersecurity requirements of financial services companies (23 NYCRR Part 500), which might also impose significant liability. We are notifying the various regulators of our findings.

This inexplicably obvious vulnerability gives rise to a range of questions about Lemonade, including:

- If the front door is this wide open, then how well secured are Lemonade's back doors, including its API?
- Lemonade's perceived value lies in part in its data collection – how well-secured is this proprietary advantage?
- Where else in its business has Lemonade cut (or blasted through) corners? (Based on the callous indifference to customer security Lemonade has demonstrated, it is certainly not discouraging for short sellers, such as ourselves, to look at the more traditional aspects of the business for significant problems.)

We call upon Lemonade to take its site offline immediately and fix the vulnerability. (We detail our understanding of the vulnerability below.) We further call upon Lemonade to investigate the scope of the security failure and the personal data it might have exposed, and notify any and all potentially impacted customers.

"Coordinated Disclosure"

We expect that in an attempt to deflect from Lemonade's negligence, it will emphasize that Muddy Waters did not follow the practice of coordinated disclosure, which would have involved us secretly informing Lemonade of the vulnerability and providing it with a reasonable timeline to address it.

Coordinated disclosure is an abject failure. One need only look at the constant drumbeat of news about catastrophic breaches, such as those at SolarWinds and the Colonial Pipeline, to see that time and again, the stewards of our information economy are failing to expend the resources to adequately protect the United States from predators. The state of play is that you stewards assume you'll get a chance to sweep your negligence under the rug when informed of it through coordinated disclosure. You're willing to take your chances with respect to security breaches that become known, with the worst case seemingly being that you'll call in a crisis PR firm to help you craft statements telling everybody that "Securing our customers' information is our top priority".

I have tried other means to hold companies accountable for data breaches, yet have been frustrated in doing so. After being informed that my PII might have been compromised in the Equifax breach, I individually sued Equifax and certain executives, wanting to depose them and understand how they could have failed so spectacularly. Unfortunately the court consolidated my action with the class action, and I received no such relief.

After being revolted for years by the indifference to security shown by companies such as Lemonade, I have concluded that the only way to make a difference is for people like you to be held publicly accountable.

Lemonade.com Security Vulnerability: Scope, Impact, and Remediation

We found a Stored Session Fixation Vulnerability in Lemonade's insurance quoting system. We believe that a vulnerability such as this would typically receive a Common Vulnerability Scoring System (CVSS) score of 10, indicating a critical security risk.

We believe that all Lemonade customers from July 2020 to the present are potentially affected. The scope of the potential damage includes all Lemonade API integration partners, as well as all customers who have submitted PII to Lemonade integration partners via the Lemonade API.

The successful exploitation of this vulnerability apparently results in the disclosure of PII and the

complete compromise of the victim's Lemonade account, including the ability for an attacker to edit account details and apply for or change coverage.

It is unknown whether Lemonade data has been obtained by other crawlers (outside of Google, Bing, and Wayback Machine), by malicious parties, or unintentionally by other users. Due to the ease with which a crawler could inadvertently stumble into a Lemonade user's account; how lucrative the data stored there could be for identity thieves; and the relatively sizeable Lemonade user base, we fear there could be numerous harmed parties, but we are unable to provide an estimate of impact size.

Similarly, we are unable to determine whether this vulnerability has breached Lemonade's infrastructure. This vulnerability can easily be leveraged in phishing campaigns to potentially commandeer user accounts or user data, so we view it to be likely that a breach has already occurred. Lemonade users should be notified and should be on alert for potential follow-up phishing or spearphishing attacks.

It is unknown how long it will take to remediate the vulnerability, scrub the Internet of all copies of stored PII that belongs to the victims, and restore user access. Lemonade should shut down its website, APIs, and mobile application until the vulnerability is verified as fixed by a qualified third party, as there are users currently at risk. We recommend that Stripe, Lemonade's credit card processing partner, also consider disengaging from any integrated systems and monitor its own systems for any indicators of fraud or anomalous behaviour.

Description of the Lemonade.com Vulnerability

[redacted]

[redacted]

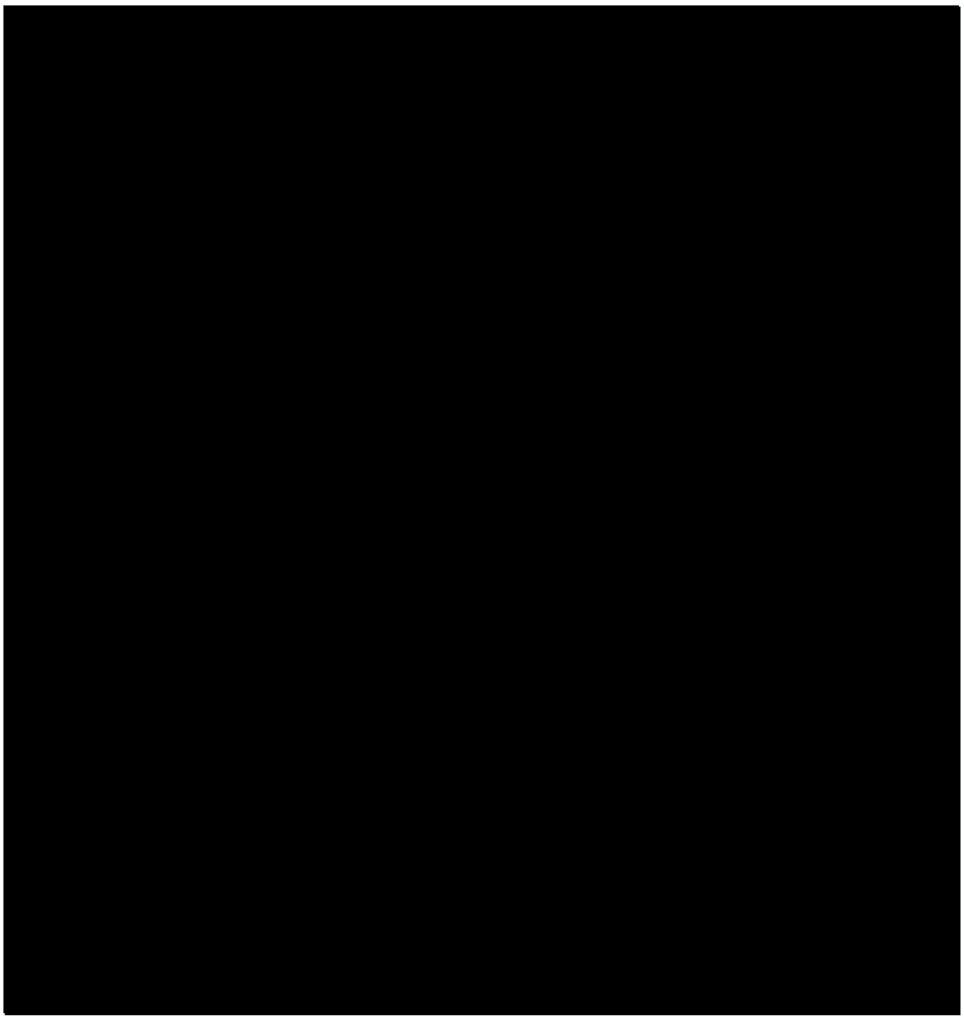
Steps to Reproduce Vulnerability

Reproducing the vulnerability is extremely easy:

[redacted]

Evidence

[redacted]



Conclusion

We note that another activist short seller, The Friendly Bear, has concluded Lemonade's attempt to position itself as an ESG investment is phony and insincere.[1] Based on this egregious failure to secure your customer data, it is hard to believe otherwise. Lemonade has not earned the trust necessary to operate a consumer facing insurance business.

Sincerely,

Carson Block
Muddy Waters Capital LLC

[1] https://friendlybearresearch.com/2020/12/31/how-lemonade-hijacked-the-esg-movement-to-pull-off-the-1-stock-promotion-of-2020/