Title

When Dirty Water is Labled Clean: Why The People of Flint Were Ignored

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Abstract: This paper examines epistemic hierarchies within regulatory science during the Flint Water Crisis, arguing it was not merely a bureaucratic failure but part of a broader pattern of colonial disposability that has historically rendered America's most vulnerable communities expendable.

INTRODUCTION

"The Flint water crisis is one of the most significant environmental contamination events in recent American history," writes Benjamin Pauli, a political scientist who has extensively studied the crisis. The preventable nature of the disaster, prolonged governmental inaction, and sweeping health consequences placed Flint on the national stage and generated extensive scholarship examining regulatory and political failures. Following a financial decision to change the city's water source and the implementation of flawed quality testing procedures, more than 100,000 residents were exposed to elevated levels of lead in their tap water (CDC, 2023). While individuals have been blamed for the disaster, many scholars have emphasized the systemic nature of the crisis. Lindsey J. Butler writes that investigators "determined that there was failure at every level of government," arguing that the Flint water crisis revealed widespread regulatory breakdowns related to "federal drinking water regulation, interpretation, and enforcement." However, focusing solely on bureaucratic or regulatory failure leaves an important question unanswered: why were warnings and physical evidence from Flint residents repeatedly ignored?

This paper examines the Flint water crisis through the lens of Sandra Harding's Standpoint Theory alongside the concept of disposability rooted in settler colonial governance (Harding, 1991). Harding's theory argues that knowledge is socially situated and that marginalized communities often possess critical insight because of their proximity to issues. Applying this framework to Flint reveals how regulatory testing practices prioritized institutional measurements while dismissing the lived experiences of residents. This hierarchy was, in part, shaped by the United States' historical legacy of colonial disposability, where certain communities are treated as more expendable than others. In Flint, emergency financial measures aimed at reducing municipal deficits prioritized cost-cutting over public safety, ultimately creating the conditions that allowed the disaster to unfold. By analyzing the command structure of the Michigan Department of Environmental Quality (MDEQ) alongside failures in water sampling procedures, this paper argues that the Flint crisis exposes a deeper hierarchy within regulatory science that cannot simply be explained by bureaucratic failures. This work is in partial fulfillment of the ENGR184 course using the blueprint curriculum in Ref [1,2] and captured in a collection [3].

METHODS

This paper employs knowledge from peer-reviewed literature, regulatory documentation, and public health analyses related to the Flint water crisis. Sources were identified using Google Scholar and the UCLA Library database through keywords. These included "Flint water crisis," "environmental racism," and "epistemic injustice." Priority was given to peer-reviewed journal articles and CDC publications from 2014-2024. Standpoint Theory was applied as a framework to examine hierarchies of credibility between lab based testing and community-reported knowledge. Concepts of settler colonial disposability were used to contextualize patterns of governmental action and uneven state support during the response to

the Flint Water Crisis. Google's Gemini was used to organize data into tables and ensure consistency in citing references.

RESULTS AND INTERPRETATION

Before the onset of lead poisoning symptoms, the Michigan Department of Environmental Quality (MDEQ) conducted lead testing to assess Flint's tap water quality. Initial samples reported lead concentrations of 6 ppb (CDC et al., 2023). Once residents began reporting health symptoms and inconsistencies between official reports and their lived experiences, community-based testing revealed levels exceeding 15 ppb. As Lindsey J. Butler, a researcher of environmental epistemology writes , "If this level is exceeded, a community water supplier must take specific actions, such as implementing corrosion control treatment or replacing lead service lines" (Butler, 2016). Yet despite these discrepancies between community findings and official testing results, no immediate corrective action was taken. Later investigations revealed that the procedures used to collect water samples had compromised the validity of the lab based results. Butler notes that "The Michigan Department of Environmental Quality (MDEQ) improperly instructed all Michigan community water suppliers to do a preflush of the tap the night before the sampling. This interfered with the validity of the first-draw sample for lead testing" (Butler, 2016). In line with other articles on the Flint water crisis, this demonstrates how specific procedural failures within regulatory systems allowed dangerous lead levels to go undetected.

However, framing the crisis as a technical or bureaucratic failure hides structures that allowed these procedures to be prioritized over the lived experiences of residents. The regulatory system inherently privileged laboratory-based measurements while dismissing other forms of embodied evidence. Through the lens of Sandra Harding's Standpoint Theory, this reveals an epistemic hierarchy in which institutional scientific measurements are treated as more legitimate than embodied knowledge from affected communities.

Kerstin Reibold provides insight into this dynamic when she writes that "epistemic injustice is rooted in deeply embedded patterns of cultural value on the basis of which institutional norms are constructed and enacted." In this sense, the Flint crisis demonstrates how institutional science can reinforce existing power structures by determining which forms of knowledge are considered credible. As Reibold further explains, "While no society or group avails itself of only one form of knowledge, the positivist, scientific form of knowledge can be called dominant in so far as it is assigned the highest credibility in most of today's societies and international institutions. It thereby enjoys the highest epistemic status and power in the institutions and public forums that serve as arenas of political, legal, and social power" (Reibold, 2025). This hierarchy of knowledge helps explain why hundreds of resident testimonies, visible water discoloration, and reported health effects were dismissed for so long (CDC, 2023). By prioritizing regulatory compliance and institutional testing procedures over embodied experience, the system created conditions in which the crisis could persist. Seen through this lens, the Flint water crisis rises above a regulatory failure and becomes an example of epistemic injustice embedded within regulatory science itself. This is crucial because instead of pointing the blame at specific cracks in the system, like many past papers have done, the hierarchical structure that enabled the harm is revealed.

Flint is only one example of many however. As stated above, this hierarchy is not random but rather a symptom of the system it was created within. To further examine how this hierarchy operates, it is useful to consider broader patterns of environmental harm in the United States. Table 1 illustrates several documented municipal lead contamination events between 2001 and 2016. While this is a small window of a larger picture, the patterns tell a story.

Table 1. Selected U.S. municipal lead contamination incidents (2001–2016) and associated demographic characteristics. Across cases, affected municipalities exhibit high minority population percentages and elevated poverty rates.

Location	Year(s)	Lead-Related Issue	% Minority Population	% Below Poverty Line
Washington, DC	2001–2004	Elevated blood lead levels linked to drinking water; severity publicly downplayed until exposed in 2003	61.5%	18.2%
Columbia, SC	2005	10 community water suppliers found non-compliant with Lead and Copper Rule (LCR)	48.3%	24.2%
Durham, NC	2006	Elevated blood lead levels in children linked to 20 ppb drinking water; levels normalized after switching water source	53.6%	18.1%
Greenville, NC	2006	Elevated blood lead levels in children linked to drinking water contamination	43.7%	30.7%
Jackson, MS	2015	Residents warned of high lead levels 6 months after discovery	81.6%	29.9%
Ithaca, NY	2016	Public drinking water shut off at all schools due to elevated lead levels	43.7%	30.7%

Note. The data populating this table is from the American Journal of Public Health, 2016.

While Flint received unprecedented public attention due to the scale of the crisis (Pauli et al., 2020), similar lead contamination incidents have repeatedly emerged in communities with large minority populations. In each case shown in Table 1, the affected municipality contains more than 40% minority residents and poverty rates that exceed national averages (around 10.6% in 2025, US Census Bureau 2025). Although correlation alone does not establish causation, the patterns raise important questions within underserved communities in general, not just in Flint. This pattern suggests that environmental risk is not distributed randomly but instead follows existing social hierarchies, where communities with less political and economic power experience slower regulatory response and greater exposure to environmental harm.

The framework of settler colonial governance, as described by Imani Perry in *Vexy Thing*, helps illuminate the social context in which these hierarchies develop. Perry writes that "modern systems of governance determine who is recognized as a person, who may possess property, and who may exercise sovereignty. Those outside these relations are more easily exposed to violence and disposability." It is outside the scope of this paper to explicitly define who currently falls within this framework but it is clear from Table 1 that there are trends: minorities and people experiencing poverty. The decision to change Flint's water source was made under the Michigan Emergency Manager Law, which allowed the governor to appoint an overseer after the Flint municipality accumulated a reported $25 million budget deficit. These managers reported directly to the governor and effectively bypassed locally elected officials. Under this governance structure, fiscal stabilization became the primary objective of municipal administration. In a city where 62.6% of residents are people of color and 41.6% live below the poverty line, the prioritization of budget recovery over water safety reflects the logic of disposability described by Perry. The authority to determine which communities receive protection or which are exposed to environmental harm rests within governance structures that may assign value to populations unevenly. Understanding the Flint crisis through this framework reveals that the contamination was not merely the result of individual mistakes or regulatory oversight. Rather, it illustrates how colonial structures of

governance combined with data hierarchies that privilege institutional over community knowledge can produce conditions where safety becomes secondary to economic and administrative priorities.

ENGAGEMENT PLAN

One limitation of many engagement strategies is their reliance on raising individual awareness rather than modifying the institutional systems that produce environmental knowledge. Addressing this imbalance requires interventions that integrate community-generated data directly into regulatory monitoring systems. One potential approach is the implementation of community-integrated water monitoring programs through state regulatory agencies. Under such a system, agencies such as the Michigan Department of Environmental Quality (MDEQ) could distribute standardized household water sampling kits to residents within municipalities that are considered high-risk due to aging infrastructure or socioeconomic vulnerability. These kits would follow established first-draw sampling protocols and would be accompanied by educational materials explaining sampling procedures and health risks associated with lead exposure. Residents would collect samples and return them to state laboratories for analysis. The resulting data would be incorporated into the agency's official monitoring datasets alongside traditional regulatory samples. This would have the additional benefit of significantly increasing spatial coverage of water quality data while simultaneously legitimizing community-generated evidence. A similar model was implemented during the Flint water crisis when independent researchers distributed testing kits to residents and documented widespread lead contamination (Edwards et al., 2015). However, because these efforts were conducted outside formal regulatory institutions, the resulting data initially struggled to influence policy decisions. Institutionalizing such programs within regulatory agencies would allow community-based monitoring to function as a recognized component of environmental governance rather than an external critique. From an engineering and regulatory perspective, this approach improves both data density and epistemic equity. Increasing the number of sampling locations enhances detection of localized contamination events, while incorporating community-generated samples helps correct the epistemic hierarchy identified earlier in this paper by recognizing residents as contributors to environmental monitoring systems.

CONCLUSION

This paper sought to implicate the frameworks of disposability and Standpoint Theory in what is often told as a simpler story of regulatory failure. The poisoning of Flint's residents was enabled by an epistemic hierarchy that systematically dismissed community knowledge in favor of institutional measurements, operating within a broader structure of settler colonial disposability that rendered certain lives more expendable in the wake of fiscal pressure. The patterns documented in Table 1 show that Flint is not an anomaly. Engagement strategies like take-home water sampling kits represent a meaningful step, but one drop in a much larger reservoir. These small gestures matter, however, because incremental change is how larger transformation begins. Ideas of disposability are baked into our governmental structure, but sending different messages is how that structure starts to shift. It is easier to let people suffer when no one asks how they are doing. But by inviting the lived experiences of those affected by crises, it becomes harder to justify ignoring them.

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