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**United States Court of Appeals  
for the Eighth Circuit**

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State of Minnesota,

*Plaintiff-Appellee,*

v.

American Petroleum Institute, et al.,

*Defendants-Appellants.*

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On Appeal from the United States District Court  
for the District of Minnesota  
Case No. 0:20-cv-01636-JRT  
(the Hon. John R. Tunheim, Chief District Judge)

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**BRIEF OF AMICI CURIAE ROBERT BRULLE,  
CENTER FOR CLIMATE INTEGRITY, JUSTIN FARRELL,  
BENJAMIN FRANTA, FRESH ENERGY, STEPHAN  
LEWANDOWSKY, MN350, MINNESOTA CENTER FOR  
ENVIRONMENTAL ADVOCACY, NAOMI ORESKES, GEOFFREY  
SUPRAN, and the UNION OF CONCERNED SCIENTISTS  
IN SUPPORT OF PLAINTIFF-APPELLEE AND AFFIRMANCE**

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## **CORPORATE DISCLOSURE STATEMENT**

In accordance with Federal Rule of Appellate Procedure 29(a)(4)(A), Amici Fresh Energy, MN350, Minnesota Center for Environmental Advocacy, Center for Climate Integrity, and Union of Concerned Scientists each certifies that it is a non-profit organization, that it does not have a parent corporation, and that no publicly held company has any ownership of the organization.

All other Amici are private individuals and not corporations.

## **IDENTITY AND INTEREST OF AMICUS CURIAE**

Individual Amici are scholars and scientists with strong interests, education, and experience in the environment and the science of climate change, with particular interest in public information and communication about climate change and how the public and public leaders learn about and understand climate change.

**Dr. Naomi Oreskes** is Professor of the History of Science and Affiliated Professor of Earth and Planetary Sciences at Harvard University. Professor Oreskes' research focuses on the earth and environmental sciences, with a particular interest in understanding scientific consensus and dissent. **Dr. Geoffrey Supran** is a Research Associate in the Department of the History of Science at Harvard University. Working alongside Prof. Oreskes, Supran's applied social science research investigates the history of climate communications and denial by fossil-fuel interests. **Dr. Robert Brulle** is a Visiting Professor of Environment and Society at Brown University, and an Emeritus Professor of Sociology and Environmental Science at Drexel University. His research focuses on U.S. environmental politics, critical theory, and the political and cultural dynamics of climate change. **Dr.**

**Justin Farrell** is a Professor in the School of Forestry and Environmental Science, the School of Management, and the Department of Sociology at Yale University. He studies environment, misinformation, rural inequality, and social movements using a range of methods from large-scale computational text analysis, network science, machine learning, and qualitative and ethnographic fieldwork.

**Dr. Benjamin Franta** is a Ph.D. Candidate in the Department of History at Stanford University, where he studies the history of climate science and fossil-fuel producers. He holds a separate Ph.D. in Applied Physics from Harvard University and a J.D. from Stanford Law School.

**Stephan Lewandowsky** is a Professor and Chair in Cognitive Science at the University of Bristol. His research examines the potential conflict between human cognition and the physics of the global climate.

**Fresh Energy** is a non-profit organization that shapes and drives bold policy solutions that ensure Minnesota enjoys good health, a vibrant economy, and thriving communities today and for generations to come. The organization advances innovative, practical global warming solutions to achieve a zero-carbon energy economy.

**MN350** is a non-profit organization that helps lead a movement of Minnesotans working to protect our climate for future generations, speed the transition to clean energy, and create an equitable and healthy future for all. MN350 is affiliated with the global organization 350.org and uses a range of methods, including policy advocacy, public events, political engagement, and direct action to dismantle the systems that led to the climate crisis.

**Minnesota Center for Environmental Advocacy** is a non-profit organization that uses science and the law to protect Minnesota's natural resources, its wildlife, and the health of its people. For over 40 years, MCEA has worked to protect and improve the quality of Minnesota's environment, including fighting climate change and its effects in the state.

**The Center for Climate Integrity** is a non-profit organization that works to empower communities and elected officials with the knowledge and tools they need to hold polluters accountable for their contributions to the climate crisis. Through campaigns, communications, and strategic legal support, the organization works to

ensure that the fossil-fuel industry pays its fair share of the costs of climate change.

**The Union of Concerned Scientists** is a national non-profit organization that puts rigorous, independent science to work to solve our planet's most pressing problems. The organization combines technical analysis and effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future.

Amici submit this brief because they understand that the conduct at the core of the Plaintiff-Appellee's Complaint is that the Defendants knowingly concealed and denied the hazards that would result from the normal use of their fossil-fuel products by misrepresenting those products and deliberately discrediting scientific information related to climate change. It is therefore critical that full documentation of these misrepresentations is available to the Court as it considers the arguments and assertions made by Defendants-Appellants.

All parties have consented to the filing of this brief. No party's counsel authored the brief in whole or in part, no party or party's counsel contributed money that was intended to fund preparing of submitting the brief, and no person other than Amici or their counsel

contributed money that was intended to fund preparing or submitting the brief.

## INTRODUCTION

At least 50 years ago, Defendants had information from their own internal research, as well as from the international scientific community, that the unabated extraction, production, promotion, and sale of their fossil-fuel products would endanger the public. Defendants failed to disclose this information or take steps to protect the public. Instead, they acted to conceal their knowledge and discredit climate science, running misleading marketing campaigns and funding scientists and third-party organizations to exaggerate scientific uncertainty and promote contrarian theories, in direct contradiction to their research and actions taken to protect their assets from climate change impacts.

Defendants' coordinated, multi-front effort, demonstrated by their own documents and actions, justifies the claims that the State of Minnesota has asserted here as Plaintiff. As early as the late 1950s and no later than 1968, Defendants had actual knowledge of the risks associated with fossil fuels. In the decades that followed, Defendants took affirmative steps to sow doubt and uncertainty, in part by funding contrarian science that advanced alternative theories. While they told

Minnesotans that there was no reason for concern, Defendants took climate risks into account in managing their own infrastructure—for example, by raising the height of their oil rigs to account for rising sea levels. In taking these fraudulent, deceptive, and misleading actions, Defendants violated Minnesota’s state consumer protection statutes, as alleged by Plaintiff, and therefore should be held liable.

**I. DEFENDANTS HAD ACTUAL KNOWLEDGE OF THE RISKS ASSOCIATED WITH THEIR FOSSIL-FUEL PRODUCTS**

**A. Defendants had early knowledge that fossil-fuel products were increasing atmospheric CO<sub>2</sub> concentrations, with potentially “catastrophic” consequences.**

Defendants ExxonMobil (Exxon) and Koch Industries, Inc. (Koch) knew about the potential risks associated with their products decades ago, independently and through their membership and involvement in trade associations, such as Defendant American Petroleum Institute (API), American Fuel and Petrochemical Manufacturers, and the National Association of Manufacturers.

API was aware of research on carbon dioxide as early as 1954. At that time, Harrison Brown and other scientists at the California Institute of Technology measured and assessed increased CO<sub>2</sub>

concentrations in the atmosphere.<sup>1</sup> Although the results were not published, API and other researchers within the petroleum industry were aware of this research.<sup>2</sup> In 1957, Roger Revelle and Hans Suess at the Scripps Institute of Oceanography published a paper predicting large increases in atmospheric CO<sub>2</sub> if fossil-fuel production continued unabated.<sup>3</sup> Shortly thereafter, H.R. Brannon of Humble Oil (now Exxon) published research on the same question. His conclusions were in “excellent agreement” with Brown’s findings: fossil-fuel combustion increased atmospheric CO<sub>2</sub>.<sup>4</sup>

In 1959, physicist Edward Teller delivered the earliest known warning of the dangers of global warming to the petroleum industry, at a symposium held at Columbia University. Teller described the need to

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<sup>1</sup> Benjamin Franta, *Early oil industry knowledge of CO<sub>2</sub> and global warming*, 8 *Nature Climate Change* 1024 (Nov. 19, 2018), <https://www.nature.com/articles/s41558-018-0349-9>.

<sup>2</sup> *Id.*

<sup>3</sup> Roger Revelle and Hans Suess, *Carbon Dioxide Exchange Between Atmosphere and Ocean and the Question of an Increase of Atmospheric CO<sub>2</sub> during the Past Decades*, 9 *Tellus* 18 (1957), <http://www.tandfonline.com/doi/pdf/10.3402/tellusa.v9i1.9075?needAccess=true>.

<sup>4</sup> H.R. Brannon, A.C. Daughtry, D. Perry, W.W. Whitaker, and M. Williams, *Radiocarbon evidence on the dilution of atmospheric and oceanic carbon by carbon from fossil fuels*, 38 *Trans. Am. Geophys. Union* 643 (Oct. 1957).

find energy sources other than fossil fuels to mitigate these dangers, stating

a temperature rise corresponding to a 10 per cent increase in carbon dioxide will be sufficient to melt the icecap and submerge New York. All the coastal cities would be covered, and since a considerable percentage of the human race lives in coastal regions, I think that this chemical contamination is more serious than most people tend to believe.<sup>5</sup>

Then, in 1965, API President Frank Ikard delivered a presentation at the organization's annual meeting. Ikard informed API's membership that President Lyndon Johnson's Science Advisory Committee had predicted that fossil fuels could cause significant climatic changes by the end of the century.<sup>6</sup> He issued the following warning about the consequences of CO<sub>2</sub> pollution:

This report unquestionably will fan emotions, raise fears, and bring demands for action. The substance of the report is that there is still time to save the world's peoples from the catastrophic consequence of pollution, but time is running out.<sup>7</sup>

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<sup>5</sup> Edward Teller, *Energy patterns of the future*, 38 *Energy and Man: A Symposium* 53, 58 (1960).

<sup>6</sup> Frank Ikard, *Meeting the challenges of 1966*, Proceedings of the American Petroleum Institute 12-15 (1965), <http://www.climatefiles.com/trade-group/american-petroleum-institute/1965-api-president-meeting-the-challenges-of-1966/>.

<sup>7</sup> *Id.* at 13.

Over the next few years, scientific research continued to bolster the conclusion that the combustion of fossil fuels would be the primary driver of climate change. A 1968 Stanford Research Institute (SRI) report—commissioned by API and made available to API’s members, including predecessors of Exxon and Koch—warned that “rising levels of CO<sub>2</sub> would likely result in rising global temperatures and that, if temperatures increased significantly, the result could be melting ice caps, rising sea levels, warming oceans, and serious environmental damage on a global scale.”<sup>8</sup> The scientists acknowledged that the burning of fossil fuels provided the best explanation for an increase in atmospheric CO<sub>2</sub> levels.<sup>9</sup>

In 1969, API commissioned a supplemental report by SRI that provided a more detailed assessment on CO<sub>2</sub>. The report stated that atmospheric concentrations of CO<sub>2</sub> were steadily increasing, that 90% of this increase could be attributed to fossil-fuel combustion, and that

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<sup>8</sup> *Smoke and Fumes: The Legal and Evidentiary Basis for Holding Big Oil Accountable for the Climate Crisis*, Center for International Environmental Law 12 (Nov. 2017), <https://www.ciel.org/wp-content/uploads/2017/11/Smoke-Fumes-FINAL.pdf>.

<sup>9</sup> Elmer Robinson and R.C. Robbins, *Sources, Abundance, and Fate of Gaseous Atmospheric Pollutants*, Stanford Research Institute 3 (1968), <https://www.smokeandfumes.org/documents/document16>.

continued use of fossil fuels would further increase atmospheric CO<sub>2</sub>.<sup>10</sup> The report projected that, based on current fuel usage, CO<sub>2</sub> concentrations would reach 370 ppm by 2000—exactly what they turned out to be.<sup>11</sup> All of this research was summarized and shared with API members, including predecessors of Exxon and Koch.<sup>12</sup>

A 1977 presentation and 1978 briefing by senior Exxon scientist James F. Black warned the Exxon Corporation Management Committee that CO<sub>2</sub> concentrations were building in the Earth's atmosphere at an increasing rate, that CO<sub>2</sub> emissions were attributable to fossil fuels, and that CO<sub>2</sub> would contribute to global warming.<sup>13</sup> Speaking to the emerging scientific consensus on climate change at the time, Black acknowledged that there was general scientific agreement that CO<sub>2</sub>

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<sup>10</sup> *Smoke and Fumes*, *supra* note 8, at 12.

<sup>11</sup> *Global Mean CO<sub>2</sub> Mixing Ratios (ppm): Observations*, NASA Goddard Institute for Space Studies, <https://data.giss.nasa.gov/modelforce/ghgases/Fig1A.ext.txt> (last visited Jan. 25, 2019).

<sup>12</sup> *Environmental Research, A Status Report*, American Petroleum Institute (Jan. 1972), <http://files.eric.ed.gov/fulltext/ED066339.pdf>.

<sup>13</sup> Memo from J.F. Black to F.G. Turpin re The Greenhouse Effect, Exxon Research and Engineering Company 3 (June 6, 1978), <http://www.climatefiles.com/exxonmobil/1978-exxon-memo-on-greenhouse-effect-for-exxon-corporation-management-committee/>.

released from the burning of fossil fuels was likely influencing global climate, and stated:

Present thinking holds that man has a time window of five to ten years before the need for hard decisions regarding changes in energy strategies might become critical.<sup>14</sup>

Black expressed no uncertainty as to whether the burning of fossil fuels would cause climate change. Former Exxon scientist Ed Garvey described the situation as follows: “By the late 1970s, global warming was no longer speculative.”<sup>15</sup> In another interview, Garvey added: “The issue was not were we going to have a problem, the issue was simply how soon and how fast and how bad was it going to be. Not if.”<sup>16</sup>

In sum, through the 1950s and 1960s, there was agreement among industry, government, and academic scientists that the observed increase in CO<sub>2</sub> concentrations, caused by fossil-fuel combustion, would likely increase average global temperatures, and therefore a

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<sup>14</sup> *Id.* at 3.

<sup>15</sup> James Osborne, *INTERVIEW: Former Exxon scientist on oil giant's 1970s climate change research*, Dallas News (Oct. 2015), <https://www.dallasnews.com/business/business/2015/10/02/interview-former-exxon-scientist-on-oil-giants-1970s-climate-change-research>.

<sup>16</sup> Amy Westervelt, *Drilled: A True Crime Podcast about Climate Change*, Episode 1, The Bell Labs of Energy (interview with Ed Garvey at 11:10) (Nov. 14, 2018), <https://www.criticalfrequency.org/drilled>.

variety of climate-related impacts. By the late 1970s, there was a general scientific consensus that this would occur.

**B. Defendants conducted their own climate science research confirming that fossil-fuel combustion was increasing atmospheric CO<sub>2</sub> concentrations, thereby heating the planet.**

From the late 1970s through early 1980s, Defendants' own research repeatedly confirmed the findings of leading scientists and institutions studying climate change.<sup>17</sup>

Exxon was particularly active in the growing field of climate science. Following warnings by Black and others, Exxon launched an ambitious research program to study the environmental effects of greenhouse gases. The company assembled a team of scientists, modelers, and mathematicians to deepen the company's understanding of an environmental problem that posed an existential threat to its business interests.<sup>18</sup> As Exxon senior scientist Morrel Cohen explained:

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<sup>17</sup> Between 1983-84, Exxon's researchers published their results in at least three peer-reviewed papers in the *Journal of the Atmospheric Sciences* and *American Geophysical Union*. A list of "Exxon Mobil Contributed Publications" from 1983-2014 is available at: [https://cdn.exxonmobil.com/~media/global/files/energy-and-environment/climate\\_peer\\_reviewed\\_publications\\_1980s\\_forward.pdf](https://cdn.exxonmobil.com/~media/global/files/energy-and-environment/climate_peer_reviewed_publications_1980s_forward.pdf).

<sup>18</sup> Geoffrey Supran and Naomi Oreskes, *Assessing ExxonMobil's climate change communications (1977-2014)*, 12(8) Environmental Research

“Exxon was trying to become a research power in the energy industry the way the Bell Labs was in the communications industry.”<sup>19</sup> The research program included both empirical CO<sub>2</sub> sampling and rigorous climate modeling, and was perceived by those within the industry as being at the cutting edge of research into what was then known as the “greenhouse effect.” By 1982, Exxon’s scientists, in collaboration with other industry scientists, had created climate models that confirmed the scientific consensus that the continued increase of CO<sub>2</sub> from fossil fuels would cause significant global warming by the middle of the 21st century, with “potentially catastrophic” effects, and they communicated these findings internally.<sup>20</sup>

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Letters 084019 (Aug. 23, 2017), <http://iopscience.iop.org/article/10.1088/1748-9326/aa815f>; see also Geoffrey Supran and Naomi Oreskes, *Addendum to ‘Assessing ExxonMobil’s climate change communications (1977–2014)’*, 15(11) Environmental Research Letters 119401 (Oct. 30, 2020), <https://iopscience.iop.org/article/10.1088/1748-9326/ab89d5>.

<sup>19</sup> Westervelt, *supra* note 16 (interview with Morrell Cohen at 6:21); see also John Walsh, *Exxon Builds on Basic Research*, 225 Science 1001 (1984), <https://www.documentcloud.org/documents/5690867-1984-Walsh-Exxon-Builds-on-Basic-Research.html>.

<sup>20</sup> See e.g. Memo from M.B. Glaser to Exxon Management re CO<sub>2</sub> “Greenhouse” Effect, Exxon Research and Engineering Company 11 (Nov. 12, 1982), <http://insideclimatenews.org/sites/default/files/documents/1982%20Exxon%20Primer%20on%20CO2%20Greenhouse%20Effect.pdf>.

In 1979, W.L. Ferrall described the findings of an internal Exxon study, concluding that the “increase [in CO<sub>2</sub> concentration] is due to fossil fuel combustion,” that “[i]ncreasing CO<sub>2</sub> concentration will cause a warming of the earth’s surface,” and that the “present trend of fossil fuel consumption will cause dramatic environmental effects before the year 2050.”<sup>21</sup> With a doubling of CO<sub>2</sub> concentration from an 1860 baseline, Ferrall predicted that “ocean levels would rise four feet” and the “Arctic Ocean would be ice free for at least six months each year, causing major shifts in weather patterns in the northern hemisphere.”<sup>22</sup>

A 1980 presentation by Dr. John Laurman to the API Task Force on “The CO<sub>2</sub> Problem” identified the “scientific consensus on the potential for large future climatic response to increased CO<sub>2</sub> levels” as a reason for concern, and stated that there was “strong empirical evidence” that climate change was caused by fossil-fuel combustion.<sup>23</sup>

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<sup>21</sup> Memo from W.L. Ferrall to R.L. Hirsch re “Controlling Atmospheric CO<sub>2</sub>”, Exxon Research and Engineering Company 1 (Oct. 16, 1979), <http://insideclimatenews.org/sites/default/files/documents/CO2%20and%20Fuel%20Use%20Projections.pdf>.

<sup>22</sup> *Id.*, Appendix A at 1.

<sup>23</sup> *AQ-9 Task Force Meeting Minutes*, American Petroleum Institute, Attachment B at 1-2 (Mar. 18, 1980), <https://insideclimatenews.org/sites/default/files/documents/AQ-9%20Task%20Force%20Meeting%20%281980%29.pdf>.

Laurman also warned the API Task Force that foreseeable temperature increases could have “major economic consequences” and “globally catastrophic effects.”<sup>24</sup>

By 1981, Exxon had internally acknowledged the risks of climate change and the role that fossil-fuel combustion played in increasing CO<sub>2</sub> concentrations. In an internal memorandum outlining Exxon’s position on the CO<sub>2</sub> greenhouse effect, Exxon scientist Henry Shaw wrote that a doubling of CO<sub>2</sub> would result in a 3°C increase in average global temperature and a 10°C increase at the poles, causing major shifts in rainfall/agriculture and the melting of polar ice.<sup>25</sup> Also in 1981, Roger Cohen, director of Exxon’s Theoretical and Mathematical Sciences Laboratory, warned about the magnitude of climate change: “we will unambiguously recognize the threat by the year 2000 because of advances in climate modeling and the beginning of real experimental confirmation of the CO<sub>2</sub> effect.”<sup>26</sup> He added that “it is distinctly possible

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<sup>24</sup> *Id.*, Attachment B at 5.

<sup>25</sup> Memo from Henry Shaw to Dr. E.E. David, Jr. re “CO<sub>2</sub> Position Statement”, Exxon Inter-Office Correspondence 2 (May 15, 1981), <https://insideclimatenews.org/sites/default/files/documents/Exxon%20Position%20on%20CO2%20%281981%29.pdf>.

<sup>26</sup> Memo from R.W. Cohen to W. Glass re possible “catastrophic” effect of CO<sub>2</sub>, Exxon Corporation 1 (Aug. 18, 1981),

that [Exxon Planning Division's] scenario will later produce effects which will indeed be catastrophic (at least for a substantial fraction of the earth's population)."<sup>27</sup>

In 1982, Cohen summarized the findings of Exxon's research in climate modeling, stating that "over the past several years *a clear scientific consensus has emerged* regarding the expected climatic effects of increased atmospheric CO<sub>2</sub>."<sup>28</sup> Cohen acknowledged that Exxon shared the views of the mainstream science community, stating that there is "unanimous agreement in the scientific community that a temperature increase of this magnitude would bring about significant changes in the earth's climate," and that Exxon's findings were "consistent with the published predictions of more complex climate models" and "in accord with the scientific consensus on the effect of increased atmospheric CO<sub>2</sub> on climate."<sup>29</sup>

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<http://www.climatefiles.com/exxonmobil/1981-exxon-memo-on-possible-emission-consequences-of-fossil-fuel-consumption>.

<sup>27</sup> *Id.*

<sup>28</sup> Memo from R. W. Cohen to A.M. Natkin, Exxon Research and Engineering Company 1 (Sept. 2, 1982), <http://www.climatefiles.com/exxonmobil/1982-exxon-memo-summarizing-climate-modeling-and-co2-greenhouse-effect-research/> (emphasis added).

<sup>29</sup> *Id.* at 2.

Internal documents from the 1980s provide further evidence that Exxon and others acknowledged that the threat of climate change was real, that it was caused by fossil fuels, and that it would significantly affect the environment and human health. Notably, a 1982 corporate primer—circulated internally to Exxon management—recognized the need for “major reductions in fossil fuel combustion” to mitigate global warming. Absent such reductions, “there are some potentially catastrophic events that must be considered ... [O]nce the effects are measurable, they might not be reversible[.]”<sup>30</sup>

The 1982 Exxon primer predicted a doubling of CO<sub>2</sub> concentrations (above pre-industrial levels) by 2060 and increased temperatures of 2-4°C (above 1982 levels) by the end of the 21st century. It also assessed, in detail, the “potentially catastrophic” impacts of global warming, including primary impacts on physical and biological systems and the secondary impacts of migration and famine.<sup>31</sup>

In the 1970s and 1980s, Exxon and API pursued cutting-edge research and amassed considerable data on climate change, which was

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<sup>30</sup> Memo from M.B. Glaser to Exxon Management re CO<sub>2</sub> “Greenhouse” Effect, *supra* note 20, at 2 and 11.

<sup>31</sup> *Id.* at 12-14.

widely distributed to Koch's predecessors and other API members. This body of research confirmed their earlier knowledge and led to the undeniable conclusion that continued fossil-fuel production and use would change the climate irreversibly and catastrophically. Armed with this information, Defendants faced a turning point in the early 1980s.

## **II. DEFENDANTS TOOK PROACTIVE STEPS TO CONCEAL THEIR KNOWLEDGE AND DISCREDIT CLIMATE SCIENCE**

Despite acknowledging that an increasing level of atmospheric CO<sub>2</sub> due to fossil-fuel burning posed a considerable threat, Defendants decided not to take steps to prevent the risks of climate change. Instead, they stopped funding major climate research and launched a campaign to discredit climate science and delay actions perceived as contrary to their business interests.<sup>32</sup> To carry out this campaign, Defendants employed multiple tactics. They developed public-relations strategies that contradicted what they themselves had learned from

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<sup>32</sup> Memo from A.M. Natkin to H.N. Weinberg re CRL/CO<sub>2</sub> Greenhouse Program, Exxon Corporation 1 (June 18, 1982), [http://insideclimatenews.org/sites/default/files/documents/Budget%20Cutting%20Memo%20\(1982\).pdf](http://insideclimatenews.org/sites/default/files/documents/Budget%20Cutting%20Memo%20(1982).pdf).

climate science. They unleashed communications campaigns that promoted public doubt and downplayed the threats of climate change. And they funded individuals, organizations, and research agendas that sought to discredit the growing body of publicly available climate science.

**A. Defendants developed sophisticated public-relations strategies to deny the risks of climate change and create doubt about the scientific consensus of global warming.**

Defendants responded to the public-policy issues raised by their products by concealing and denying the known hazards, in contradiction to earlier internal acknowledgments and statements by industry scientists and executives. The internal memoranda and statements described below demonstrate this marked shift in the industry's position on climate science.

In a 1988 internal memo, Exxon acknowledged that atmospheric CO<sub>2</sub> concentrations were increasing and could double in 100 years, that the combustion of fossil fuels was emitting five billion gigatons of CO<sub>2</sub> per year, and that the “[g]reenhouse effect may be one of the most

significant environmental issues for the 1990s.”<sup>33</sup> But in this same memo, Exxon identified that its position would be to “[e]mphasize the uncertainty in scientific conclusions regarding the potential enhanced Greenhouse effect[.]”<sup>34</sup>

Industry-affiliated associations and groups, such as the Global Climate Coalition (GCC), exerted significant influence on their members through their communications and strategy. Established in 1989, the GCC identified itself as “an organization of business trade associations and private companies . . . to coordinate business participation in the scientific and policy debate on the global climate change issue.”<sup>35</sup> But in reality, the group opposed greenhouse gas regulation through lobbying, funding of front groups, denial and disinformation campaigns, and other tactics.

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<sup>33</sup> Memo from Joseph Carlson to DGL re The Greenhouse Effect 2 (Aug. 3, 1988), <http://www.climatefiles.com/exxonmobil/566/>.

<sup>34</sup> *Id.* at 7.

<sup>35</sup> *Global Climate Coalition: An Overview*, Global Climate Coalition 1 (Nov. 1996), <http://www.climatefiles.com/denial-groups/global-climate-coalition-collection/1996-global-climate-coalition-overview/>.

In 1993, the GCC hired the public-relations firm E. Bruce Harrison to develop and execute a communications plan,<sup>36</sup> which was implemented by API, the National Association of Manufacturers, the Chamber of Commerce, and other associations or coalitions of which Exxon and Koch were members. The central elements of this plan were to emphasize the potential economic costs of mitigation and to cast doubt on the science.<sup>37</sup>

In 1996, following publication of the United Nations' Intergovernmental Panel on Climate Change's (IPCC) Second Assessment Report, the GCC developed a primer that provided an overview of the group's position on climate change. While acknowledging that global warming was happening, the GCC claimed that there was significant uncertainty as to its cause:

The GCC believes that the preponderance of the evidence indicates that most, if not all, of the observed warming is part of a natural warming trend which began approximately 400 years ago. If there is an anthropogenic component to this observed warming, the GCC believes that it must be

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<sup>36</sup> O'Dwyer's Directory of Public Relations Firms, J.R. O'Dwyer Co., New York, NY (1995), at 85.

<sup>37</sup> See e.g. Benjamin Franta, *Weaponizing economics: Big Oil, economic consultants, and climate policy delay*, Environmental Politics (2021) (in press).

very small and must be superimposed on a much larger natural warming trend.<sup>38</sup>

This statement not only stands in contradiction to the internal memos and peer-reviewed papers published by the industry's own scientists but also to the final internal draft of the GCC primer itself, which stated that the "scientific basis for the Greenhouse Effect and the potential impacts of human emissions of greenhouse gases such as CO<sub>2</sub> on climate is well established and cannot be denied."<sup>39</sup> This language was removed before final publication. The internal draft also included a section discussing how contrarian theories failed to "offer convincing arguments against the conventional model of greenhouse gas emission-induced climate change."<sup>40</sup> This section was also removed by the GCC before final publication.

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<sup>38</sup> *Global Climate Coalition: An Overview*, *supra* note 35, at 2.

<sup>39</sup> Memo from Gregory J. Dana to AIAM Technical Committee re Global Climate Coalition (GCC) – Primer on Climate Change Science – Final Draft, Association of International Automobile Manufacturers 5 (Jan. 18, 1996), <http://www.climatefiles.com/denial-groups/global-climate-coalition-collection/global-climate-coalition-draft-primer/>.

<sup>40</sup> *Id.*

As their memoranda and statements show, Defendants and the trade associations to which they belonged deliberately fled from their prior research efforts and embraced a strategy of uncertainty and delay.

**B. Defendants engaged in public-communications campaigns designed to manufacture doubt and downplay the threats of climate change.**

Public-communications efforts were a key part of Defendants' strategy. Defendants Exxon and Koch, individually and through their membership in trade associations including Defendant API, launched campaigns that directly contradicted earlier statements recognizing a general scientific consensus on climate change and the magnitude of its effects.

For example, in 1996, Exxon issued a publication titled "Global warming: who's right? Facts about a debate that's turned up more questions than answers," in which Exxon CEO Lee Raymond stated that "taking drastic action immediately is unnecessary since many scientists agree there's ample time to better understand climate systems." The publication misleadingly characterized the greenhouse effect as "unquestionably real and definitely a good thing," and as "what makes the earth's atmosphere livable." Directly contradicting the

company's internal reports and peer-reviewed science, the publication attributed the increase in global temperature to "natural fluctuations that occur over long periods of time" rather than to anthropogenic sources.<sup>41</sup>

Also in 1996, API published a book titled "Reinventing Energy: Making the Right Choices," which stated that "there is no persuasive basis for forcing Americans to dramatically change their lifestyles to use less oil."<sup>42</sup> The book denied the human connection to climate change, stating that "no conclusive—or even strongly suggestive—scientific evidence exists that human activities are significantly affecting sea levels, rainfall, surface temperatures or the intensity and frequency of storms."<sup>43</sup>

In addition to these public statements, Defendants developed, implemented and funded a strategy of shifting "America's social

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<sup>41</sup> *Global warming: who's right? Facts about a debate that's turned up more questions than answers*, Exxon Corporation 5 (1996), <http://www.climatefiles.com/exxonmobil/global-warming-who-is-right-1996/>.

<sup>42</sup> Sally Brain Gentile et al., *Reinventing Energy: Making the Right Choices*, American Petroleum Institute 77 (1996), <http://www.climatefiles.com/trade-group/american-petroleum-institute/1996-reinventing-energy/>.

<sup>43</sup> *Id.*

consciousness” by targeting specific people or groups with tailored messages.<sup>44</sup> From 1972 through 2014, Exxon ran advertorials (paid advertisements styled like editorials) in newspapers.<sup>45</sup> The company bought these advertorials because they wanted the “public to know where [they] stand” on climate change and other issues.<sup>46</sup>

In a peer-reviewed study, Dr. Supran and Dr. Oreskes compared Exxon’s internal and peer-reviewed scientific papers to its non-peer-reviewed external public communications (including 36 *Times* advertorials from 1989 to 2004), finding a stark contrast between the way that the two sets of documents characterized climate change. Dr. Supran and Dr. Oreskes found that 83% of peer-reviewed papers and 80% of internal documents acknowledged that climate change is real

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<sup>44</sup> See e.g. *Evolution of Mobil’s Public Affairs Programs 1970-81*, Mobil 2, <https://www.documentcloud.org/documents/5396414-Reduced-Evolution-of-Mobil-Public-Affairs-Program.html> (last visited Jan. 25, 2019).

<sup>45</sup> *Exxon and Mobil Ads*, Polluter Watch, <http://polluterwatch.org/exxon-and-mobil-ads> (last visited Jan. 25, 2019).

<sup>46</sup> Mobil, *CNN and the value of instant replay*, New York Times (Oct. 16, 1997), <http://www.documentcloud.org/documents/705559-mob-nyt-1997-oct-16-cnnslam.html>.

and human-caused, yet only 12% of advertorials did so, with 81% instead expressing doubt.<sup>47</sup>

In 1996, API created the Global Climate Science Communications Team (GCSCT), a small group of prominent representatives of fossil-fuel companies, public-relations firms, and industry front groups with the mission of undermining the global scientific consensus that climate change was real and human-caused. In 1998, after the Kyoto Protocol was signed, the GCSCT developed a plan to launch a “program to inform the media about uncertainties in climate science; to generate national, regional and local media on the scientific uncertainties, and thereby educate and inform the public, stimulating them to raise questions with policymakers.”<sup>48</sup>

In contrast to what the industry’s scientists had acknowledged internally and in peer-reviewed literature for more than two decades, the API strategy memo declared “it is not known for sure whether (a)

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<sup>47</sup> Supran and Oreskes, *supra* note 18, at 1.

<sup>48</sup> *Global Climate Science Communications Team Action Plan*, American Petroleum Institute 4 (Apr. 3, 1998), <http://www.climatefiles.com/trade-group/american-petroleum-institute/1998-global-climate-science-communications-team-action-plan/>.

climate change actually is occurring, or (b) if it is, whether humans really have any influence on it.”<sup>49</sup> The memo articulated the association’s intent to undermine the scientific consensus on climate change, stating that “Victory Will Be Achieved When”:

- Average citizens “understand” (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the “conventional wisdom.”
- Media “understands” (recognizes) uncertainties in climate science.<sup>50</sup>

Exxon and API contributed to the development of the plan through their representatives, Randy Randol and Joseph Walker, respectively. Exxon also exerted influence through Steve Milloy, the executive director of a front group called The Advancement of Sound Science Coalition, which was funded in part by the company. The roadmap further identified an array of industry trade associations and front groups, fossil-fuel companies, and think tanks that would underwrite and execute the plan, several of which were funded by Koch. These groups included API, the Business Round Table, the Edison Electric Institute, the Independent Petroleum Association of America,

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<sup>49</sup> *Id.* at 1.

<sup>50</sup> *Id.* at 3.

the National Mining Association, the American Legislative Exchange Council, the Committee for a Constructive Tomorrow, the Competitive Enterprise Institute, Frontiers of Freedom, and the George C. Marshall Institute.<sup>51</sup>

Koch also launched campaigns and made its own statements to manufacture doubt and uncertainty in the public's understanding of climate science. As described in a 2006 memorandum, Koch worked to develop a film that would counter *An Inconvenient Truth* and to finance a coalition of front groups that would be administered through the National Association of Manufacturers.<sup>52</sup> As recently as 2014, despite the overwhelming scientific consensus that human activity causes climate change, Koch lobbyist Phillip Ellender stated that “[w]hether or not the increases and fluctuations are anthropologic or not is still a question.” Another senior executive called global warming a “hoax

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<sup>51</sup> *Id.* at 2.

<sup>52</sup> Memorandum from Stanley Lewandowski, Intermountain Rural Electric Association (July 17, 2006), <https://www.documentcloud.org/documents/4519366-2006-Intermountain-Rural-Electric-Assoc-IREA-Memo#document/p2/a433707>.

invented by liberal politicians” to unite the public against a common enemy in the aftermath of the fall of the Soviet Union.<sup>53</sup>

While their strategies may have evolved, Defendants’ campaigns of deception continue to this day, in large part through social media. In August 2021, the organization InfluenceMap released a report analyzing an advertising campaign undertaken by 25 fossil fuel companies (led by Exxon). These companies put out a series of Facebook ads that were viewed millions of times in 2020 alone.<sup>54</sup> The report states that “[m]any of these ads either contained misleading content or present information that was misaligned with the science of climate change according to both the [IPCC]’s and the International Energy Agency’s reports on reaching net zero by 2050.”<sup>55</sup>

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<sup>53</sup> Christopher Leonard, *Kochland: The Secret History of Koch Industries and Corporate Power in America* (2019), 401.

<sup>54</sup> Bill McKibben, *The U.N. Climate Panel Tries to Cut Through the Smog*, *The New Yorker* (Aug. 11, 2021), <https://www.newyorker.com/news/annals-of-a-warming-planet/the-un-climate-panel-tries-to-cut-through-the-smog>.

<sup>55</sup> Influence Map, *Climate Change and Digital Advertising: The Oil & Gas Sector’s Digital Advertising Strategy* (Aug. 2021), [https://influencemap.org/site/data/000/822/InfluenceMap\\_ClimateChange&DigitalAdvertisingReport\\_August2021.pdf](https://influencemap.org/site/data/000/822/InfluenceMap_ClimateChange&DigitalAdvertisingReport_August2021.pdf).

**C. Defendants funded individuals, organizations, and research to discredit the growing body of publicly available climate science.**

Martin Hoffert, an Exxon scientist who authored several of Exxon's peer-reviewed papers on the CO<sub>2</sub> greenhouse effect, noted the conflict between those peer-reviewed papers and the funding that Exxon provided to deniers of climate change:

Even though we were writing all these papers which were basically supporting the idea that climate change from CO<sub>2</sub> emissions was going to change the climate of the earth according to our best scientific understanding, the front office which was concerned with promoting the products of the company was also supporting people that we call climate change deniers... they were giving millions of dollars to other entities to support the idea that the CO<sub>2</sub> greenhouse [effect] was a hoax.<sup>56</sup>

Defendants advanced these arguments and contrarian theories to manufacture public uncertainty and undermine climate science. For example, Defendants funded aerospace engineer Dr. Wei-Hock Soon to publish and promote research asserting that solar variability is the primary cause of global warming, even though even the industry-affiliated GCC had previously dismissed this theory as “unconvincing.”

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<sup>56</sup> Westervelt, *supra* note 16, Episode 2, The Turn (interview with Martin Hoffert at 11:07) (Nov. 15, 2018).

Between 2001 and 2012, Soon received more than \$1.2 million from the fossil fuel industry (\$838,717 of which came from Defendants) to conduct research purported to be independent and to promote climate change theories that Defendants knew were not supported by the peer-reviewed scientific literature, including publications by their own scientists.<sup>57</sup>

From 1991 to at least 2007, API hired economic consultants to manipulate the public's perception of the cost of climate policy. These consultants used models that inflated the predicted costs while ignoring the benefits of avoiding climate change. The conclusions of these API-commissioned studies were then widely communicated to policymakers and the public, often without acknowledging API's role in creating them or the limitations of the models.<sup>58</sup>

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<sup>57</sup> Kathy Mulvey and Seth Shulman, *The Climate Deception Dossiers: Internal Fossil Fuel Industry Memos Reveal Decades of Corporate Disinformation*, Union of Concerned Scientists (July 2015), at 6; Sabrina Shankman, Willie Soon: 'Too Much Ice Is Really Bad for Polar Bears' (Feb. 24, 2015), Inside Climate News, <https://insideclimatenews.org/news/24022015/willie-soon-too-much-ice-really-bad-polar-bears/>.

<sup>58</sup> Franta, *supra* note 37.

In addition to providing funding to scientists and economists to promote invalid or contrarian theories, Defendants funded industry front groups that denied and sought to discredit climate science. From 1997 through 2018, Koch spent at least \$145 million funding 90 organizations—including the Cato Institute, the Competitive Enterprise Institute, the Heritage Foundation, and the Freedom Foundation of Minnesota—that misrepresented and persistently sought to discredit the scientific consensus that Defendants’ fossil-fuel products were causing climate change.<sup>59</sup>

From 1998 through 2019, Exxon spent at least \$37 million funding 69 organizations that similarly denied and discredited climate science.<sup>60</sup> In June 2021, Exxon lobbyist Keith McCoy admitted to as much when he stated that the company “aggressively [fought] against some of the science” by using third-party “shadow groups.”<sup>61</sup>

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<sup>59</sup> *Koch Industries: Secretly Funding the Climate Denial Machine*, Greenpeace, <https://www.greenpeace.org/usa/ending-the-climate-crisis/climate-deniers/koch-industries/>.

<sup>60</sup> *ExxonMobil Foundation & Corporate Giving to Climate Change Denier & Obstructionist Organizations*, UCS (2019), <https://ucs-documents.s3.amazonaws.com/clean-energy/exxon-mobil-grants-1998-2019.pdf>.

<sup>61</sup> Lawrence Carter, *Inside Exxon’s Playbook: How America’s biggest oil company continues to oppose action on climate change*,

In 2007, Exxon pledged to stop funding climate-denier groups: “In 2008, we will discontinue contributions to several public policy research groups whose position on climate change could divert attention from the important discussion on how the world will secure the energy required for economic growth in an environmentally responsible manner.”<sup>62</sup>

In direct contradiction to this commitment and more recent ones in which Exxon claims to “not fund or support those who deny the reality of climate change,”<sup>63</sup> the company continues to fund individuals and groups that spread misinformation on climate science.<sup>64</sup> From 2008 through 2019, Exxon spent more than \$14 million on think tanks and lobbying groups that reject established climate science, spread misinformation, and oppose the company’s public positions on climate

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<https://unearthed.greenpeace.org/2021/06/30/exxon-climate-change-undercover/>.

<sup>62</sup> *2007 Corporate Citizenship Report*, ExxonMobil 39 (2007), <http://www.documentcloud.org/documents/2799777-ExxonMobil-2007-Corporate-Citizenship-Report.html>.

<sup>63</sup> Suzanne Goldenberg, *Exxon knew of climate change in 1981, email says – but it funded deniers for 27 more years*, *The Guardian* (July 8, 2015), <https://www.theguardian.com/environment/2015/jul/08/exxon-climate-change-1981-climate-denier-funding>.

<sup>64</sup> See Riley Dunlap and Aaron McCright, *Organized Climate Change Denial*, *The Oxford Handbook of Climate Change and Society* (2011).

policy,<sup>65</sup> a clear indication that Exxon continues to fund climate-science misinformation through third parties.<sup>66</sup>

Defendants' efforts to deny and discredit the scientific consensus on climate change have had their desired effect. A draft report authored by the IPCC (to be released in 2022) states:

Rhetoric on climate change and the undermining of science have contributed to misperceptions of the scientific consensus, uncertainty, unduly discounted risk and urgency, dissent, and, most importantly, polarized public support delaying mitigation and adaptation action, particularly in the US.<sup>67</sup>

### **III. EXXON MOVED TO PROTECT ITS OWN ASSETS FROM CLIMATE IMPACTS BASED ON THE SCIENCE THE COMPANY PUBLICLY DISCREDITED**

While running public campaigns to manufacture doubt about climate science and block regulatory action on climate change, Exxon

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<sup>65</sup> *ExxonMobil Foundation & Corporate Giving to Climate Change Denier & Obstructionist Organizations*, *supra* note 60.

<sup>66</sup> See Pattanun Achakulwisut et al., *Ending ExxonMobil Sponsorship of the American Geophysical Union* (Mar. 2016), <https://www.documentcloud.org/documents/2803702-AGU-Report-Final-20160325.html>.

<sup>67</sup> Zack Colman and Karl Mathiesen, *Climate scientists take swipe at Exxon Mobil, industry in leaked report*, Politico, July 2, 2021, <https://www.politico.com/news/2021/07/02/climate-scientists-exxon-mobile-report-497805>

took affirmative steps to protect its own assets from climate risks through infrastructure improvements.

By the mid-1990s, efforts by Exxon and other Defendants, described above, were reaching maturity, with millions of dollars per year being paid to scientists, economists, and front groups to assert that climate change was not real, that fossil fuels had nothing to do with any temperature increases that were being observed, and that a range of speculative hypotheses, which the Defendants knew were not valid, were responsible for global warming.

Yet in 1994, when planning the Europipe project jointly owned and operated by Exxon and other major fossil-fuel companies, the companies took sea level rise and other climate impacts into account in designing the natural-gas pipeline leading from a North Sea offshore platform to the German coast. In a document submitted to European authorities, the companies noted the impacts of sea level rise and the likely increase in the frequency of storms that would accompany climate change. While recognizing climate change as a “most uncertain

parameter,” they determined that the pipeline should be designed to account for climate impacts.<sup>68</sup>

In 1996, Mobil and Imperial Oil (now majority owned by Exxon), among others, took similar steps to protect their investments in the Sable gas field project off the coast of Nova Scotia, Canada. Company engineers designed and built a “collection of exploration and production facilities along the Nova Scotia coast that made structural allowances for rising temperatures and sea levels.”<sup>69</sup> As described in the design specifications, “[a]n estimated rise in water level, due to global warming, of 0.5 meters may be assumed” for the 25-year life of the Sable gas field project.<sup>70</sup>

Exxon took climate risks into account in planning and building major engineering and infrastructure projects, all while publicly denying the hazards of its products.

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<sup>68</sup> Amy Lieberman and Susanne Rust, *Big Oil braced for global warming while it fought regulations*, Los Angeles Times (Dec. 31, 2015), <http://graphics.latimes.com/oil-operations/>.

<sup>69</sup> *Id.*

<sup>70</sup> *Id.*

#### IV. CONCLUSION

Defendants had actual knowledge of the risks associated with their fossil-fuel products as early as the late 1950s and no later than 1968. Despite their knowledge of and expertise in climate science, Defendants promoted the use of their products to Minnesotans through fraudulent, deceptive, and misleading practices. In taking these actions, Defendants violated Minnesota's consumer protection statutes, as alleged by Plaintiff, and therefore should be held liable in Minnesota state courts. Amici urge this Court to affirm the decision below.

RESPECTFULLY SUBMITTED this 25th day of August, 2021.

By: *s/ Benjamin Gould*

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## CERTIFICATE OF COMPLIANCE

8th Cir. Case Number 21-1752

I am the attorney or self-represented party.

This brief contains **6,336 words**, excluding the items exempted by Fed. R. App. P. 32(f). The brief's type size and typeface comply with Fed. R. App. P. 32(a)(5) and (6).

I certify that this brief is an amicus brief and complies with the word limit of Fed. R. App. P. 29(a)(5).

*s/ Benjamin Gould*

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Benjamin Gould

## CERTIFICATE OF SERVICE

8th Cir. Case Number 21-1752

I hereby certify that I electronically filed the foregoing/attached **Brief of Amici Curiae Robert Brulle, Center for Climate Integrity, Justin Farrell, Benjamin Franta, Fresh Energy, Stephan Lewandowsky, MN350, Minnesota Center for Environmental Advocacy, Naomi Oreskes, Geoffrey Supran, and the Union of Concerned Scientists in Support of Plaintiff-Appellee and Affirmance** on this date with the Clerk of the Court for the United States Court of Appeals for the Eighth Circuit using the Appellate Electronic Filing system.

*s/ Benjamin Gould*

\_\_\_\_\_  
Benjamin Gould