

Case No. 18-16105

In the United States Court of Appeals
for the Ninth Circuit

OAKLAND BULK & OVERSIZED TERMINAL, LLC,
Plaintiff-Appellee,

v.

CITY OF OAKLAND,
Defendant-Appellant,
and

SIERRA CLUB; SAN FRANCISCO BAYKEEPER,
Intervenors-Defendants-Appellants.

ON APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NORTHERN CALIFORNIA
CASE No. 3:16-cv-07014-VC

BRIEF OF *AMICUS CURIAE* WEST OAKLAND ENVIRONMENTAL
INDICATORS PROJECT, ASIAN PACIFIC ENVIRONMENTAL
NETWORK, NO COAL IN OAKLAND, WEST OAKLAND NEIGHBORS,
COMMUNITIES FOR A BETTER ENVIRONMENT,
AND CENTER FOR BIOLOGICAL DIVERSITY,
IN SUPPORT OF DEFENDANTS AND REVERSAL

JONATHAN C. EVANS
CENTER FOR BIOLOGICAL DIVERSITY
1212 BROADWAY, SUITE 800
OAKLAND, CA 94612
(510) 844-7118; FAX (510) 844-7150
jevans@biologicaldiversity.org

ATTORNEY FOR *AMICI CURIAE*
DECEMBER 17, 2018

CORPORATE DISCLOSURE STATEMENT

Pursuant to Federal Rules of Appellate Procedure 26.1 and 29(a)(4)(A), *amicus curiae* certify that they have no parent corporations or any publicly held corporations owning 10% or more of their stock.

Dated: December 17, 2018

/s/ Jonathan C. Evans

JONATHAN C. EVANS
(CA Bar No. 247376)
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
Phone: (510) 844-7118
jevans@biologicaldiversity.org

Attorney for *Amici Curiae*

TABLE OF CONTENTS

CORPORATE DISCLOSURE STATEMENT	i
TABLE OF CONTENTS.....	ii
TABLE OF AUTHORITIES	iii
I. INTEREST OF AMICUS CURIAE.....	1
II. INTRODUCTION AND SUMMARY OF ARGUMENT.....	4
III. ARGUMENTS	5
A. Adjacent Communities, Already Suffering from Heavy Pollution, Face Substantially Dangerous and Compounded Health and Safety Risks from Coal Handling and Storage.	5
1. Poor Air Quality in West Oakland Currently Leads to Serious, Deleterious Health Impacts.....	7
2. Coal Storage and Handling Would Release Particulate Matter, Toxic Pollutants, and Volatile Gases Posing Health and Safety Risks to Residents and Workers.....	11
3. Coal Delivery Trains Would Deposit Toxic Coal Particulates in Oakland, Release Hazardous Diesel Fumes, and Pose Fire Risks.	16
4. The Coal Terminal Would Lead to Increases in Disease, Work and School Absences, Social Stress, Lost Recreational Opportunities, and Fire Risk in West Oakland.	19
B. Workers Would Face Serious Health and Safety Risks from Employment at a Coal Terminal	21
IV. CONCLUSION.....	22

TABLE OF AUTHORITIES

Cases

Kings County Farm Bureau v. City of Hanford

221 Cal.App.3d 692 (1990) 20, 21

OBOT v. City of Oakland

321 F.Supp.3d 986 (2018) 11, 20, 21

Rules and Regulations

14 Cal. Code Regs. §15355(b)21

Other Authorities

Akshaya Jha, et al., *Handle with Care: The Local Air Pollution Costs of*

Coal Storage, National Bureau of Economic Research (2017) 13, 14

Akshaya Jha, *Even When It's Sitting in Storage, Coal Threatens Human*

Health, The Conversation (2017)12

Alameda Cty. Pub. Health Dept., *Chronic Disease Prevention: A Community*

Vision (2017)7

Alameda Cty. Pub. Health Dept., *How Place, Racism, and Poverty Matter*

for Health in Alameda County (2013)11

Alameda Cty. Public Health Department, *East and West Oakland Health*

Data (2015)..... 6, 7, 10, 19

Amanda Evans et al., *Joint Exposure to Chemical and Nonchemical*

Neurodevelopmental Stressors in U.S. Women of Reproductive Age in

NHANES, Int J Environ Res Public Health 11(4) (2014)6

Benjamin Bowe, et al., *The 2016 Global and National Burden of Diabetes*

Mellitus Attributable to PM_{2.5} Air Pollution, The Lancet Planetary

Health, Vol. 2, Issue 7 (2018)12

California Air Resources Board, <i>Diesel Particulate Matter Health Risk Assessment for the West Oakland Community</i> (2008)	8, 10
City of Oakland, <i>Oakland Equity Indicators</i> (2018)	10
City-Data, <i>West Oakland Neighborhood Detailed Profile, 94607, 94608</i>	5
Communities for a Better Environment, <i>East Oakland Diesel Truck Survey Report</i> (2010)	8, 17
Daniel Jaffe, et al., <i>Diesel Particulate Matter and Coal Dust from Trains in the Columbia River Gorge</i> , <i>Atmospheric Pollution Research</i> 6(6) (2015)	17
Hong Chen, et al., <i>Living Near Major Roads and the Incidents of Dementia, Parkinson's Disease, and Multiple Sclerosis</i> , 389 <i>The Lancet</i> 718 (2017)	12
Jane Clougherty et al., <i>Synergistic Effects of Traffic-Related Air Pollution and Exposure to Violence on Urban Asthma Etiology</i> , <i>Environmental Health Perspectives</i> 15(8) (2007)	7
Ken Sexton et al., <i>Cumulative Risk Assessment for Combined Health Effects from Chemical and Nonchemical Stressors</i> , <i>American Journal of Public Health</i> 101(S1):81-88 (2011)	6
Mafalda Cacciottolo, et al., <i>Particulate Air Pollutants, APOE Alleles and Their Contributions to Cognitive Impairment</i> , <i>Translational Psychiatry</i> 7 (2017)	12
Marie Miranda et al., <i>Making the Environmental Justice Grade: the Relative Burden of Air Pollution Exposure in the United States</i> , <i>Int J Environ Res Public Health</i> 8(6) (2011)	6
Qian Di et al., <i>Air Pollution and Mortality in the Medicare Population</i> , <i>N Engl J Med</i> , 376 (2017)	13
Surface Transportation Board Decision, <i>Arkansas Electric Cooperative Corporation - Petition for Declaratory Order</i> , Dkt. No. FD 35305, ID 40436 (March 3, 2011)	18

U.S. Dep't of Energy, <i>The Fire Below: Spontaneous Combustion in Coal</i> (1993).....	15, 20
Vivian Pun et al., <i>Association of Ambient Air Pollution with Depressive and Anxiety Symptoms in Older Adults: Results from the NSHAP Study</i> , Environ Health Perspect 125(3) (2016).....	7
Yixing Du, et al., <i>Air Particulate Matter and Cardiovascular Disease: Epidemiological, Biomedical, and Clinical Evidence</i> , 8 J. of Thoracic Disease 1 (2016)	12

I. INTEREST OF AMICUS CURIAE¹

Amici are community and environmental organizations that would be affected by the Oakland Bulk and Oversized Terminal: West Oakland Environmental Indicators Project (“WOEIP”), Asian Pacific Environmental Network (“APEN”), No Coal in Oakland (“NCIO”), West Oakland Neighbors (“WON”), and the Center for Biological Diversity (“the Center”). *Amici*’s sole interest in this case is supporting the City of Oakland’s proper application of Ordinance No. 13385 (ER0809, “the Ordinance”) prohibiting the storage and handling of coal and petroleum coke at Oakland Bulk and Oversized Terminal, LLC (“OBOT”). The Ordinance applies to OBOT through Resolution No. 86234 (ER0823, “the Resolution”). *Amici*’s interest arise because of the substantially dangerous public health and safety impacts that evidence shows would occur if coal is stored, handled, and shipped in Oakland.

West Oakland Environmental Indicators Project is a resident-led, community-based environmental justice organization that advocates on behalf of West Oakland residents and its workers. Founded in 2003, WOEIP strives for improved quality of life as it relates to public health, air quality, land use, and economic development. It does so using a combination of activism, education, and science. Through partnerships with groups such as University of California, Berkeley’s Intel Labs and Google Street View, WOEIP trains community members to gather local air quality data. These findings then inform air quality research reports. In 2013 the White House honored co-founder and co-director Margaret Gordon as a Cham-

¹ No counsel for a party has authored this brief in whole or in part, and no party or counsel for a party has made a monetary contribution intended to fund the preparation or submission of the brief. No person other than amicus or their counsel has made a monetary contribution to the preparation or submission of this brief. Fed. R. App. P. 29(a)(4)(E). Plaintiff-Appellee, Defendant-Appellant, and Intervenor-Defendant-Appellant consented to the filing of this brief. Circuit Rule 29-3.

pion for Change for increasing public engagement in science and science literacy. Ms. Gordon served on the Oakland Port Commission from 2008-2012. WOEIP organizes local faith communities, residents, and concerned residents to oppose coal exports in West Oakland.

Asian Pacific Environmental Network is a non-profit organization that advances environmental justice campaigns and policy with the leadership of low-income Asian Pacific American families across California, including in West Oakland. Founded in 1993, and with offices in Oakland and Richmond, APEN strives to bring fundamental change that will prioritize public good over profits and promote the right of every person to a decent, safe, affordable quality of life. To achieve this, APEN has organized community residents to challenge fossil fuel and other infrastructure projects that bring pollution, poor air quality, and negative health effects. APEN's hundreds of members would be impacted by the pollution and health dangers of having a coal terminal in Oakland. APEN members have attended hearings and testified in opposition to this project.

No Coal in Oakland is a grassroots coalition of Oakland community members and organizations seeking to prevent the use of the former Oakland Army Base site for coal storage and handling. NCIO formed in the aftermath of the public revelation of OBOT's plans to construct an export terminal for coal, and is composed entirely of volunteers, including residents, clergy, and local environmental justice and labor activists. NCIO does not oppose the construction of the Oakland Global Trade and Logistics Center, but opposes storing and handling coal, due to its danger to the health and safety of West Oakland residents. With the active engagement of over 3,500 supporters, NCIO has played a major role in raising the public awareness of coal's threat to West Oakland with door-to-door canvassing, teach-ins, rallies, petitions, testimony and comment letters submitted to the Oakland City Council, and numerous community events. NCIO meets regularly in

West Oakland and plans continuing efforts to support the West Oakland community in its efforts to safeguard the health and safety of local residents.

West Oakland Neighbors is a neighborhood organization comprised of residents and businesses in West Oakland that actively works on improving West Oakland's immediate surroundings by addressing residents' concerns and attempting to foster cooperative relationships with the city, state, and federal government. WON provides a strong community forum to develop neighborhood cohesiveness and improve the quality of life in West Oakland and the wellbeing of its residents by coordinating neighborhood projects, disseminating information, maintaining open lines of communication with civic organization and other neighborhood groups as well as government agencies to tackle problems in West Oakland. WON opposes the handling, storage, and transport of coal and coke in West Oakland due to the adverse health and safety effects that would befall an already impacted community.

Founded in 1978, Communities for a Better Environment works to build people's power in California's communities of color and low-income areas. Its aim is to achieve environmental health and justice by preventing and reducing pollution and promoting healthy neighborhoods. CBE provides residents in blighted and heavily polluted urban communities, including many in Oakland, with organizing skills, leadership training, and scientific and legal assistance so that they can successfully confront threats to their health and well-being. CBE and its members would be affected by coal handling and storage on the Oakland waterfront.

The Center for Biological Diversity is a nationwide non-profit organization with more than 1 million members and supporters. It is dedicated to the protection of native species, their habitats, and environmental health through science, policy, and environmental law. The Center has worked extensively to advocate and litigate on the behalf of communities impacted by fossil fuel extraction, processing, and

infrastructure. It operates an office in downtown Oakland and has staff and members who live in West Oakland and adjacent neighborhoods.

II. INTRODUCTION AND SUMMARY OF ARGUMENT

This brief is submitted by community and environmental groups most immediately impacted by the proposal of Plaintiff-Appellee OBOT to build a rail to ship coal terminal (“Coal Terminal”) in West Oakland. The community in West Oakland has been fighting for decades to counter the inequitable burden of pollution in the community. In finding that the wealth of evidence demonstrates that the storage, handling, and transport of coal would produce numerous unavoidable harms and serious risks the City of Oakland (“City”) took a crucial step to halt an increase in the cumulative impact of pollution in a community suffering a disproportionate share of negative pollution and health effects. Even with the best mitigation, coal and coal dust would release particulate pollution, ozone, nitrogen oxide, and other toxic pollutants into Oakland’s air—with most of this falling in the environmentally-stressed community of West Oakland.

The City also recognized the substantial health and safety risks posed to workers at the Coal Terminal. Those handling the coal would be exposed to harmful amounts of toxic pollutants. Bulk coal storage piles—covered or not—are highly combustible and could endanger workers’ and first responders’ lives in the event of a fire or explosion. There are no solutions or regulations that completely avoid significant health and safety impacts.

The City validly exercised its legal right under the Development Agreement to protect residents and workers from the substantially dangerous health and safety conditions that would result from OBOT’s Coal Terminal.

III. ARGUMENTS

A. **Adjacent Communities, Already Suffering from Heavy Pollution, Face Substantially Dangerous and Compounded Health and Safety Risks from Coal Handling and Storage.**

The Coal Terminal site is located in West Oakland, a community disproportionately burdened by poor air quality and negative health outcomes because of the past and present polluting transportation infrastructure and industrial activities in the area. West Oakland is home to individuals whose families have lived in the neighborhood for generations and have been fighting against disproportionate pollution for decades. The faith community is active, along with multiple community organizations that support residents' advocacy, cultural identity, and advances towards social, economic, and environmental equity. These community institutions provide resiliency, but not enough to overcome the legacy of pollution and socioeconomic stressors to achieve improved health outcomes making strong and informed action by government a crucial ingredient in assuring improved health and safety.

The socio-economic and environmental conditions of West Oakland make it more susceptible to air pollution impacts that result from the delivery, handling, and storage of millions of tons of coal each year in the community. West Oakland covers six square miles and supports a population of around 42,000.² The median household income is \$30,000 less than the rest of Oakland. *Id.* Nearly one-third of residents live below the poverty level, with one-quarter of

² City-Data, *West Oakland Neighborhood Detailed Profile, 94607, 94608*, <http://www.city-data.com/neighborhood/West-Oakland-Oakland-CA.html>.

those households a full 50 percent below the poverty line. *Id.*³ The neighborhood is 85 percent people of color.⁴

The higher burden of air pollution, including particulate pollution, which disproportionately affects low income and minority communities, is well documented in the scientific literature.⁵ In addition to environmental chemical pollutants, non-chemical stressors – particularly psychological and social stressors (e.g. such as poverty, lack of social support and chronic discrimination due to race/ethnicity) – can independently influence health and should be considered in cumulative risk and cumulative impacts studies of adverse health impacts.⁶ For example, social stressors, measured by indicators such as poverty and race/ethnicity, can increase the cumulative harm of environmental toxins on neurological development.⁷ Scientific studies detail that urban children exposed to violence had higher risks of developing asthma in the presence of traffic-related air pollution, where both traffic pollution and asthma rates are already

³ Alameda County Public Health Department (“Alameda Cty. Pub. Health Dept.”), *East and West Oakland Health Data* (2015) at 5, <http://www.acphd.org/media/401560/cumulative-health-impacts-east-west-oakland.pdf>.

⁴ Alameda Cty. Pub. Health Dept., *supra* note 3, at 3.

⁵ *E.g.* Marie Miranda et al., *Making the Environmental Justice Grade: the Relative Burden of Air Pollution Exposure in the United States*, *Int. J. Environ Res Public Health*, 8(6):1755-71 (2011) <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3137995/>

⁶ Ken Sexton et al., *Cumulative Risk Assessment for Combined Health Effects from Chemical and Nonchemical Stressors*, *American Journal of Public Health*, 101(S1):81-88 (2011) <https://ajph.aphapublications.org/doi/pdfplus/10.2105/AJPH.2011.300118>

⁷ Amanda Evans et al., *Joint Exposure to Chemical and Nonchemical Neurodevelopmental Stressors in U.S. Women of Reproductive Age in NHANES*, *Int. J. Environ. Res. Public Health* 11(4):4384-4401 (2014) <https://www.mdpi.com/1660-4601/11/4/4384/htm>

high.⁸ Particulate pollution has also been associated with depressive and anxiety symptoms, with associations the strongest among individuals with lower socioeconomic status.⁹

Delivering, handling, and storing millions of tons of coal each year in West Oakland would add to the existing, well-documented health and safety hazards residents have long endured and are trying to change.

1. Poor Air Quality in West Oakland Currently Leads to Serious, Deleterious Health Impacts.

The evidence revealing the impacts of pollution on West Oakland is substantial and has been well documented by local and state officials. The Alameda County Health Department noted that a “long history of policy and practices, such as racial segregation” caused the West Oakland community to suffer disproportionately from chronic disease and death attributable to pollution.¹⁰ Inequitable land use and policy decisions have concentrated environmental hazards and burdens, such as freeways and polluting industries, in certain communities including West Oakland.¹¹

The California Environmental Protection Agency describes West Oakland as one of the highest-risk communities in California due to its heavy and

⁸ Jane Clougherty et al., *Synergistic Effects of Traffic-Related Air Pollution and Exposure to Violence on Urban Asthma Etiology*, *Environmental Health Perspectives*, 15(8):1140-1146 (2007)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1940095/>

⁹ Vivian Pun et al., *Association of Ambient Air Pollution with Depressive and Anxiety Symptoms in Older Adults: Results from the NSHAP Study*, *Environmental Health Perspectives*, 125(3):342-348 (2016)

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5332196/>

¹⁰ Alameda Cty. Pub. Health Dept., *supra* note 3, at 27.

¹¹ Alameda Cty. Pub. Health Dept., *Chronic Disease Prevention: A Community Vision* (2017), at 10, 12, <http://www.acphd.org/media/482708/chronic.pdf>

persistent air pollution and categorized it as a disadvantaged community area, which prioritizes state investment for improving public health. ER1327 (Public Health Advisory Panel Report, hereinafter “PHAP Report”), ER0813 (Ordinance No. 13385). The Bay Area Air Quality Management District’s Community Air Risk Evaluation found West Oaklanders continue to suffer among the worst health outcomes due to a combination of toxic air contaminants, relatively high exposures of youth and seniors to impaired air quality, and high levels of poverty. ER0841, 842 (Agenda Report); ER0813 (Ordinance No. 13385). The Bay Area Air Quality Management District recently ranked the neighborhood in the highest quintile in their Bay Area Pollution Vulnerability Index. ER1330 (PHAP Report).

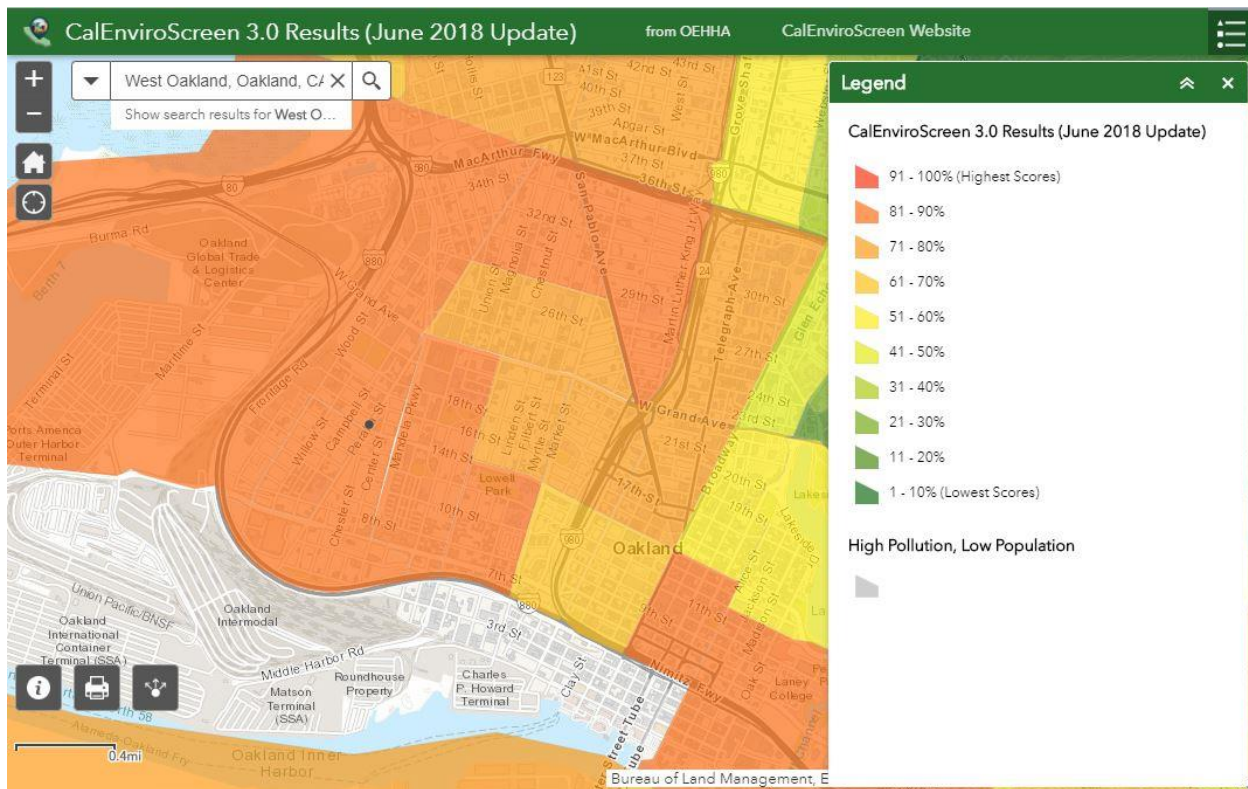
Adverse health impacts from diesel exhaust disproportionately affect lower income and minority populations, such as West Oakland, where commodity distribution centers are located.¹² In analyzing the already heavy burden of diesel pollution in West Oakland the California Air Resources Board found that diesel exhaust’s particulate pollution is responsible for over 70 percent of the potential cancer risks from all toxic air contaminants in California.¹³

Socioeconomic and environmental data has been compiled to graphically detail the disparate impacts. The California Office of Environmental Health and Hazard Assessment analyzes the combined effects of existing pollution burdens and demographic data to create the California Communities Environmental Health Screening Tool (“CalEnviroScreen”). CalEnviroScreen identifies

¹² Communities for a Better Environment, *East Oakland Diesel Truck Survey Report* (2010) at 19, <http://www.cbecal.org/wp-content/uploads/2012/07/Diesel-truck-study.pdf>.

¹³ California Air Resources Board, *Diesel Particulate Matter Health Risk Assessment for the West Oakland Community* (2008) at 9, <https://www.arb.ca.gov/ch/communities/ra/westoakland/documents/westoaklandreport.pdf>.

California communities by census tract that are disproportionately burdened by, and vulnerable to, multiple sources of pollution, and has identified West Oakland above the 80th percentile in disproportionately burdened by, and vulnerable to, pollution.



CalEnviroScreen Results for West Oakland, California. The Global Trade & Logistics Center appears in the upper left. The red and orange blocking covering West Oakland indicates a higher CalEnviroScreen score revealing the burden of pollution from multiple sources in communities while accounting for potential vulnerability to the adverse effects of pollution. Source: <https://oehha.ca.gov/calenviroscreen>.

Specific data regarding pollution impacts and health outcomes emphasize the existing dangers for West Oakland residents. Industry, rail traffic, and freeways in the area expose residents to three times the amount of diesel particulate pollution than elsewhere in the Bay Area. ER1327 (PHAP Report). One air monitoring site, located less than 4000 feet (i.e. less than a mile) from the Coal Terminal, found that air quality currently violates the World Health

Organization annual particulate matter (“PM”)_{2.5} standard. *Id.* at 1336.¹⁴ Coal trains would increase this threat because they require vastly more diesel fuel and emit more diesel pollution than other commodity-carrying trains. *Id.* at 1343.

West Oakland residents suffer elevated levels of asthma, premature and low-birth weights, heart disease, and other pollution-related ailments. ER0841 (Agenda Report). West Oakland has some of the highest emergency room and hospitalization rates in the city and Alameda County for causes linked to air pollution, including asthma and congestive heart failure.¹⁵ Death rates from heart disease, strokes, and lung cancer—associated with high outdoor air pollution levels—are also greater in West Oakland.¹⁶ The estimated lifetime potential cancer risk for residents of West Oakland from exposure to diesel particulate pollution emissions from all sources is about 1,200 excess cancers per million—several times higher than the Bay Area average. ER1332 (PHAP Report).¹⁷

The children of West Oakland are the most vulnerable. A child in West Oakland has a life expectancy 14 years shorter than that of a child born in the

¹⁴ The monitor recorded a three-year annual average ending in 2015 of 10.8 µg/m³. The World Health Organization standard is 10.0 µg/m³. The agencies that promulgate these standards make clear that they do not represent thresholds of safety, and that adverse health effects due to PM_{2.5} exposure occur below these levels. *Id.* at 1334.

¹⁵ Alameda Cty. Pub. Health Dept., *supra* note 3, at 9 (West Oaklanders visited Emergency Departments for asthma at a number almost two times the County rate); see also City of Oakland, *Oakland Equity Indicators* (2018) at 70, <https://cao-94612.s3.amazonaws.com/documents/2018-Equity-Indicators-Full-Report.pdf>.

¹⁶ Alameda Cty. Pub. Health Dept., *supra* note 3, at 14.

¹⁷ See also California Air Resources Board, *supra* note 13, at 2.

Oakland hills.¹⁸ Compared to a white child in the affluent Oakland hills, an African American child born in West Oakland is 2 times more likely to be born with low birth weight, 13 times more likely to live in poverty, and 3 times more likely to die of stroke. *Id.* West Oakland children under age five visit the emergency room for asthma at double the rate of elsewhere in Alameda County. ER1328 (PHAP Report).

The City of Oakland recognized this evidence when passing the Ordinance, noting that West Oakland residents “are disadvantaged and disproportionately suffer health problems and bear the brunt of health-related impacts caused by industrial and other activities.” ER0813 (Ordinance No. 13385).

2. Coal Storage and Handling Would Release Particulate Matter, Toxic Pollutants, and Volatile Gases Posing Health and Safety Risks to Residents and Workers.

Pollution is an inevitable byproduct of handling and storing coal and coke, and can be produced in several ways. There is a rich body of research documenting the particular dangers that coal poses to public health and safety. Coal dust is released from coal trains, coal storage piles, and the loading and unloading of bulk coal—all activities contemplated by OBOT.¹⁹ This coal dust contains high concentrations of mercury, lead, arsenic, particulate matter, and cadmium. ER1334, 1348 (PHAP Report); *see also* ER0852 (the Ordinance). There are no known safe levels of exposure to these pollutants. *Id.*

Perhaps the most abundant pollutant produced by coal handling is particulate matter (“PM”). PM_{2.5} describes the type of particulate pollution

¹⁸ Alameda Cty. Pub. Health Dept., *How Place, Racism, and Poverty Matter for Health in Alameda County* (2013) at 5, 6, <http://www.acphd.org/media/383224/healthequity.pdf>.

¹⁹ *OBOT v. City of Oakland*, 321 F.Supp.3d 986, 994 (2018).

measuring less than 2.5 micrometers in diameter—or about 30 times thinner than a strand of human hair.²⁰ PM₁₀ particles are slightly larger, at about the size of dust or pollen. *Id.* Coal dust releases particulate pollution, and coal itself emits volatile gases that combine chemically in the atmosphere to create PM_{2.5} pollution independent of the “dust” particles. *Id.*

Both types of PM are linked to increased deaths and illnesses due to cardiovascular and respiratory conditions.²¹ PM_{2.5}, however, is especially pernicious. While PM₁₀ particles lodge in the upper airways and cause conditions such as bronchitis, PM_{2.5} embeds in small airways and capillaries, eventually reaching the body’s organs—including the brain. *Id.* Evidence links PM_{2.5} exposure to accelerated cognitive aging, dementia, Alzheimer’s, diabetes, and other diseases.²²

National Ambient Air Quality Standards for PM_{2.5} do not protect from all adverse health effects related to exposure. A 12-year study published in the New

²⁰ Akshaya Jha, *Even When It’s Sitting in Storage, Coal Threatens Human Health*, The Conversation (2017), <https://theconversation.com/even-when-its-sitting-in-storage-coal-threatens-human-health-80865>.

²¹ Yixing Du, et al., *Air Particulate Matter and Cardiovascular Disease: Epidemiological, Biomedical, and Clinical Evidence*, 8 J. of Thoracic Disease 1 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4740122/>.

²² Mafalda Cacciottolo, et al., *Particulate Air Pollutants, APOE Alleles and Their Contributions to Cognitive Impairment*, Translational Psychiatry (2017), <https://www.nature.com/articles/tp2016280>; see also Hong Chen, et al., *Living Near Major Roads and the Incidents of Dementia, Parkinson’s Disease, and Multiple Sclerosis*, 389 The Lancet 718 (2017), [http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736\(16\)32399-6.pdf](http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(16)32399-6.pdf) (analyzing the link between fine particulate matter and brain disease); Benjamin Bowe, et al., *The 2016 Global and National Burden of Diabetes Mellitus Attributable to PM_{2.5} Air Pollution*, The Lancet Planetary Health, Vol. 2, Issue 7, e301-e312 (2018) <https://www.sciencedirect.com/science/article/pii/S2542519618301402>.

England Journal of Medicine examined health records from nearly 61 million people and combined that with pollution data.²³ The researchers found that an increase from 10 to 20 micrograms of PM_{2.5}, would result in the equivalent increase in death rates of over seven percent. *Id.* The risk of death is highest among racial minorities and people with low income. *Id.* Notably, researchers found that harms occur even at exposure concentrations **below** current air quality standards. *Id.*

The properties of coal lend themselves to particulate pollution that is more dangerous than other bulk goods. First, wind blowing over coal piles staged in rail cars produces heavy amounts of PM_{2.5} fugitive dust emissions.²⁴ Second, uncovered coal itself emits volatile gases, which then help form PM_{2.5}. *Id.* Last, when coal is unloaded and handled, the dust from its movement generates additional fine particulates. *Id.* Increased concentrations of airborne PM_{2.5} from coal piles have been detected 25 miles from the source. *Id.* at 4.

These multiple emission pathways for PM_{2.5}—combined with the Coal Terminal’s close proximity to Oakland residents—mean that local health and safety risks are high. A study of children living near a coal handling terminal found an increased rate of respiratory disease. ER1070 (Analysis of Health Impacts and Safety Risks and Other Issues/Concerns Related to the Transport, Handling, Transloading, and Storage of Coal and/or Petroleum Coke (Petcoke) in Oakland and at the Proposed Oakland Bulk & Oversized Terminal by Zoe Chafe, PhD, MPH, hereinafter “Chafe Report”). The port addressed in that study

²³ Qian Di et al., *Air Pollution and Mortality in the Medicare Population*, N Engl J Med, 376:2513-2522 (2017) <http://www.nejm.org/doi/full/10.1056/NEJMoa1702747>.

²⁴ Akshaya Jha, et al., *Handle with Care: The Local Air Pollution Costs of Coal Storage*, National Bureau of Economic Research (2017) at 9, <https://www.nber.org/papers/w23417.pdf>.

handled less than 2 million tons of coal and coke at its peak, far less than the amount forecast for the Coal Terminal. *Id.*

The Coal Terminal's plan is to store, handle, and offload 6.5 to 7.5 million metric tons of coal annually, but would be capable of handling up to 9 million metric tons annually. ER0845 (City of Oakland Agenda Report, dated June 23, 2016, hereinafter "Agenda Report"); ER 1847 (Basis of Design). The World Health Organization, U.S. Environmental Protection Agency, and California Environmental Protection Agency have determined that there is no safe level of PM_{2.5} exposure, based on evidence from scientific studies. ER0852 (Agenda Report); ER1334 (PHAP Report). A single ton of stored coal generates \$183 in local health costs, primarily because of the increased mortality rates associated with PM_{2.5} pollution.²⁵ When applied to OBOT's project and based on the low-end estimate of 6.5 million tons of annual coal throughput, coal particulate pollution alone could cost Oakland residents over \$1 billion in health costs *each year*. Even in the absence of precise emission estimates, a reasonable conclusion is that annual throughput of millions of tons of coal will release unsafe levels of particulate pollution, putting Oakland's health and safety at risk.

An air quality analysis performed for an enclosed building for coal storage—similar in design to OBOT's facility—concluded that PM_{2.5} emissions would increase to a level that would cause exceedances of the PM_{2.5} National Ambient Air Quality Standards even without including background concentrations. ER1040-1041 (Chafe Report citing Alameda Cty. Pub. Health Dept.). However, even if coal storage piles are covered to mitigate emissions, covering coal introduces a new set of substantial risks.

²⁵ *Jha, supra* note 24.

Coal and coal dust are highly combustible as documented by the U.S. Department of Energy. ER0813 (Ordinance No. 13385).²⁶ Piles of bulk coal sitting in storage generate heat, increasing the possibility of fires and explosions.²⁷ Experts studying OBOT's proposed design noted that storing coal in confined spaces suspends coal dust in the air, which could then explode. ER1317 (PHAP Report).²⁸ The speed and duration of moving air in a coal dust explosion is capable of dispersing additional coal dust, which could cause and/or feed a secondary fire and/or explosion. ER853 (Agenda Report). Emergency personnel responding to one coal fire could generate a secondary dust cloud that could lead to another fire and/or explosion, thereby putting first responders' lives at risk. *Id.*

To manage fire risks, covered storage piles would require adequate ventilation and repeated applications of water. ER1368 (PHAP Report). The level of oversight required to ensure safety and environmental protection would be "very difficult to enforce and is unlikely a reliable strategy for protecting" health and safety. *Id.* at 1317. Even then, "careful facility design will not prevent coal fires or combustion." ER0853 (Agenda Report).

The City of Oakland had all this evidence before it when considering the Ordinance and Resolution. With the high likelihood of substantial health and safety harms, and facing potentially unenforceable and unreliable mitigations, the

²⁶ See also U.S. Dep't of Energy, *The Fire Below: Spontaneous Combustion in Coal* (1993) [http://www.coaltrainfacts.org/docs/EH-93-4-The-Fire-Below - Spontaneous-Combustion-in-Coal.pdf](http://www.coaltrainfacts.org/docs/EH-93-4-The-Fire-Below-Spontaneous-Combustion-in-Coal.pdf).

²⁷ U.S. Dep't of Energy, *supra* note 26, at 1.

²⁸ The Public Health Advisory Panel also expressed concern that the Coal Terminal's Basis of Design documents do not propose a completely closed system, meaning health risks from fugitive coal dust would remain. ER1316, 1366 (PHAP Report).

City Council made the informed decision not to put Oakland residents at risk from massive coal activities at its port.

3. Coal Delivery Trains Would Deposit Toxic Coal Particulates in Oakland, Release Hazardous Diesel Fumes, and Pose Fire Risks.

OBOT's plan entails coal delivery by rail cars on trains over one-mile long. ER1413 (PHAP Report). The transport of coal by rail, staging of rail cars at the Port of Oakland while trains await unloading, and the unloading and transloading at the Coal terminal produces numerous, well-documented, and substantial health and safety impacts. These include toxic coal particulate blow-off, harmful diesel emissions, fires, and explosions. *Id.* at 1316, 1317.

Coal delivery by rail significantly increases concentrations of PM_{2.5} due to coal dust blow-off during movement, staging, and unloading, and due to train diesel exhaust. *Id.* at 1316. Introducing a new PM_{2.5} source would increase the risk of lung cancer, hospitalization and emergency room visits due to asthma, heart disease, and adverse birth outcomes in Oakland communities and all along the rail line. *Id.* at 1338, 1339.

Coal trains weigh anywhere from 50-200 percent more than other freight trains. *Id.* at 1343. They therefore require vastly more diesel fuel and are worse polluting than other commodity-carrying trains. *Id.* Diesel exhaust contains over 40 toxic air contaminants, including PM, ozone, benzene, sulfur dioxide, formaldehyde, black carbon, and nitrogen oxide. *Id.* at 1339. More than 90 percent of particles in diesel exhaust measure less than one micron in size, making them easily inhaled into lungs. *Id.* Short-term health impacts from diesel exhaust exposure include eye, nose, and throat irritation; nausea; memory loss;

insomnia; and headaches. *Id.* at 1340.²⁹ Long-term adverse health effects include heart disease, asthma, bronchitis, reduced lung function, increased risk of stroke, and cancer. *Id.*

Claims that mitigation methods would reduce substantially dangerous health effects from coal dust emissions from rail cars is not accurate. Surfactants are a mitigation tool—used infrequently by the industry—to reduce coal dust blow-off from rail cars. ER1336 (PHAP Report). However, surfactants have real world limitations because mitigation requirements are unenforceable by the City of Oakland, surfactants degrade over time, and audits by railway companies “indicated that shippers do not regularly adhere to best practices” to ensure that surfactants reach expected mitigation levels. *Id.* at 1344, 1336. Indeed, further evidence suggests that only “30 percent of shippers comply with the rule” to apply surfactants to mitigate coal dust. *Id.* at 1344. Even at the most unrealistic and optimistic rate for reduction, coal dust emissions in West Oakland would still pose substantial health and safety risks. *Id.* at 1336.

In recent studies of over 300 trains in Washington State, average PM_{2.5} concentrations near coal trains were twice—and sometimes up to twenty times—that of trains carrying other freight. *Id.* at 1337 (PHAP Report).³⁰ These PM levels occurred despite the use of surfactants. *Id.* Surfactants also degrade over time and may not significantly reduce coal dust emissions locally or during unloading. *Id.* at 1317. Surfactants are also harmful themselves. Potential impacts include surface and groundwater deterioration, soil contamination, toxicity to humans, air pollution, and species die-offs. *Id.* at 1345.

²⁹ See also *Communities for a Better Environment*, *supra* note 12, at 2.

³⁰ See also Daniel Jaffe, et al., *Diesel Particulate Matter and Coal Dust from Trains in the Columbia River Gorge*, *Atmospheric Pollution Research* 946-52 (2015) <https://www.sciencedirect.com/science/article/pii/S1309104215000057>.

Mitigation to cover rail cars would not adequately reduce emissions and poses other safety risks. By the Coal Terminal developer's own estimate, roughly seven percent of coal dust would escape from rail cars during unloading. *Id.* at 1343. Enclosing coal in a confined space could cause an explosion. ER0958 (ESA Report); ER1096 (Chafe Report). Were coal car covers to actually be used it would then exacerbate the fire danger. Covering rail cars would cause heat to build up and dust to accumulate, thereby increasing the risk of a highly dangerous, or even catastrophic, event. ER1344 (PHAP Report).

Coal dust blowing from rail cars also increases safety risks during transport, creating a danger of train derailments. The Surface Transportation Board found that "the weight of the evidence shows that coal dust is a harmful foulant that could contribute to future accidents by destabilizing tracks."³¹ A derailment spilling coal in Oakland could devastate local soils, waterways, and air quality, as well as endanger workers. Just one such event would impose tremendous harms and costs on residents and the City.

///

///

///

³¹ Surface Transportation Board Decision, *Arkansas Electric Cooperative Corporation - Petition for Declaratory Order*, Dkt. No. FD 35305, ID 40436 (March 3, 2011) at 8, [https://www.stb.gov/Decisions/readingroom.nsf/UNID/79B5382AE20F7930852578480053111F/\\$file/40436.pdf](https://www.stb.gov/Decisions/readingroom.nsf/UNID/79B5382AE20F7930852578480053111F/$file/40436.pdf)

4. The Coal Terminal Would Lead to Increases in Disease, Work and School Absences, Social Stress, Lost Recreational Opportunities, and Fire Risk in West Oakland.

The transport, handling, and storage of coal in West Oakland would increase already high air pollution exposure, causing adverse health effects and contributing to premature mortality. Inhaling even low levels of coal dust would cause the disproportionately high number of children with asthma in West Oakland to suffer further loss of lung function. ER1332 (PHAP Report). The neighborhood's already high cancer risk would rise even higher with the OBOT coal project. *Id.* The Public Health Advisory Panel Report found that the West Oakland zip code 94607 would “likely experience an increase in cancer risk from the OBOT project, even though it already has the highest cancer risk from air pollution in the County.” *Id.*

Illnesses caused by poor air quality contribute to lost work days and increased school absences. ER1334, 1338 (PHAP Report). Money spent on asthma inhalers or doctor's visits stresses incomes in a neighborhood where 30 percent of residents live below the poverty line.³² Coal in Oakland would worsen these effects.

Moreover, many important West Oakland community resources—such as schools, parks, and community services—are located near the proposed Coal Terminal. *Id.* at 1333. This structurally locks in higher air pollution exposures for more vulnerable populations who cannot afford to attend school or recreate elsewhere. *Id.* For example Raimondi Park—located less than two miles from the

³² Alameda Cty. Pub. Health Dept., *supra* note 3, at 5.

Coal Terminal—receives 27,000 annual visits, many from West Oakland residents. *Id.* at 1338, 1414.

Should the coal stored and handled at the Coal Terminal catch fire, large amounts of pollutants would permeate the West Oakland neighborhood.³³ The smoke from such a fire would be worse than that from a coal-fired power plant, as the burn would not be subject to emission control technologies. A coal fire would cause serious health hazards for surrounding communities and increase the risk of hospitalization and adverse cardiovascular and respiratory effects.

The California Environmental Quality Act provides a helpful analytical framework for how to analyze the effects of the addition of air pollution in an area already suffering from poor air quality.³⁴ When projects add additional pollution to an area suffering from poor air quality the likelihood that the increased pollution will cause harm is greater because the community is already burdened with unsafe air as an existing condition. The District Court’s approach in comparing the relative level of pollution produced by the Coal Terminal to existing sources suffers both legal and factual flaws. *OBOT v. City of Oakland*, 321 F.Supp.3d at 1005 (suggesting standard of pollution relative to the Bay Bridge toll plaza or proposed A’s stadium is appropriate).

In analyzing the cumulative burden of multiple sources of air pollution the California courts have held that incremental, small sources of air pollution compound to “cause a serious environmental health problem.” *Kings County Farm Bureau v. City of Hanford*, 221 Cal.App.3d 692, 720 (1990). Individual sources of air pollution “appear insignificant, assuming threatening dimensions

³³ U.S. Dep’t of Energy, *supra* note 26, at 1.

³⁴ The Development Agreement expressly provides that it “shall be governed by and interpreted in accordance with the Laws of the State of California.” ER2000 (Development Agreement, §14.11).

only when considered in light of the other sources with which they interact.” *Id.* These cumulatively significant environmental impacts occur when incremental impacts of a project “result from individually minor but collectively significant projects taking place over a period of time.” 14 Cal. Code Regs. §15355(b). Instead of recognizing the cumulative health and safety impacts posed by additional air pollution contributed by the Coal Terminal, the District Court improperly opined that comparisons of emissions to other sources was more appropriate. *OBOT v. City of Oakland*, 321 F.Supp.3d at 1006. This overlooks the existing environmental burden in that community and the wealth of evidence regarding coal’s environmental impact.

West Oakland residents have little room for additional health or safety burdens. See ER1323 (PHAP Report, concluding that due to existing environmental harms and low adaptive capacity due to economic and structural inequality, any increase in environmental hazards would cause substantial harm to West Oakland residents). The Public Health Advisory Panel—after examining published journal articles and government data—put it plainly: “[A]ny increase in exposure to environmental hazards related to the coal exports will likely have an adverse health impact on the West Oakland population, possibly with greater severity than for others in Oakland were they to face a similar exposure.” *Id.* The City of Oakland, therefore, acted reasonably to protect its most vulnerable residents. Allowing coal handling and storage in West Oakland would have severe and dire consequences, lasting generations.

B. Workers Would Face Serious Health and Safety Risks from Employment at a Coal Terminal

Coal is inherently dangerous for workers who handle it daily. This is due to the same risks described above: coal is toxic to humans when inhaled as dust,

combustible in solid form, and highly explosive when suspended as particles in confined spaces. ER1362 (PHAP Report).

Because coal dust is linked to health issues such as chronic bronchitis, decreased lung function, emphysema, cancer, and death, the World Health Organization found that coal dust is responsible for most occupational lung diseases linked to airborne particulates. *Id.* at 1349-51 (PHAP Report); ER0810 (the Ordinance). During the September 2015 hearing before Oakland City Council, International Longshore and Warehouse Union Local 10 member Katrina Booker testified that during her previous job handling coal at the Port of Stockton, she suffered daily ailments including burning eyes, nose bleeds, and chest pain.³⁵ Workers at the Coal Terminal also suffer the greatest risk from a fire event due to their direct proximity to the coal. The City properly relied upon the substantial evidence before it regarding the substantially dangerous threats to the health and safety of residents and workers regarding the Coal Terminal.

IV. CONCLUSION

The District Court's judgment should be reversed and remanded to affirm the City's prohibition on coal handling and storage based on the substantial evidence of the substantially dangerous threats to public health and safety.

///

///

///

³⁵ Mariela Patron, *Hundreds Pack Public Hearing on Coal Transport Through Oakland*, Oakland North (2015) <https://oaklandnorth.net/2015/09/22/hundreds-pack-public-hearing-on-coal-exports-in-oakland>.

Dated: December 17, 2018

Respectfully submitted,

/s/ Jonathan C. Evans

Attorney for *Amici Curiae* WEST
OAKLAND ENVIRONMENTAL
INDICATORS PROJECT, ASIAN
PACIFIC ENVIRONMENTAL
NETWORK, NO COAL IN
OAKLAND, WEST OAKLAND
NEIGHBORS, COMMUNITIES
FOR A BETTER ENVIRONMENT,
AND THE CENTER FOR
BIOLOGICAL DIVERSITY

JONATHAN C. EVANS
(CA Bar No. 247376)
Center for Biological Diversity
1212 Broadway, Suite 800
Oakland, CA 94612
Phone: (510) 844-7118
jevans@biologicaldiversity.org

CERTIFICATE OF COMPLIANCE

This brief complies with the length limits permitted by Ninth Circuit Rule 32-1 and Fed. R. App. P. 29(a)(5). The brief is 5,840 words, excluding the portions exempted by Fed. R. App. P. 32(f).

This brief's type size and type face comply with Fed. R. App. P. 32(a)(5) and (6), because the brief has been prepared in a proportionally spaced typeface using Microsoft Word in 14- point font.

/s/ Jonathan C. Evans

JONATHAN C. EVANS

CERTIFICATE OF SERVICE

I hereby certify that on December 17, 2018, I electronically filed this brief with the Clerk of the Court for the U.S. Court of Appeals for the Ninth Circuit by using the appellate CM/ECF system. I certify that all participants are registered CM/ECF users, and that service will be accomplished by the appellate CM/ECF system.

/s/ Jonathan C. Evans

JONATHAN C. EVANS