

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

OAKLAND BULK & OVERSIZED  
TERMINAL, LLC,

Plaintiff,

v.

CITY OF OAKLAND,

Defendant.

Case No. [16-cv-07014-VC](#)

**FINDINGS OF FACT AND  
CONCLUSIONS OF LAW**

An old army base sits along the water in Oakland, next to the Bay Bridge toll plaza. In an effort to convert the old base into something useful to the community, the City of Oakland entered into an agreement with a developer to build and operate a bulk cargo shipping terminal. The idea was to allow commodities to be delivered to the terminal by train and then shipped out by boat for export to other countries.

The development agreement froze in place the local regulations that existed at the time the agreement was signed. This means, generally speaking, that any regulations adopted by Oakland thereafter would not apply to the shipping terminal. But the agreement contains an important exception: a regulation that postdates the development agreement can be applied to the shipping terminal if the City determines that the failure to apply the new regulation would pose a "substantial danger" to the health or safety of people in Oakland. The agreement specifies that any such determination by the City must be supported by "substantial evidence."

After the development agreement was signed, word spread that the developer was making plans to transport coal through the terminal. Many people in Oakland expressed concern about this. The Oakland City Council responded by adopting two measures: (i) an ordinance that bans

coal operations at "bulk material facilities" in Oakland; and (ii) a resolution that applies the ordinance to this terminal, through a finding by the City Council that coal operations at the terminal would pose a substantial danger to the health and safety of people in Oakland.

The developer responded by filing this lawsuit. Among other things, the suit alleges that the City lacked substantial evidence to conclude that the proposed coal operations at the terminal would pose a substantial health or safety danger to people in Oakland. This means, according to the developer, that the City breached the development agreement by applying the coal ban to the terminal.

The parties have a number of disputes about how to interpret and apply the provision in the development agreement that allows the City to protect its people from substantial health or safety dangers. With respect to many of these disputes, Oakland makes strong arguments. For example, Oakland is correct that the "substantial evidence" standard is deferential and gives policymakers significant latitude to determine whether a danger to health or safety is significant enough to justify applying a new regulation to the facility. Oakland is also right to say that it has a special obligation to protect vulnerable members of the community – people who, partly because of their income status and where they live, are more likely to experience adverse health effects from pollution. Furthermore, Oakland is probably right that local policymakers are not required to take it on faith that existing federal or state pollution standards will adequately protect people.

But on the primary question presented by this lawsuit, Oakland is wrong. The question, as both sides agree, is not whether any evidence that might possibly exist could support the City Council's decision to ban coal operations at the facility. Rather, the question is whether the record before the City Council when it made this decision contained substantial evidence that the proposed coal operations would pose a substantial health or safety danger. Even under the deferential standard of review in the development agreement, the record before the City Council does not contain enough evidence to support the City Council's conclusion that the proposed coal operations would pose a substantial danger to people in Oakland. In fact, the record is riddled

with inaccuracies, major evidentiary gaps, erroneous assumptions, and faulty analyses, to the point that no reliable conclusion about health or safety dangers could be drawn from it. Perhaps a more thorough investigation could result in a lawful determination that coal operations may be restricted at the facility, but in this case, the record was inadequate. Because the resolution adopted by the City Council applying the coal ordinance to this shipping facility constitutes a breach of the development agreement, it is invalid and the City may not rely on it to restrict operations there.

### I.

After the Oakland Army Base was closed in 1999, some of its land became the property of the City of Oakland. The City then embarked upon years of planning to redevelop it, which culminated in contractual agreements with a group of developers who were interested in building a bulk goods shipping terminal. A bulk goods shipping terminal is a facility that can receive, store, handle, and ship goods that are typically transported in large quantities, such as cement, iron ore, coal, and petroleum coke (also known as petcoke or coke). In 2012, Oakland officially entered into a "Lease Disposition and Development Agreement" with the Oakland Bulk & Oversized Terminal ("OBOT") to develop this terminal. Lease Disposition and Development Agreement (Trial Exhibit ("Ex.") 65). In July 2013, the City and OBOT entered into a "Development Agreement," which further established and elaborated OBOT's rights to build a bulk goods terminal on this property. Development Agreement (Ex. 584). (Technically, both agreements were signed by a legal predecessor of OBOT, but OBOT has assumed all of the relevant rights and obligations under the agreements, so for all relevant purposes, it is effectively the contracting party.) Since then, OBOT has contracted with a company named Terminal Logistics Solutions to design and manage the terminal, although OBOT remains the landlord. Collectively, OBOT, Terminal Logistics Solutions, and their partners are considered the project developers. "OBOT" is used to refer to both the company and the bulk goods terminal being planned.

At this stage, the most detailed description of OBOT's operations is contained in its "basis

of design." The basis of design is a set of documents that the project developers gave the City in September 2015. These documents describe, in general terms, how the terminal will operate, the permits the developers will seek, and the rules and regulations the developers believe they will have to follow. The basis of design is no more than a basic framework for the project, with the details yet to be filled in. It reflects the design process at 8 to 10 percent completion, meaning that approximately 90 percent of the pre-construction process remains, including further design and permitting. Basis of Design, Volume 1, July 2015 Presentation (Ex. 1238.0005); May 16, 2016 OBOT Response to City Questions at 2 (Ex. 166.0002); Trial Transcript ("Tr.") 59:10-60:4, 61:15-24 (Tagami).

The basis of design lists goods that could be shipped through the terminal but does not specify which of these goods the developers will actually ship. Two of the listed commodities are coal and coke, and it is widely understood that they are intended to be the primary goods to be shipped. Although OBOT continues to say it is considering other commodities, news articles have reported that Terminal Logistics Solutions has been negotiating the transport of coal from Utah. ESA Report at 2-3 to 2-4 (Ex. 14.0024-0025); May 16, 2016 OBOT Response to City Questions at 1-2 (Ex. 166.0001-0002); Oct. 6, 2015 OBOT Response to City Questions (Ex. 149.0001). Moreover, Terminal Logistics Solutions, which was formed to operate bulk terminals like OBOT, is a wholly owned subsidiary of a natural resources company named Bowie Resource Partners that primarily owns coal mines in Utah.

According to the basis of design, the developers are planning for roughly 5 million metric tons of coal and/or coke to pass through the terminal each year. Both commodities would be brought to Oakland from other parts of the country. Basis of Design, Volume 1, July 2015 Presentation (Ex. 1238.0011); June 23, 2016 Agenda Report at 8-9 (Ex. 135.0008-0009). While the Port of Oakland, which is adjacent to the former army base, ships many different kinds of goods, it does not currently ship coal or have a bulk coal facility. Therefore, OBOT would be the first coal shipping facility of its kind in Oakland. June 23, 2016 Agenda Report at 4 (Ex. 135.0004). For the purposes of this dispute, the parties have not meaningfully distinguished

between coal and coke, focusing almost exclusively on coal. Accordingly, for ease of reference, this ruling describes OBOT's proposed operations as "coal operations" and uses the word "coal" as shorthand to refer to both commodities.

The proposed coal operations can be broken down into three phases. The first is the "transport" phase. The coal will be mined in western states, such as Wyoming and Utah, and then travel via interstate rail lines to the terminal. These rail lines will likely be operated by Union Pacific and Burlington Northern Santa Fe, which are known as mainline or long-haul rail carriers. ESA Report at 2-4 to 2-5, 5-1 (Ex. 14.0025-0026, 0070).

The second phase is "staging." Once the trains reach the rail yard at the Port of Oakland, they will be segmented. For instance, a 104-car train may be divided into four 26-car trains. At that point, the rail car segments will be taken across a dedicated portion of rail track, called a rail spur, to "dumper pits" on the property of the OBOT terminal. ESA Report at 2-4, 5-1, 5-10, 5-11 (Ex. 14.0025, 0070, 0079, 0080); Tr. 189:22-190:7 (Evans).

The third phase is "terminal operations." In this phase, the cars will be pulled over the dumper pits and their bottoms will open up, unloading the coal onto an underground conveyance system. The conveyance system will move the coal into storage in enclosed buildings, and later, onto ships that will carry the coal overseas. ESA Report at 2-9, 5-1 (Ex. 14.0030, 0070); Tr. 275:22-276:14 (McClure).

In response to broader concerns about climate change and the environment, the City Council adopted a resolution expressing Oakland's opposition to transporting fossil fuels through the city in mid-2014. Resolution No. 85054 (Myre Decl. ISO OBOT's Mot. for Summ. J. Ex. 62, Dkt. No. 141-62). Soon thereafter, word began to spread about the developers' plans to ship coal through the bulk goods terminal, which generated significant public concern in Oakland. In September 2015 and May 2016, the City Council held public hearings to receive testimony about the health and safety effects of storing, handling, and transporting coal through Oakland. Community members, organizations, and stakeholders from across the Bay Area testified and submitted written comments. The City Council asked its staff to evaluate the submissions to

determine what actions the City Council should take, if any. As a part of this undertaking, the City Council authorized the City Administrator to hire Environmental Science Associates ("ESA"), an outside consultant, to analyze the health and safety effects of transporting coal through OBOT.

The City's focus on health and safety was prompted at least in part by the language of the development agreement. In the agreement, the City committed to limiting its ability to impose new regulations on OBOT. With a few exceptions, the agreement freezes in place the regulations that existed when the agreement was signed and precludes the application of regulations adopted after the signing. However, one exception in the agreement allows the City to apply new regulations to the project if the City makes certain findings about the project's impact on health or safety.

ESA produced its report on June 23, 2016. The report summarized the existing public record before the City Council and purported to estimate the environmental impact of the proposed coal operations. A handful of other reports in the record also summarized the public comments and offered opinions on the health and safety question. For instance, one was prepared by Dr. Zoe Chafe for City Councilmember Dan Kalb, and another was prepared and sent to the City Council by a group of public health professionals called the "Public Health Advisory Panel." Environmental organizations, such as the Sierra Club, also submitted comments.

Based in large part on the ESA report, as well as the public testimony and comments, the City Administrator recommended that the City Council enact an ordinance prohibiting the storage and handling of coal at bulk goods facilities in Oakland. It is undisputed that no such facility currently exists in Oakland, and only one such facility has been contemplated – OBOT. But the City appeared to operate under the assumption that this new ordinance could not automatically apply to the OBOT facility because of the restrictions in the development agreement. So the City Administrator also recommended that the City adopt a resolution that would apply the ordinance to OBOT on the grounds that it would be "necessary to prevent

conditions substantially dangerous to the health and/or safety of existing and/or future occupants or users of the Project and Adjacent Neighbors." These recommendations were contained in an Agenda Report, which attached drafts of the proposed ordinance and resolution, the ESA report, and other comments, and was transmitted to the City Council on Friday, June 24, 2016. June 23, 2016 Agenda Report at 8 (Ex. 135.0008). On Monday, June 27, 2016, the City Council held a public hearing, at which it approved the proposed resolution and ordinance. (Under state law, city councils generally must read and vote on new ordinances, but not resolutions, twice. So while the ordinance in this case was initially approved by the City Council on June 27, it officially became law after the City Council's second, pro forma vote adopting it on July 19.) Ordinance No. 13385 (Ex. 4); Resolution No. 86234 (Myre Decl. ISO OBOT's Mot. for Summ. J. Ex. 50, Dkt. No. 141-50).

In response, OBOT filed this lawsuit. OBOT asserts that the City breached the development agreement by applying this new coal ordinance to OBOT, because the City Council failed to garner "substantial evidence" that transporting coal through the terminal would present a "substantial danger" to people in Oakland. OBOT also argues that the ordinance violates the Commerce Clause of the U.S. Constitution and is preempted by a variety of federal statutes: the Interstate Commerce Commission Termination Act, the Hazardous Materials Transportation Act, and the Shipping Act of 1984.

Shortly after the lawsuit was filed, the Sierra Club and San Francisco Baykeeper, two environmental advocacy groups, requested permission to intervene to help the City defend the ordinance. The organizations argued that they would bring their specialized expertise – in environmental law and the health and safety impacts of coal – to the case. The Court allowed the Sierra Club and San Francisco Baykeeper to intervene in the lawsuit, but limited the scope of their participation. Specifically, the Court ruled that these organizations could assist the City in defending its law, but that they could not bring counterclaims or cross-claims, or prevent the case from being dismissed pursuant to a settlement agreement between OBOT and the City. Mot. to Intervene (Dkt. No. 28); Order Granting Mot. to Intervene & Denying Mots. to Dismiss (Dkt.

No. 71).

Both sides filed motions for summary judgment on all of the claims brought by OBOT. With respect to OBOT's breach of contract claim based on the development agreement, the Court denied both sides' motions, concluding that a bench trial was necessary to properly assess the evidence in the record before the City Council. The Court deferred ruling on OBOT's constitutional and federal preemption claims, since it would be unnecessary to adjudicate those potentially more weighty questions if the case could be resolved on the breach of contract claim. The Court then held a bench trial, at which both sides presented the testimony of the key people involved in the project and in the creation of the record before the City Council, as well as expert testimony and documentary evidence.

## II.

For all the reasons discussed in this section, the record before the City Council does not contain substantial evidence that OBOT's proposed operations would pose a substantial danger to the health or safety of people in Oakland.

### A.

As a general matter, development agreements are contracts between local governments and developers that freeze existing zoning and land use regulations into place. These agreements are intended to provide developers with a measure of certainty that new and unexpected government regulations will not stymie their projects, particularly when the projects require years of investment, government approvals, and construction. Consistent with this general approach, the agreement between the City and OBOT includes a provision that prevents the City from imposing new regulations on the terminal project after the date on which the City signed and adopted the agreement. Development Agreement § 3.4.1 (Ex. 584.0022-0023); *see Save Tara v. City of W. Hollywood*, 45 Cal. 4th 116, 138 (2008); *Santa Margarita Area Residents Together v. San Luis Obispo Cty.*, 84 Cal. App. 4th 221, 226-27 (2000).

But there are a few exceptions, one of which is section 3.4.2 of the agreement. Section 3.4.2 allows the City to apply a new regulation to the project if the City has "substantial



evidence" that failure to apply the regulation would create a "substantial danger" to the health or safety of current or future users, occupants, or neighbors of the project. Specifically, section 3.4.2 of the development agreement states, in relevant part:

Notwithstanding any other provision of this Agreement to the contrary, City shall have the right to apply City Regulations adopted by City after the Adoption Date, if such application

(a) is otherwise permissible pursuant to Laws (other than the Development Agreement Legislation), and

(b) City determines based on substantial evidence and after a public hearing that a failure to do so would place existing or future occupants or users of the Project, adjacent neighbors, or any portion thereof, or all of them, in a condition substantially dangerous to their health or safety.

Development Agreement § 3.4.2 (Ex. 584.0023).

There is a common understanding in the law of the meaning of the words "substantial evidence," and there is no indication that Oakland and OBOT intended a different meaning. "Substantial evidence" is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion," so long as it is "reasonable in nature, credible, and of solid value." *City of South San Francisco v. Workers' Comp. Appeals Board*, 20 Cal. App. 5th 881, 896 (2018) (quoting *Braewood Convalescent Hospital v. Workers' Comp. Appeals Board*, 34 Cal. 3d 159, 164 (1983)). The "substantial evidence" standard is less rigorous than the evidentiary standard that governs civil trials, namely, the "preponderance of the evidence" standard, which requires juries to inquire whether the evidence makes it more likely than not that something happened. In other words, as applied to this case, the development agreement allows the City to apply a new law to the terminal even if the evidence suggests there is less than a 50 percent chance that the law is necessary to prevent a substantial danger to people in Oakland. This standard is deferential to the City. Even if the Court believed the proposed coal operations would not pose a health or safety danger, the Court would be required to uphold the decision to apply the new regulation to the facility as long as the record before the City Council contained reasonable and

credible evidence to support the City Council's conclusion.

Contrary to the parties' assertions, the Court need not get bogged down in state law standards that apply in cases involving judicial review of actions taken by administrative agencies. Administrative law is a highly specialized and technical field governed by its own set of statutes, regulations, and cases. This case is not an administrative law case. Rather, this is a contractual dispute, and the contract – namely, the development agreement – sets the standard the Court must apply.

It bears emphasis that notwithstanding the deferential standard of judicial review, under the agreement, the City Council's decision to ban coal at the facility may only be justified on the basis of evidence that was before the City Council at the time the decision was made. The City Council's record includes the oral and written testimony received at the public hearings, the comments submitted to the City Council by community members, the reports commissioned by public officials, and any other documents the City Council considered in connection with the ordinance before its passage. The basis of design for the terminal is also part of the record. When the City Council was considering the new law, the basis of design was the single most comprehensive description of OBOT's plans available, although OBOT supplemented it with various materials during the legislative process.

During the trial, both sides presented evidence that was not in the record before the City Council. For instance, email exchanges between people working on the ESA report were not part of the record before the City Council but were admitted at trial. This type of evidence is relevant to the Court's ruling, to a limited extent, because it sheds light on the adequacy of the evidence that was actually before the City Council. In other words, the non-record evidence admitted at trial can inform the Court's understanding of whether the record before the City contained substantial evidence that the proposed coal operations would pose a substantial danger to health or safety. In the discussion that follows, the term "record" is used to describe only the evidence before the City Council when it enacted the ordinance.

**B.**

Air pollution was one of the key concerns behind the ordinance. The most significant parts of the record before the City Council focus on whether OBOT's operations would diminish air quality in Oakland and thereby endanger human health. ESA used the evidence from the record to estimate emissions for the project, which were then reprinted in the City Administrator's June 23, 2016 report recommending that the City Council pass the ordinance and apply it to OBOT. June 23, 2016 Agenda Report at 12 (Ex. 135.0012). ESA's estimates, however, were almost completely unreliable.

Background on Emissions

The emissions at issue are particulate matter emissions. Particulate matter is an air pollutant consisting of a mixture of fine particles. It can include liquid droplets, chemicals, dust, metals, and other elements emitted from cars, factories, fires, and other activities, that become suspended in the air. The U.S. Environmental Protection Agency tracks two kinds of particulate matter – particulate matter 2.5 and particulate matter 10. Particulate matter 2.5, also known as PM 2.5, is made up of particles in the air that are 2.5 micrometers or less in diameter. That is the equivalent of 0.0001 inch or less in diameter, which is less than the thickness of a human hair. Particulate matter 10, also known as PM 10, is comprised of particles in the air that are between 2.5 and 10 micrometers in diameter. Typically, the smaller the particles, the deeper they can go into the human lungs and the easier it is for them to enter the bloodstream. ESA Report at 4-5 (Ex. 14.0062).

The most significant particulate matter emissions are expected from fugitive coal dust. Fugitive coal dust is created when pieces of coal jostle against each other, eroding the coal into fine particles. When air flows past these particles, they can become suspended in the air as fine particulate matter. These particles can be emitted during any activity that involves the movement of coal, including when coal is carried by rail car, unloaded from a train, moved around a bulk facility, or conveyed onto a ship. These kinds of emissions can also result from wind blowing over coal piles and producing coal dust that becomes suspended in the air. ESA

Report at 5-1 (Ex. 14.0070).

ESA estimated emissions in Oakland from each of the three stages of OBOT's operations and concluded that overall PM 2.5 emissions from the operations would be 21 tons per year, or 115 pounds per day. ESA believed that the bulk of these emissions would result from the staging phase – when the rail cars would be disassembled at the Port of Oakland's railyard and taken across the terminal's special rail spur to the terminal itself. Specifically, ESA estimated PM 2.5 emissions of 6 tons per year from the initial rail transport, 11.7 tons per year from the staging, and 2.7 tons per year from the operations at the terminal. These emissions estimates are summarized in Table 5-7 of the ESA report, which was reprinted in the June 23, 2016 Agenda Report provided to the City Council. (As the City explained at trial, the subtotal for staging of 11.7 tons per year was incorrectly printed as 18 tons in the ESA report, although the overall totals were added up correctly.) ESA also estimated the PM 10 emissions that would result from each phase of the operations. In large part, however, the discussion about emissions in the record and at trial focused on PM 2.5, likely because of the heightened health concerns associated with finer particulate matter. Accordingly, the discussion below focuses on PM 2.5 – although the methodological mistakes described apply to the calculations for both kinds of emissions. ESA Report at 5-17 (Ex. 14.0086); June 23, 2016 Agenda Report at 12 (Ex. 135.0012).

State emissions standards put ESA's numbers in context. These standards, which are often referred to as the "thresholds of significance," are used to monitor compliance with the California Environmental Quality Act. For PM 2.5, the annual threshold is 10 tons of emissions per year for a given project, and the daily threshold is 54 pounds of emissions per day. These thresholds reflect the emissions levels that California has determined would result in a significant and adverse impact on air quality from a particular project. BAAQMD May 2017 CEQA Guidelines at 2-1 to 2-2 (Long Decl. ISO City's Mot. for Summ. J. Ex. 68, Dkt. No. 166-11 at 20-21). Regional agencies in charge of air quality monitoring use these thresholds in their oversight of emissions from development projects and commercial operations in their areas. For

instance, the Bay Area Air Quality Management District (the "Air District") regulates air pollution in the Bay Area to ensure compliance with these standards. Typically, the Air District examines whether a project's estimated emissions will exceed the thresholds of significance to decide whether to require the developer to take measures to mitigate the emissions. BAAQMD May 2017 CEQA Guidelines at 1-6 (Long Decl. ISO City's Mot. for Summ. J. Ex. 68, Dkt. No. 166-11 at 17); Tr. 322:6-18, 333:24-334:22 (Chinkin). When recommending that the City Council enact the ordinance, the City Administrator pointed to the fact that ESA estimated that OBOT's emissions would exceed these state standards as evidence that the terminal would pose a substantial health danger.

Incidentally, ESA did not provide separate emissions estimates for coke, simply saying that it expected emissions to be similar for both commodities. This implied that ESA's estimates would remain largely the same as long as the total throughput of coal and coke remained 5 million metric tons. ESA Report at 5-18 to 5-19 (Ex. 14.0087-0088); Tr. 177:25-178:22 (Evans).

#### Transport and Staging: Covers and Surfactants

The first major problem with the emissions estimates for the transport and staging phases is that ESA assumed OBOT would take no mitigation measures during those parts of the operations. As explained in further detail below, while ESA offered rough estimates of what "controlled" emissions could look like, its analysis and final emissions estimates in Table 5-7 disregarded at least two critical mitigation measures that the developers committed to using – rail car covers and surfactants. This mistake tainted the record before the City Council. Not only were the estimates in Table 5-7 the grounds for ESA's conclusions about OBOT's dangers, but they were also an important part of the City Administrator's recommendation that the City Council enact the coal ban. June 23, 2016 Agenda Report at 12 (Ex. 135.0012). For this reason, the emissions estimates in Table 5-7 were the focal point of the debate at trial.

To begin, the City did not meaningfully explore whether rail car covers could be used to mitigate fugitive coal dust emissions, and if so, what their impact would be. The terminal operator, Terminal Logistics Solutions, has committed to requiring any rail cars transporting coal

to the terminal to use covers, made by certain identified manufacturers, such as EcoFab, or any other manufacturer willing to provide them. Oct. 6, 2015 OBOT Response to City Questions (Ex. 149.0008). Despite the developers' commitment, ESA's inquiry into the issue extended only as far as learning that these kinds of covers have not yet been used for coal cars in the United States. Unable to find additional information about how well these covers would work for coal cars, ESA simply assumed they would not be used. ESA Report at 2-11 to 2-13 (Ex. 14.0032-0034). This was a big mistake. The lack of existing data about the effectiveness of a new technology like rail car covers is not enough of a reason to assume them away, particularly when the developers have committed to using them.

ESA emphasized that there are no existing rules or regulations that would require the coal operations to use covers. Other commenters, and later, the City, echoed this point. But this simply begs the question. ESA Report at 2-13 (Ex. 14.0034). The project developers submit that they are willing to obligate themselves to accept only coal that is carried to the terminal on covered rail cars. That is, OBOT could, and seemingly would, contractually require the terminal operator, coal supplier, or rail carrier to use covers as a condition of doing business. This would address any concerns about limits on local governmental authority to impose constraints on the coal or rail operations. Oct. 6, 2015 OBOT Response to City Questions (Ex. 149.0008-0009, 0045-0046). And it appears that after the ordinance was passed, OBOT did just that, requiring the terminal operator to use covered rail cars as part of its lease agreement. Tr. 65:24-66:11 (Tagami).

Alternatively, the Air District in the Bay Area could require OBOT to mitigate emissions by using coal covers. As OBOT points out, the South Coast Air Quality Management District recently adopted a rule requiring covers. The rule requires facilities that store, handle, and transport coal and coke to cover vehicles carrying these goods before they leave the facilities. The rule also specifies the kinds of covers that are acceptable, allowing alternatives only if they are capable of preventing fugitive particulate matter emissions. South Coast Air Quality Management District Rule 1158(d) (Ex. 448.0004-0008). Not only could the Air District in the

Bay Area require the use of covers as a condition of issuing a permit to operate, but it could pass similar regulations that would apply more generally.

The City also asserts that its lawmakers could reasonably have concluded covers would be dangerous, given the public comments expressing concern that covered coal could be prone to spontaneous combustion. Tr. 188:22-189:10 (Evans); ESA Report at 5-5 (Ex. 14.0074); Chafe Report at 70 (Ex. 961.0072); Public Health Advisory Panel Report at 25 (Ex. 960.0035). But this was nothing more than generalized speculation, since the record before the City Council did not contain any actual, specific evidence about the danger of covers. In fact, Steve Radis, ESA's subcontractor for safety issues, told ESA that there was no data to support the idea that using covers on rail cars would increase the risk of coal fires or spontaneous combustion. June 21, 2016 Radis Email to Barringhaus (Ex. 58); Tr. 126:14-127:19 (Evans). And the Air District's Director of Planning testified before the City Council in September 2015 that the City should require covers on OBOT's coal cars (as well as its conveyors, storage, and other operations), suggesting their viability. Sept. 21, 2015 City Council Public Hearing Transcript at 160 (Myre Decl. ISO OBOT's Mot. for Summ. J. Ex. 29, Dkt. No. 141-29 at 5).

The City also failed to meaningfully consider how chemicals could be used to suppress coal dust emissions. Certain chemicals, called surfactants or dust suppressants, can be sprayed on a coal pile to create a crust on top of the coal. The crust can help keep the coal intact while it travels in an uncovered rail car or while it is stored as an uncovered pile. This decreases the amount of fugitive coal dust that a coal pile would otherwise create. Because surfactants are another potential mitigation measure that OBOT could be required to use – and one that OBOT itself proposes using – they should have factored into the City's analysis of the project's health dangers. South Coast Air Quality Management District Rule 1158 (d)(2)-(4) (Ex. 453.0005); Oct. 6, 2015 OBOT Response to City Questions (Ex. 149.0008, 0045-0046, 0049-0050); Tr. 277:21-278:2 (McClure); ESA Report at 2-10, 2-14 to 2-18 (14.0031, 0036-0039).

ESA excluded surfactants from its main emissions estimates because it claimed it did not have objective scientific data about how well surfactants would reduce coal dust emissions from

rail cars. But instead of attempting to estimate their effectiveness, ESA simply decided that surfactants would not be effective and did not account for them in its final emissions estimates. ESA Report at 2-17 to 2-18, 5-17 (Ex. 14.0038-0039, 0086). This again was a big mistake. Because the project developers had told the City they would require surfactants to be used on the coal arriving at the terminal, ESA should have made a meaningful effort to incorporate them in its final estimates rather than deeming them irrelevant.

ESA sought to justify its decision to disregard surfactants by asserting that surfactants would dissipate during the rail journey. Because surfactants can wear off, ESA concluded that fugitive coal dust emissions would resume unabated well before the trains reached the terminal. ESA Report at 5-5 (Ex. 14.0074). But this fails to acknowledge the ability of the coal supplier, rail carrier, or terminal operator to require surfactants to be reapplied during the journey. Surfactants could also be reapplied to the coal during the staging phase, just before the rail cars are broken up and taken to the terminal for unloading. Thus, the fact that surfactants can wear off does not justify omitting them from the analysis.

The City reprises its argument that surfactants were excluded because no laws require the coal supplier, terminal developer, or terminal operator to use them. June 23, 2016 Agenda Report at 10-11 (Ex. 135.0010-0011); *see also* ESA Report at 2-14 (Ex. 14.0035). But again, the Air District or another agency could impose regulations or permitting conditions requiring OBOT to use surfactants. If this is not enough, OBOT has expressed a willingness to commit itself contractually to using surfactants – which presumably includes requiring the rail lines carrying coal to the terminal to use surfactants as a condition of doing business.

ESA attempted to reason around its decision to exclude controls by arguing that its emissions estimates were already conservative because they did not account for other kinds of air pollution that OBOT's operations could cause. For example, ESA's estimates did not account for re-suspended dust – that is, coal dust that would accumulate on rail tracks and other surfaces, and later, as a result of wind or other movement, become suspended in the air as particulate matter pollution. ESA Report at 2-17, 5-4 to 5-5, 5-12, 5-16 to 5-17 (Ex. 14.0038, 0073-0074, 0081,



0085-0086). ESA suggested, albeit indirectly, that these emissions would make the proposed coal operations substantially dangerous even if the developers used controls. This line of reasoning was reiterated by other comments in the public record and by the City's experts at trial. But the City cannot justify the failure to analyze OBOT's intended design, which includes controls, by pointing to other gaps in the record – particularly where the record provides no way of comparing the mitigating effects of covers and surfactants to the effects of these aggravators that ESA points to. Combating error with error is not the way to create a credible record.

ESA's final estimates thus wrongly assumed that emissions during transport and staging would be uncontrolled. ESA provided rough estimates of "controlled" emissions earlier in its report, where it assumed (without any meaningful analysis) an 85 percent reduction in emissions during the transport and staging phases (Tables 5-2 and 5-5). But these numbers were excluded from the final table (Table 5-7). Although these earlier tables suggested the dramatic reduction in emissions that controls might make possible, ESA, and later, the City, gave them little, if any, weight. As explained earlier, the City Administrator reprinted Table 5-7 in the June 23, 2016 Agenda Report and concluded from it that the emissions from OBOT would pose a substantial danger to health and safety and that the City Council should pass the ordinance. As the City Administrator put it, "Per the table . . . the overall emissions from the OBOT project are expected to exceed both the daily and annual PM 10 and PM 2.5 City of Oakland CEQA Thresholds of Significance, which would be considered a significant unavoidable impact under CEQA and thus presumptively a substantially dangerous condition to health." June 23, 2016 Agenda Report at 12 (Ex. 135.0012); ESA Report at 5-6, 5-12, 5-17 (Ex. 14.0075, 0081, 0086); *see also* ESA Report at 5-15 to 5-19 (Ex. 14.0084-0088).

Therefore, given the record before it, the City Council was not even equipped to meaningfully guess how well these controls would mitigate emissions. This created a sizable gap in the record, and a major flaw in the City Council's ultimate conclusion that OBOT's emissions would pose a substantial health or safety danger.

Transport and Staging: Coal Type

The emissions estimates were further flawed because they resulted from a misapplication of federal guidance and mistaken assumptions about the type of coal to be transported to the terminal.

The guidance document ESA used to produce its emissions estimates was from the U.S. Environmental Protection Agency. Titled "AP-42," this document explains how to calculate emissions from different industrial activities and sources of pollution. ESA Report at 5-1 to 5-2 (Ex. 14.0070-0071); Tr. 172:6-25 (Evans); Tr. 351:12-352:6 (Chinkin); Tr. 536:10-537:2 (Sahu). There was a debate at trial about whether it was appropriate for ESA to use the AP-42 guidance, but in the end it doesn't matter, because even if using the AP-42 guidance was the best available approach, ESA did not select the appropriate inputs for it.

Of particular concern is ESA's choice of threshold friction velocity. Threshold friction velocity describes the minimum wind speed necessary for a collection of particles to begin moving. The lower the threshold friction velocity, the less wind is required to get the particles moving. Tr. 355:17-356:13 (Chinkin). The AP-42 guidance lists threshold friction velocities for six types of coal. ESA used the threshold friction velocity associated with "fine coal dust on concrete pad," which was 0.54 meters per second. However, OBOT's expert credibly and convincingly explained that this threshold friction velocity was too low a value to use for the coal that would travel by rail car from Utah to Oakland, because it reflected the wind speed necessary to begin moving an ultrafine pile of coal dust – the equivalent of coal dust that had been bulldozed and crushed under heavy equipment. Tr. 358:10-361:11 (Chinkin); Muleski Study (Ex. 1085). This is not what would be carried on rail cars from mines in Wyoming and Utah to Oakland. The threshold friction velocity for an "uncrusted coal pile," which reflects emissions from a coal pile that is actively moving with pieces being added, removed, and replaced, would almost certainly have been a better fit. Tr. 361:12-362:16 (Chinkin); Axetell & Cowherd Study (Ex. 982). This type of coal is listed as having a threshold friction velocity of 1.12 meters per second. AP-42 Guidance Section 13.2.5 – Industrial Wind Erosion at 13.2.5-5

(Ex. 435.0005).

Victoria Evans, the ESA project manager who oversaw the preparation of the report for the City, explained that ESA used the "fine coal dust on concrete pad" threshold friction velocity because it felt that would better capture jostling cars in motion, while the "uncrusted coal pile" threshold friction velocity better characterized stationary coal. Evans Decl. ISO City's Mot. for Summ. J. ¶ 7 (Dkt. No. 155 at 3-4). But OBOT's expert provided credible testimony, citing to the scientific studies underlying the AP-42 guidance, that the "uncrusted coal pile" coal type describes active, moving coal and more closely resembles the kind of coal that OBOT would handle.

This testimony was not meaningfully rebutted by the City's expert at trial. The City's expert responded by arguing, in large part, that the lower threshold friction velocity for "fine coal dust on a concrete pad" was justifiable because it compensated for other shortcomings in the AP-42 guidance. According to the City's expert, the threshold friction velocities listed for different coal types in the AP-42 guidance were not suited for estimating fine particulate matter emissions because they came from studies of larger particulate matter. Therefore, he said, even the threshold friction velocity for "fine coal dust on a concrete pad," which was the lowest one in the AP-42 guidance, was conservative. Tr. 538:1-539:25 (Sahu). But if the City's expert was correct about the AP-42 guidance being a poor fit for this case, perhaps the ESA report should not have estimated emissions using this guidance; at the very least, ESA should have described its shortcomings to the City Council. It would be difficult to conclude that ESA was justified in selecting an inapplicable coal type from inapplicable guidance simply because that coal type was the "least inapplicable" coal type from the inapplicable guidance, at least without an explanation in the record about why that would be appropriate.

OBOT's expert went on to estimate that the projected PM 2.5 emissions from staging would fall from 11.7 tons per year to 0.68 tons per year if the threshold friction velocity for "uncrusted coal pile" type coal were used. Tr. 365:12-366:2 (Chinkin); *see also* Chinkin Decl. ISO OBOT's Mot. for Summ. J. ¶ 28 (Dkt. No. 140 at 10). But even setting the expert's revised

estimates aside (since they were not before the City Council when the ordinance was passed), ESA's decision to use "fine coal dust on concrete pad" for its emissions estimates was a significant flaw in the record.

#### Transport and Staging: Rate of Emission

Another major issue with the emissions estimates for transport and staging is that they assume the same amount of fugitive coal dust will be produced at each mile of the rail journey from the coal mines to the terminal. ESA estimated that 6 tons of PM 2.5 would be emitted each year during the Oakland segment of the rail trip by calculating total emissions over the approximately 700-mile rail journey and multiplying that by the fraction of rail track in Oakland. In calculating total emissions, ESA assumed that PM 2.5 emissions from the rail cars would be one pound per mile per car for the entire 700-plus mile journey (assuming no covers or surfactants). Tr. 177:18-24, 198:9-204:4 (Evans). But common sense suggests that even if no controls were used – indeed, especially if no controls were used – the train speed and ambient wind speed would affect how much coal dust would be emitted and become suspended in the air. Tr. 345:14-346:17 (Chinkin); Tr. 567:8-22 (Sahu). As a point of comparison, OBOT's expert estimated fugitive coal dust emissions would be no more than 2.5 tons per year in the Bay Area and 0.1 tons per year in West Oakland if train and wind speeds were taken into account, assuming no controls. Tr. 348:13-350:9 (Chinkin). Although the Court takes no view on the accuracy of the expert's estimates, they suggest that a more precise estimate of coal dust emissions is possible – and that the City could estimate these values in a meaningful way if it chose to.

#### Terminal Operations

ESA's emissions estimates for terminal operations also have serious problems. OBOT has said it will use (and more importantly, will likely be required to use) "best available control technology" for the operations at the terminal that follow the staging phase – namely, unloading, storing, and transferring the coal to ships. Best available control technology is the Air District's term for the most effective emissions controls that are both technologically feasible and cost

effective, which the Air District can require a developer to use as a condition of receiving the permits it needs to begin construction and operation. BAAQMD Regulation 2, Rule 2 at 2-2-4 to 2-2-5, 2-2-11 (Long Decl. ISO City's Mot. for Summ. J. Ex. 60, Dkt. No. 166-3 at 5-6, 12).

OBOT is already laying the groundwork for using this kind of technology. For instance, OBOT has proposed using bottom-release rail cars to unload the coal into underground dust collection systems, and then moving the coal across the facility using enclosed conveyance systems with dust control technology. According to ESA, all of these control measures would qualify as best available control technology. ESA Report at 5-12 to 5-14 (Ex. 14.0081-0083); Tr. 194:22-195:7 (Evans).

But the City appears to have ignored these controls. ESA's estimates for emissions from terminal operations are listed in Table 5-6 of its report. Despite Table 5-6's title, which says that it contains controlled emissions estimates, the underlying spreadsheet strongly suggests that the table mistakenly contains uncontrolled emissions estimates. In the spreadsheet, the emissions estimates that are labeled "controlled" equal 1 percent of the emissions estimates labeled "uncontrolled," seemingly reflecting ESA's assumption that OBOT would use control technology that would be 99 percent effective in mitigating emissions. But, as OBOT's expert pointed out, the estimates labeled as "controlled" in the spreadsheet never made it into the final report. Instead, Table 5-6 presents the estimates labeled "uncontrolled" in the spreadsheet. And ESA used the numbers from Table 5-6 in its final table of emissions estimates from all three phases – that is, Table 5-7. ESA Report at 5-13, 5-17 (Ex. 14.0082, 0086); June 6, 2016 ESA Emissions Spreadsheet (Ex. 432.005); Tr. 135:11-136:12 (Evans); Tr. 367:12-372:16 (Chinkin).

Evans testified that the underlying spreadsheet, not the final report, is incorrect. According to Evans, ESA adjusted the inputs that were used to calculate emissions to account for controls. For instance, Evans says that ESA used reduced wind speeds to reflect OBOT's use of closed coal conveyance systems. (These inputs are not visible in the spreadsheet.) As a consequence, although the spreadsheet labels the numbers that were used in the final report as "uncontrolled," Evans says they are actually controlled numbers, and Table 5-6 was correctly

titled. Tr. 194:10-196:14 (Evans); *see also* Evans Decl. ISO Opp. to Summ. J. ¶¶ 9-10 (Dkt. No. 155 at 4).

It's not obvious which side's story is correct. The spreadsheet with the underlying numbers does not list the inputs that were used, such as wind speed; nor does it explain how these numbers may have been modified to capture the effects of using best available control technology. The City, for its part, did not elicit an explanation from Evans (or others) to clarify this confusion.

Given the state of the record, OBOT's read of the data is more credible. Evans's explanation requires reading the "uncontrolled" section of the spreadsheet to reflect controlled emissions estimates, and the "controlled" section to reflect a further 99 percent reduction in emissions. Would this mean the 99 percent reduction in the "controlled" section was duplicative, doubly accounting for controls? Does this mean that other "uncontrolled" values in ESA spreadsheets also implicitly incorporated control technology? Although the record is not clear, OBOT's explanation of what happened is far more plausible.

Notably, ESA's estimates appear to be the only ones in the record before the City Council about emissions from terminal operations. Tr. 196:15-21 (Evans). Even if the numbers in the report are accurate, the ambiguity about how they were calculated suggests that the City Council probably couldn't have understood what they represented even if it had tried. If the numbers in Tables 5-6 and 5-7 are actually mislabeled, as appears to be the case, the record is even more mangled. A 90 to 99 percent reduction in coal dust emissions would mean that ESA's estimated emissions from terminal operations would have been between 0.027 and 0.27 tons per year, not 2.7 tons per year. This is a dramatic difference, and the City Council did not have the chance to consider it.

#### The Air District's Authority

As the preceding discussion makes clear, an overarching problem with the record before the City Council is that it reflects no meaningful analysis of the Air District's role in mitigating the health and safety risks associated with the project. The ordinance, resolution, and underlying

reports hardly mention the agency – even though it was clear that the Air District would require OBOT to obtain permits to operate and that the Air District could impose conditions to limit emissions from the project. Evans admitted that the ESA report did not even contemplate whether the project would pose a danger after the developers had secured the necessary permits from the Air District. Tr. 112:19-21, 235:22-236:24 (Evans). Nearly all the evidence before the City Council presumed OBOT would operate in a regulatory vacuum.

Although the Air District permitting process is complex and involves multiple approvals, two primary permits are relevant here. The first is the "authority to construct," a permit the Air District requires the developer to obtain before building or installing anything. The second is the "permit to operate," which the Air District requires the developer to obtain before starting to use the facility or equipment that was installed pursuant to the authority to construct. The Air District can, and typically will, impose conditions on both the authority to construct and the permit to operate. And the Air District will not issue the permit to operate if the developer does not comply with the conditions associated with the authority to construct. The Air District has a fair amount of latitude: it can impose almost any condition that it deems necessary to ensure compliance with its emissions limits and other regulations. BAAQMD Regulation 2, Rule 2 at 2-2-16, 2-2-18 (Long Decl. ISO City's Mot. for Summ. J. Ex. 60, Dkt. No. 166-3 at 17, 19).

Most significantly, the Air District could impose permitting conditions that would limit the amount of coal that could be processed at the terminal. ESA assumed the terminal would be shipping 5 million tons of coal per year. Other commenters assumed 10 million tons. But if that amount of coal would pollute the air as much as the City speculates, there is strong reason to believe the Air District would step in, and the City provides no reason to think otherwise. Limiting the magnitude of the coal operations would have a significant impact on emissions, even if the Air District did not directly regulate coal dust from the rail transport or staging phase. As explained earlier, the Air District could also require OBOT to limit emissions by using rail car covers, surfactants, and other controls. Tr. 344:4-23 (Chinkin). All of this is consistent with the evidence presented at trial that the Air District had informed ESA that it could work with

OBOT to reduce its emissions by 95 percent compared to an entirely uncontrolled operation. Tr. 112:23-114:21 (Evans); May 20, 2016 Evans Email (Ex. 53.0003).

But the record before the City Council makes only fleeting reference to the Air District's authority. For example, a footnote in the City Administrator's June 23, 2016 report gestured to proposed Air District regulations, but concluded in a cursory manner (and incorrectly) that the ESA report already accounted for any impact these new regulations might have. June 23, 2016 Agenda Report at 5 n.1 (Ex. 135.0005). More generally, there is no serious evaluation in the record of the broad scope of the Air District's regulatory power or the effect it would likely have on the proposed coal operations.

Paradoxically, the ordinance itself recognizes that the Air District's permitting process is meaningful, even though the City disregarded it in evaluating OBOT's proposed coal operations. As written, the ordinance exempts manufacturing facilities in Oakland that consume coal and coke on site as part of their production processes, so long as their consumption is consistent with their permits from the Air District. This narrow exemption seems to be aimed at protecting an iron foundry in Oakland that burns coke to make pipes and fittings. Ordinance No. 13385 § 8.60.040(C) (Ex. 4.0010); June 23, 2016 Agenda Report at 4 (Ex. 135.0004); ESA Report at 2-23 (Ex. 14.0044); *see also* City's Mot. for Summ. J. at 8 & n. 16 (Dkt. No. 145 at 20). The City does not explain how the Air District's permit power could have been a reason to exempt the iron foundry from the ordinance yet unworthy of consideration when it came to OBOT.

### C.

Even if the emissions estimates could somehow be considered reliable despite the flaws discussed above, the record contains no meaningful assessment of how these emissions would actually affect air quality in Oakland.

Emissions are a measure of air pollution in terms of volume. In other words, an emissions estimate captures the quantity of a pollutant released into the air, typically in terms of pounds per day or tons per year. Air quality, on the other hand, is measured in terms of concentration. It captures the amount of pollutant in a given quantity of air. For particulate



matter, air quality is measured in terms of micrograms per cubic meter. The two metrics are distinct, albeit related. Air pollutant concentrations are calculated using dispersion models that use emissions estimates as inputs. By combining emissions estimates with data about a given geographic area and pollution source, these models assess how the emissions from a particular source affect a region's air quality. Tr. 321:5-323:15 (Chinkin).

Take, for example, a smokestack at a coal power plant that emits a constant amount of particulate matter each day. As you might expect, a person living next to the smokestack breathes in a different amount of particulate matter each day than a person living one mile from the smokestack. The air quality one mile away depends on many different factors, including wind speed, weather patterns, and baseline pollution levels. The same quantity of emissions can yield very different measures of air quality in different places and at different times. Because air quality describes how much particulate matter is in the air in a particular place, it more accurately reflects how much pollution a person actually breathes in.

ESA originally proposed a two-part study of the air pollution from OBOT: the first phase would involve reviewing the comments the City had received, and the second phase would involve independently analyzing OBOT's anticipated emissions and their effects on air quality. ESA even proposed conducting dispersion modeling to estimate the concentration of air pollution. Evans, who led the ESA project, testified that ESA thought it would be useful and important to do this kind of modeling. But the City rejected this plan, asking ESA to skip the air quality modeling. Tr. 108:10-110:2 (Evans); Oakland-ESA Service Agreement (Ex. 62); Jan. 8, 2016 ESA Draft Scope of Work at 10 (Ex. 25.0011).

Lacking air quality models of their own, some reports in the record instead imported the findings of a study by Daniel Jaffe of the University of Washington. Jaffe's study described particulate matter emissions along a rail route in the Columbia River Gorge in the summer of 2014. Jaffe's team measured PM 2.5 concentrations in the air before and after freight and coal trains passed by. On average, the researchers found that PM 2.5 concentrations increased by 8.8 micrograms per cubic meter when a freight train passed and by 16.7 micrograms per cubic meter

when a coal train passed. But these numbers were a poor substitute for actual air quality modeling for OBOT. Jaffe's findings reflected the wind speeds, weather patterns, and geographic features of the Columbia River Gorge, not Oakland. Moreover, the trains in the Gorge carried coal from the Powder River Basin of Wyoming and Montana. Powder River Basin coal is far dustier and likelier to emit particulate matter than western bituminous coal from Utah, making Jaffe's numbers largely inapposite to OBOT's operations. Nor did Jaffe's study model how controls, such as covers or surfactants, could affect emissions. Daniel A. Jaffe et al., *Diesel Particulate Matter and Coal Dust from Trains in the Columbia River Gorge, Washington State, USA*, 6 Atmospheric Pollution Research 946 (2015), <https://doi.org/10.1016/j.apr.2015.04.004>; Tr. 176:17-19, 179:12-180:5 (Evans).

Therefore, the numbers from the Jaffe study cannot be used as meaningful evidence of how OBOT's operations would impact the concentration of air pollutants in Oakland. Even though the differences between Jaffe's study and OBOT's operations were clear, the ESA report, the public health professionals' report, the Chafe report, and other public comments all made the mistake of uncritically applying Jaffe's findings to evaluate the terminal. ESA Report at 2-14 to 2-15, 5-7 to 5-8 (Ex. 14.0035-0036, 0076-0077); Public Health Advisory Panel Report at 18-19 (Ex. 960.0028-0029); Chafe Report at 14 n.17, 32 n.102, 70-71 (Ex. 961.0016, 0034, 0072-0073); *see also* Tr. 229:10-232:11 (Evans). Jaffe's earlier 2014 study, which was cited by some commenters, was inapplicable for similar reasons. Daniel A. Jaffe et al., *Diesel Particulate Matter Emission Factors and Air Quality Implications from In-Service Rail in Washington State, USA*, 5 Atmospheric Pollution Research 344 (2014), <https://doi.org/10.5094/APR.2014.040>.

Nor does the City's invocation of national air quality standards compensate for its failure to do air quality modeling. Those standards, officially titled the National Ambient Air Quality Standards, are established by the U.S. Environmental Protection Agency and used to measure air quality on a regional basis across the country. If a region does not meet any one of these standards, it is considered "out of attainment." For instance, when this litigation began, the Bay Area was considered out of attainment in terms of the concentration of PM 2.5 in the air,

although it was re-designated as "in attainment" in 2017. Tr. 329:2-330:16 (Chinkin). The standards are set at levels intended to protect public health. Tr. 396:17-397:17 (Maier); Tr. 603:5-25 (Moore). Although these standards could have provided a useful benchmark for the City to evaluate the danger from OBOT's emissions, the record provides no way for the City to make a meaningful comparison to them since it lacks any rigorous analysis of how OBOT would actually impact air quality in Oakland.

Despite the absence of any adequate air quality analysis, the City argues that OBOT would cause impermissible exceedances of the national standards. The record does not contain meaningful evidence to support this assertion. The concentration of a pollutant in the air is measured by dividing the amount of pollutant that passes through an air quality monitor by the total amount of air that goes through the monitor during a given time period. For PM 2.5, the annual standard is 12 micrograms per cubic meter, averaged over three years. This means the annual PM 2.5 concentration, averaged over the last three years, should not exceed 12 micrograms per cubic meter. The daily standard is 35 micrograms per cubic meter, averaged over three years. This means the daily PM 2.5 concentration, averaged over the last three years, should not exceed 35 micrograms per cubic meter, with seven days of exceedances allowed each year. The allowance for seven exceedances means that brief extreme weather events, like wildfires, do not put a region out of attainment. NAAQS Table (Chinkin Decl. ISO OBOT's Mot. for Summ. J. Ex. B, Dkt. No. 140 at 26-28); ESA Report at 4-2 to 4-3 (Ex. 14.0059-0060); Tr. 324:11-328:12 (Chinkin).

Not only did the City fail to meaningfully estimate how many exceedances OBOT would cause, the City did not appear to recognize that seven exceedances of the national standard for daily PM 2.5 concentration are allowed. ESA and other public commenters merely stated, in a generalized way, that OBOT would cause additional exceedances. ESA Report at 4-12, 5-9, 5-15 to 5-17 (Ex. 14.0069, 0078, 0084-0086); *see also* Public Health Advisory Panel Report at 18 (Ex. 960.0028). In light of the allowance for seven exceedances, a handful of additional exceedances caused by OBOT would not automatically lead to a violation of the national

standards. Moreover, the record does not appear to acknowledge the Air District's rules specifying that the agency will not grant a permit to construct for a project that will significantly increase emissions from a federally monitored pollutant without first finding that the project will not contribute to an exceedance of the national standard for that pollutant. BAAQMD Regulation 2, Rule 2 at 2-2-12 to 2-2-13 (Long Decl. ISO City's Mot. for Summ. J. Ex. 60, Dkt. No. 166-3 at 13-14).

#### D.

The City argues that none of this matters because no amount of exposure to particulate matter is safe, especially for the vulnerable residents of West Oakland. But the City's contract with OBOT sets the bar higher. Recall that section 3.4.2 of the development agreement says that before applying a new regulation to OBOT, the City must determine, based on substantial evidence, that existing or future occupants or users of the project or adjacent neighbors would face a condition *substantially* dangerous to their health or safety without the regulation. When the City asserts that any increase in exposure to particulate matter is enough to meet this standard, it reads the word "substantial" out of the contract.

Deciding what is "substantial" requires context. To understand whether something poses a "substantial" danger, you need a baseline against which to compare the danger. Defining "substantial" as "[o]f considerable importance, size, or worth," the Oxford English Dictionary gives the following example of its usage: "a substantial amount of cash." *Substantial*, Oxford English Dictionary, <https://en.oxforddictionaries.com/definition/substantial> [<https://perma.cc/XAS2-BC7C>]. But what is a substantial amount of cash? Without context, it's impossible to tell. Ten thousand dollars in cash may not be substantial to Phil Tagami, but it would be substantial to a typical public school teacher.

Of course, the City was not limited to using federal and state standards as context. Oakland's assertions that these existing standards are inadequate to protect the health of its residents may be legitimate (notwithstanding the record's failure to provide meaningful evidence of that). And presumably the City is correct that adverse health effects can sometimes result

from pollution levels lower than the national and state standards. Tr. 586:24-587:5, 589:4-590:12 (Moore); Chafe Report at 19 (Ex. 961.0021). But if these are not the right standards for assessing what makes for "substantial" danger, what are? If the City wanted to argue that the national and state standards are insufficient, it should have provided a different way of showing that the danger from OBOT to public health would be substantial, rather than simply repeating that no amount of PM 2.5 exposure can be considered safe.

For instance, perhaps the City could have compared emissions from the OBOT project to emissions from other sources nearby – the Port of Oakland, the Bay Bridge toll plaza, the iron foundry exempted by the ordinance, or even the construction of a new stadium for the A's that is being contemplated at the port near Jack London Square. Perhaps the City could have argued that any project with more particulate matter emissions than one or more of these sources would pose a substantial danger. Although it's not clear that this would have been sufficient, at the very least, it would have provided a benchmark for the policymakers to use when evaluating the magnitude of OBOT's potential effects on public health.

Counterintuitively, the City says that any emissions pose a substantial danger even though it continues to allow the East Bay Municipal Utility District and iron foundry to consume coal and coke – and emit particulate matter. Ordinance No. 13385 § 8.60.040(C) (Ex. 4.0010); June 23, 2016 Agenda Report at 4 (Ex. 135.0004); ESA Report at 2-23 (Ex. 14.0044); *see also* City's Mot. for Summ. J. at 8 & n. 16 (Dkt. No. 145 at 20). Granted, these facilities receive and use less coal and coke than the shipping terminal would. But if any emissions are a substantial danger, how does the City justify allowing emissions from these sources? The utility district and iron foundry are not alone. All kinds of activities emit particulate matter, from truck traffic to office park development. Tr. 33:24-35:22 (Cashman). Without comparing these activities' impact on air quality to OBOT's, it's difficult to grasp how the City decides which activities pose a substantial danger to health and which do not.

At trial, the ESA project manager made clear that context would have been useful. However, the City had restricted the scope of ESA's study so that it was limited to identifying

existing agency-developed thresholds and the public comments in the record before the City. Oakland-ESA Service Agreement (Ex. 62.0032, 0033, 0037); *see also* Jan. 8, 2016 ESA Draft Scope of Work at 7 (Ex. 25.0008). As a result, ESA did not compare the OBOT emissions estimates to emissions from other sources of pollution in Oakland, or even to emissions from other bulk facilities in California. There wasn't even a comparison to the overall level of emissions in Oakland, even though ESA "could easily have done that." Tr. 206:4-210:9 (Evans). Much of this information was available from regional Air Districts or the U.S. Environmental Protection Agency. An Air District official even testified before the City Council that the Air District could provide data on air quality in Richmond, where there is another shipping terminal and port. Sept. 21, 2015 City Council Public Hearing Transcript at 163 (Myre Decl. ISO OBOT's Mot. for Summ. J. Ex. 29, Dkt. No. 141-29 at 8). At the very least, a clearer presentation in the record about the impact on air quality of shipping terminals in Richmond, Long Beach, or elsewhere could have shed some light on the reliability and magnitude of ESA's estimates for OBOT.

Relatedly, the City emphasizes that the old army base is located near residential neighborhoods in low-income parts of West Oakland, as well as near a child care center and schools. The City correctly points out that children and low-income people are more vulnerable to environmental contamination. And it rightly expresses concern that existing air quality standards may be especially inadequate to protect these particular Oaklanders from public health dangers. These are factors that the City can, and absolutely should, consider when assessing whether the proposed operations will present a substantial danger to public health. But it is not enough to simply intone that the facility will operate near a child care center and low-income neighborhoods. If the City wanted to point to these residents to justify the ordinance, it should have compiled a record with credible evidence that would allow the City to assess whether the proposed coal operations would *actually* present a substantial health danger to these people.

#### **E.**

The City raises a host of other concerns about the terminal, including fire hazards, worker

safety, and greenhouse gases. But on these points, too, the City's record lacks substantial evidence that the coal operations will pose a substantial health or safety danger.

#### Fire Safety

Any bulk commodity shipping operation will involve some fire risk, which the City knowingly took on when it signed the development agreement. But the record before City Council contains mere speculation about the possibility of combustion, with no attempt to quantify the risk or meaningfully compare it to the fire risk from operations involving commodities other than coal. Taken to its extreme, the City's argument suggests that the City could put the brakes on any development given any chance of fire.

The record before the City Council and the evidence at trial contradicted the City's speculation that coal operations would pose a more significant danger of fire or combustion than other bulk commodity operations. As the City Council was informed in advance of its September 2015 hearing, bituminous coal is classified as a low fire risk by the National Fire Protection Association, a nonprofit organization that creates model fire safety codes used nationwide. Specifically, bituminous coal has a flammability rating of 1 on a scale of 1 to 4 – the same rating that ground corn has. Sept. 10, 2015 City Agenda Report at 5 (Ex. 213.0005); Basis of Design – Potential Commodities, NFPA 704 (Ex. 1261). The Fire Department did not keep this a secret: in a fall 2015 meeting with Claudia Cappio, who was then the Assistant City Administrator and responsible for managing the army base development project, the Oakland Fire Marshal informed Cappio not only that coal was a low risk commodity on the National Fire Protection Association's rankings, but also that the Fire Department uses these rankings in its emergency response system. Tr. 468:20-469:22 (Cappio). The National Fire Protection Association also classifies commodities into "dust hazard classes" based on their relative risk of explosion (using a slightly different ranking than for fire risk). Bituminous coal dust and petroleum coke dust are both classified in the lowest dust hazard class. By comparison, cellulose, which is the main component of paper (and which the City presumably would have no objection to shipping through the terminal, at least so long as it's recycled), belongs to a higher

dust hazard class. NFPA 68 Standard on Explosion Protection by Deflagration Venting at 68-57, 68-67 (Ex. 900.0060, 0070); Tr. 415:17-416:11 (Rangwala).

Radis, ESA's safety subcontractor, actually told staffers at ESA that major fires at coal terminals are infrequent and more commonly associated with Powder River Basin coal. June 15, 2016 Radis Email to Barringhaus (Ex. 48); Tr. 127:20-128:20 (Evans); *see supra* p. 26. Radis's statements, like the Fire Marshal's comments, do not appear to have made it into the ESA report, and do not appear to have been meaningfully explored elsewhere in the record. This further detracted from the City's ability to make an informed decision about the project's dangers.

The record is also bereft of any serious discussion of the Fire Department's oversight and ability to mitigate the project's risks. As the City acknowledges, the OBOT developers will be required to submit a fire safety plan once the project is completely designed, before the building permit is issued. At that point, the Fire Department will be able to require changes to the plan or reject the plan if it does not adequately address fire hazards. 2012 Oakland Army Base Project Standard Conditions of Approval/Mitigation Monitoring and Reporting Program at 48 (Ex. 138.0049). This process was set up as part of the regulatory scheme for the redevelopment of the army base, which the City Council approved in July 2013 and which involved more than 70 pages of environmental conditions and mitigation measures that OBOT is required to comply with. But nothing in the record examines the effectiveness of these requirements. 2012 Oakland Army Base Project Standard Conditions of Approval/Mitigation Monitoring and Reporting Program (Ex. 138); Tr. 278:16-280:2 (McClure); Tr. 470:3-471:12 (Cappio). ESA had offered to evaluate mitigation measures for fire risk, but the City Council excluded that from ESA's scope of work as well. Jan. 8, 2016 ESA Draft Scope of Work at 11-12 (Ex. 25.0011-0012); Oakland-ESA Service Agreement (Ex. 62). Perhaps the City Council thought the Fire Department's regulatory authority would not be enough to address the fire risk. But the record does not adequately explain why this would be the case.

#### Worker Health and Safety

The evidence in the record about danger to worker health and safety, relative to the health



and safety risks posed by other bulk commodity operations, is even thinner. Again, there is little discussion of whether mandatory workplace safety laws would be inadequately protective and if so, why. The Chafe report refers to the health risks for coal miners as evidence of the kinds of dangers workers at the terminal would face, but does not discuss how dangers would differ at a bulk materials facility that uses best available control technology and is subject to federal, state, and local workplace safety laws. The Chafe report also asserts that existing workplace coal dust standards are insufficient to prevent the illnesses that result from coal dust, but withholds any explanation of those standards or why they are inadequate. The same report criticizes OBOT for not adequately evaluating the health risks of coal dust to workers, without acknowledging the preliminary nature of OBOT's operating plans. Chafe Report at 33-39 & nn. 125-26 (Ex. 961.0035-0041). The ESA report makes similarly sweeping statements, like when it points to comments in the record about the health risks of coal dust buildup. ESA Report at 5-20 to 5-21 (Ex. 14.0089-0090). Certainly these are real concerns, but the record provides no way of understanding just how significant a danger they pose, particularly once all reasonable mitigation measures are taken.

#### Global Warming

The hostility toward coal operations in Oakland appears to stem largely from concern about global warming. To be sure, shipping coal for use in other countries will make some contribution to the accumulation of greenhouse gases in the earth's atmosphere, and climate change is detrimental to public health and safety. But the City's argument that global warming allows it to invoke section 3.4.2 of the development agreement barely merits a response. It is facially ridiculous to suggest that this one operation resulting in the consumption of coal in other countries will, in the grand scheme of things, pose a substantial global warming-related danger to people in Oakland.

#### Other Risks

The City gestures to other risks, such as the release of metals like mercury, arsenic, and lead from coal and coke into the environment, but there is virtually nothing in the record to

support a conclusion that these elements will escape in sufficient quantities to pose a substantial danger to public health. The ordinance proclaims that "exposure to these toxic heavy metals is linked to cancer and birth defects" without explaining the extent to which this project will lead to meaningful exposure to these metals, where that exposure will be in Oakland, or the likelihood of adverse health effects from it. Ordinance No. 13385 § 8.60.020(B)(1)(a) (Ex. 4.0005). The evidence in the record is equally devoid of such analysis. ESA Report at 3-8 to 3-9 (Ex. 14.0053-0054); Chafe Report at 15-17, 26-28 (Ex. 961.0017-0019, 0028-0030); Public Health Advisory Panel Report at 29-32 (Ex. 960.0039-0042). Again, simply identifying a potential risk is not the same as evaluating whether that risk poses a substantial danger.

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The City was not required to compile a perfect evidentiary record; far from it. But the gaps and errors in this record are so numerous and serious that they render it virtually useless. Perhaps a record that more carefully and thoroughly laid out the evidence, accompanied by more rigorous analysis, could have satisfied the standard the City imposed on itself in the development agreement. But this record does not come close to doing so, which means OBOT prevails on its breach of contract claim.

### III.

The intervenors defending the ordinance, the Sierra Club and San Francisco Baykeeper, raise a new argument in post-trial briefing: that California Government Code section 65866, which is a part of the development agreement statute, allows the City to apply the ordinance to OBOT even without substantial evidence in the City Council record that the coal operations present a substantial danger to people in Oakland, and notwithstanding the language of section 3.4.2 of the development agreement. The development agreement statute provides the groundwork for cities and counties to give developers a measure of certainty about the legal regimes that will govern their projects by locking in the rules and regulations that are in place at the time the agreements are signed. *See Mammoth Lakes Land Acquisition, LLC v. Town of Mammoth Lakes*, 191 Cal. App. 4th 435, 443-44 (2010). Although normally California public

policy prohibits local governments from contracting away their right to exercise their "police power" in the future – that is, the power to regulate private conduct in furtherance of the public good – the development agreement statute creates a limited exception to this rule. *See Santa Margarita Area Residents Together*, 84 Cal. App. 4th at 232-34. Specifically, section 65866 of the statute says the following:

Unless otherwise provided by the development agreement, rules, regulations, and official policies governing permitted uses of the land, governing density, and governing design, improvement, and construction standards and specifications, applicable to development of the property subject to a development agreement, shall be those rules, regulations, and official policies in force at the time of execution of the agreement. A development agreement shall not prevent a city, county, or city and county, in subsequent actions applicable to the property, from applying new rules, regulations, and policies which do not conflict with those rules, regulations, and policies applicable to the property as set forth herein, nor shall a development agreement prevent a city, county, or city and county from denying or conditionally approving any subsequent development project application on the basis of such existing or new rules, regulations, and policies.

The intervenors appear to make two alternative arguments based on this provision. The first appears to be that section 65866 allows a local government, in a development agreement, to restrict its ability to apply future *land use* regulations to the property, but not *other* types of new regulations (at least so long as those other types of regulations do not conflict with the land use regulations that have been locked into place). Applying this reading of section 65866 to this case, the intervenors appear to argue that: (i) the coal ordinance is not a land use regulation; (ii) the coal ordinance does not conflict with any land use regulations that were frozen in place when the development agreement was signed; and therefore (iii) Oakland is permitted to apply the ordinance to OBOT. In other words, according to the intervenors, section 65866 does not meaningfully disturb the default rule, at least with respect to non-land use regulations, that a local government may not contract away its police power. In the intervenors' view, this means that the Court should construe section 3.4.2 of the development agreement and its "substantial evidence" requirement to apply only to (i) land use regulations or (ii) non-land use regulations

that directly conflict with locked-in land use regulations. The consequence of this would be that section 3.4.2 would not be applied to this ordinance at all, to avoid a conclusion that section 3.4.2 gives away more of Oakland's police power than Government Code section 65866 permits.

Whatever else might be said about this argument, the problem with it in this case is that it's too inconsistent with the language of the development agreement itself. Neither section 3.4.1, which freezes new regulations by the City, nor section 3.4.2, which sets out the health and safety exception, say that the substantial evidence standard is only meant for new land use regulations. The language of the development agreement does not even distinguish between land use regulations and non-land use regulations. And the City clearly knew how to draw distinctions between categories of regulations. The development agreement demonstrates this by carving out not only the health and safety exception in section 3.4.2 but also an exception for new regulations relating to construction under section 3.4.4. Nor do sections 1.1 or 3.4.3, which define "Existing City Regulations" and require the City to provide the developer with a compiled volume of these regulations, limit the laws that are frozen in place to land use regulations. As if to further prove this point, the City itself has, from the very early days, proceeded on the theory that section 3.4.2's substantial evidence standard applies to the ordinance. This is why the contract with ESA, the City Administrator's Agenda Reports to the City Council, and the ordinance and resolution, among many other documents, all reference section 3.4.2 of the development agreement as the governing standard.

In the alternative, the intervenors appears to argue that if section 3.4.2 applies to all new laws, it is invalid and unenforceable because it restricts Oakland's police power more than the Government Code allows, and contrary to public policy. Perhaps there is merit to this argument, but the Court declines to consider it, because it is beyond the scope of the intervention that was allowed in this case. The Sierra Club and San Francisco Baykeeper were permitted to intervene to help defend Oakland, not to seek to invalidate a provision of an agreement that Oakland entered into. If the intervenors wish to assert this argument by suing Oakland and OBOT in state court to invalidate section 3.4.2, presumably they may do so. Indeed, the issue is likely better


addressed in state court, because it is complicated, novel, and presents important questions of state law. Although OBOT is right to note that it would also be unfair to force it to defend against this argument so late in the litigation, that is beside the point, because the intervenors could not have raised it earlier in any event.

**IV.**

The resolution applying the coal ordinance to the OBOT facility is invalid, because it is a breach of the development agreement. The City is therefore enjoined from relying on the resolution either to apply the ordinance to OBOT or to restrict future coal operations at the facility. As a practical matter, this renders the coal ordinance a nullity, because the only reason the City adopted it was to restrict OBOT's operations, and OBOT is the only facility in Oakland to which it could conceivably apply. But as a strictly technical matter, there's no reason to strike down the ordinance once it has been determined that Oakland may not presently apply it to OBOT. The City remains free, of course, to pursue future regulation of the project so long as it complies with its legal obligations, including any legitimate contractual obligations to the project developers. Because OBOT prevails on its breach of contract claim, the Court enters judgment for OBOT without reaching the constitutional and statutory claims raised at summary judgment.

**IT IS SO ORDERED.**

Dated: May 15, 2018

  
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VINCE CHHABRIA  
United States District Judge