March 18, 2021
Governing Board Members
South Coast Air Quality Management District

Re: Need for a Strong Refinery Rule 1109.1 by June 4, 2021 – Installing Pollution Controls for Boilers & Heaters Delayed for Decades

Dear AQMD Governing Board,

This proposed refinery boiler and heater regulation represents the largest opportunity for emission cuts from stationary sources in decades (including 7 to 9 tons per day of Nitrogen Oxides (NOx) pollution). Adopting a strong Refinery Rule 1109.1 by June 4, 2021, would correct years of delayed emissions controls, which has caused people in the region to suffer unnecessarily from long-term air pollution while providing significant cost savings to refineries. These harms are especially concentrated and disproportionately affect low-income residents and communities of color. NOx emissions not only directly harm the respiratory system, but also cause the formation of ground-level ozone and deadly fine particulate matter 2.5 micrometers in size and smaller in the atmosphere (PM2.5) —thus, controlling NOx also cuts PM2.5 emissions. Because refineries have put off making necessary investments for so long, extensive pollution controls are needed now. Refineries must catch up and pay the bill for deferred modernizing.

Though the number of heaters and boilers requiring pollution controls is extensive, such controls are very cost-effective on a per ton of NOx basis (because emissions are so high and can be drastically cut). These refinery improvements would create many jobs through the installation of controls. Many or most of these heaters and boilers are decades old, and do not have modern controls. There are hundreds being operated in the region, and even one refinery heater or boiler can emit more NOx in one hour than several houses do in a year. It is appalling that in this region, with its extreme regional smog and related health impacts, the District does not have a regulation on the books requiring modern controls on such large old polluters. This lack of regulation is the result of the failed RECLAIM program, which allowed refineries to delay the installation of pollution controls for decades.

In order to illustrate the ubiquity of boilers and heaters at local refineries, we compiled the attached District data that tells the story at just a glance.[1] These massive boilers and heaters drive refinery energy use, and so are present in most refinery processes. Refinery boilers and heaters are numerous, emit millions of pounds per year of NOx, hundreds of thousands of pounds per year of PM, and the majority have no standard emissions controls, such as Selective Catalytic Reduction (SCRs)

[1] The District provided this data at our request in the AB617 Wilmington, Carson, and West Long Beach Community Emission Reduction Plan. This data does not include additional large emissions from Chevron El Segundo and the Torrance Refinery that are also subject to Refinery Rule 1109.1.

technology. SCRs can cut emissions at least 95%, and have been available since the 1960s. You do not have to get into the weeds to see the enormity of this problem.

As a result, we urge the Board Members to endorse a strong Refinery Rule 1109.1 and adopt by June 4, 2021, that provides the following:

- **Establishes a 2ppm NOx standard for all large boilers and heaters** (i.e., boilers and heaters burning more than 40 million BTUs (British Thermal Units) of gas per hour) – this emissions limit has already been deemed feasible and cost-effective by the District for large boilers and heaters, and it would achieve a 95% reduction in NOx emissions.
- **Removes exemptions for startup, shutdown, and malfunction periods** – refineries should not be provided with broad exemptions that incentivize calling non-compliance periods "malfunctions" that are the result of inadequate equipment maintenance. Nor should refineries be allowed to pollute without limitation during foreseeable startup and shutdown periods.
- **Removes alternative emission compliance allowances** – refineries would be allowed to craft their own emissions limits under current concepts, rather than meet straightforward and tight emissions standards set now. These alternative approaches could allow for baseline and other manipulation to make it appear as if large pollution reductions are being achieved, and delay decisions on emissions standards until after rule adoption, effectively undermining public participation and transparency.
- **Removes long emissions averaging times –** refineries should not be provided with long emissions averaging times that allow refineries to hide significant pollution spikes released in communities. These long emissions averaging times are unnecessary and threaten public health and safety.

The undersigned Environmental Justice and health advocates urge you to protect our communities, and comply with Clean Air Act requirements to adopt available controls for this huge source of emissions. This is not the time to accept oil industry excuses to further delay or weaken long-needed regulation. Thank you for your consideration.

Sincerely,

Julia May, Senior Scientist, and Alicia Rivera, Wilmington Community Organizer and AB617 WCWLB Steering Committee Member, Communities for a Better Environment (CBE)

Oscar Espino-Padron, Attorney, Byron Chan, Attorney, and Adrian Martinez, Attorney, Earthjustice

Jesse Marquez, Executive Director, Communities for a Safe Environment (CFASE)

Taylor Thomas, Co-Executive Director, East Yard Communities for Environmental Justice (EYCEJ)

David Petit, Senior Attorney, Natural Resources Defense Council (NRDC)

Monica Mariko Embrey, Associate Director, Beyond Dirty Fuels Campaign, Sierra Club

Chris Chavez, Deputy Policy Director, and AB617 WCWLB Steering Committee Member, Coalition for Clean Air

Maya Golden-Krasner, Deputy Director / Senior Attorney, Climate Law Institute, Center for Biological Diversity (CBD)

(Attachment)

ATTACHMENT

List of units from Wilmington/Carson/W. Long Beach AB617 Community Emission Reduction Plan, App.5b-4 (2016 data) (This does not include Chevron El Segundo and the Torrance refinery's additional large emissions.)

Marathon (Tesoro) LA in Wilmington & Carson: ~60 Boiler & Heaters

- **~1.5 million lbs/yr NOx, ~300,000 lbs/yr PM** (or 2.2 tons/day NOx and 0.4 tons/day PM)
- Most have no SCR emissions controls

Boiler/Heater Applic. #	**Size** (million BTU /hr)	**NOx** (lbs/year)	**PM** (lbs/year)	SCR Controls?
470240	183.54	129,763	(missing)	N
470241	183.54	112,663	9,885	N
552867	550	112,212	23,116	N
509460	218.4	101,638	6,115	N
552815	650	88,596	8,320	Y
470234	183.54	78,583	8,051	N
509444	198.98	78,366	9,456	N
469913	69	76,781	2,872	N
470235	183.54	70,754	(missing)	N
552797	310	59,137	13,931	N
552945	173	53,117	11,223	N
469243	252	45,198	94,610	Y
552937	130	38,415	2,955	N
552962	255	37,232	3,718	N
552896	130	35,378	2,000	N
552891	130	32,353	2,616	N
552804	130	32,299	1,961	N
552796	150	30,233	1,466	N
552833	120	27,827	1,586	N
470000	147	24,170	15,487	Y
552919	80	23,638	950	N
552818	427	23,464	2,460	Y
469919	203.8	22,295	1,332	Y
552799	100	20,876	2,902	N
469279	45	19,228	1,598	N
552828	300	17,983	1,906	Y
469917	48.6	17,419	1,385	N
469960	60	14,429	2,869	N
469990	145.97	13,814	23,852	Y
469974	49.9	12,747	(missing)	N
469970	82.2	10,900	3,625	Y

Boiler/Heater Applic. # (continued)	**Size** (million BTU /hr)	**NOx** (lbs/year)	**PM** (lbs/year)	SCR Controls?
552959	52	10,655	768	N
552806	39	9,327	1,014	N
470286	31.4	8,961	(missing)	N
552936	82	8,911	3,630	N
552965	39	8,892	916	N
469998	71.4	8,691	(missing)	N
553164	39	7,954	809	N
469986	35	6,869	1,157	N
552925	39	6,605	1,795	N
469976	28.5	6,375	(missing)	N
552899	39	6,222	979	N
552940	39	5,696	351	N
469992	139.5	5,319	(missing)	N
469994	47.6	5,113	2,527	Y
552934	22	4,984	386	N
552943	52	4,576	2,275	N
469997	47.6	4,459	2,000	Y
469964	36.1	4,365	(missing)	N
469962	55.8	4,169	(missing)	N
470285	31.4	3,250	16,363	Y
552930	10	2,739	316	N
552939	12.5	2,586	74	N
469929	63.2	2,471	1,701	Y
552926	11	2,263	150	N
469995	23.5	1,993	(missing)	N
552802	171	(missing)	(missing)	N
469957	81	(missing)	(missing)	N
469958	76.8	(missing)	(missing)	N
509650	69	(missing)	(missing)	N
Total (lbs/yr)		**1,611303**	**309,566**	

Phillips 66's Wilmington and Carson Refinery Boilers & Heaters have 2nd highest emissions:

- **Together, Phillips Carson & Phillips Wilmington emitted ~1.4 million lbs/yr NOx, ~160,000 lbs/yr PM** (or ~1.9 tons/day NOx and 0.2 tons/day PM)
- Again – most have no SCR

Phillips 66 Co LA Refinery (Wilmington)				
Boiler/Heater Application Number	**Size** (million BTU /hr)	**NOx** (lbs/year)	**PM** (lbs/yr)	Selective Catalytic Reduction (SCR)
535595	250	119,470	6,860	**N**
535594	179	72,018	2,215	**N**
535592	142	60,489	2,549	**N**
535182	60.2	46,744	1,270	Y
535309	135	45,005	3,399	**N**
535200	110	41,708	2,533	**N**
177999	36	34,120	NA	**N**
535194	116	26,790	2,654	**N**
562111	304	24,376	7,057	Y
535195	68	23,617	2,654	**N**
535201	100	22,556	1,728	**N**
582369	73.6	20701	2086	**N**
535186	76	17,876	662	**N**
535302	350	14,611	8,760	Y
535303	460	11,938	2,105	Y
535308	37	7,474	1,064	**N**
535189	38	7,076	1,027	**N**
535306	39	6,816	986	**N**
535311	28.5	6421	482	**N**
535190	30	6,245	906	**N**
535197	56	6,157	2,654	**N**
535196	71	6,120	2,654	**N**
535202	70	5,612	1,071	**N**
535206	31	5,558	801	**N**
535183	35	4,600	660	**N**
535184	17	4,260	615	**N**
535187	27	3,928	511	**N**
535203	42	3,678	803	**N**
535209	14	2,635	372	**N**
535181	27	2,280	331	**N**
535204	24	2,152	450	**N**
535307	17	2,068	299	**N**
535198	19	640	120	**N**
535188	41.3	588	2,947	Y
535316	15	104	6	**N**
Total lbs/yr		666,431	65,291	
Total tons/day		0.9	0.1	

Phillips 66 Co Los Angeles Refinery (Carson)				
Application Number	**Size** (million BTU /hr)	**NOx** (lbs/year)	**PM** (lbs/year)	Selective Catalytic Reduction (SCR) Controls
535488	352	190,640	7,490	N
535242	340	177,253	12,605	N
535219	350	142,663	21,550	N
535229	175	34,873	5,702	N
535238	70	34,525	2,495	N
535487	352	31,656	25,842	Y
535222	153.6	31,468	2,734	**N**
535230	175	31,073	2,895	**N**
535224	153.6	31,049	12,989	**N**
535241	22	3,808	104	**N**
Total lbs/yr		709,008	94,406	
Total tons/day		1.0	0.1	

Ultramar / Valero Wilmington Boilers & Heaters:

- **Boilers & Heaters at Valero's Refinery and Asphalt Plant together emit over 290,000 lbs/year of NOx (0.41 tons per day).**
- PM data was not provided for the refinery (only the Asphalt Plant: > 2,600 lbs/yr).

Ultramar Inc. (Valero Refinery)

Application Number	Size (million BTU /hr)	NOx (lbs/year)	PM (lbs/year)	Selective Catalytic Reduction (SCR)
598861	258	63,506	NA	N
598853	159.2	37,309	NA	N
598854	136	26,885	NA	N
598857	95	19,276	NA	N
598860	200	18,321	NA	Y
598864	245	16,919	NA	Y
598856	144	16,760	NA	Y
598858	68	16,590	NA	N
530463	49	16,139	NA	N
598862	57	12,513	NA	N
598859	110	12,409	NA	Y
220593	29.7	8,580	NA	N
220601	26.4	6,076	NA	N
220600	29.7	6,028	NA	N
224454	20	5,756	NA	N
598863	127.8	4,903	NA	Y
447454	30	2,411	NA	Y
527886	39	(missing)	NA	N
Total lbs/yr		290,381	NA	
Total tons/day		0.4	NA	

Valero Wilmington Asphalt Plant

Application Number	Size (million BTU /hr)	NOx (lbs/year)	PM (lbs/year)	Selective Catalytic Reduction (SCR)
467281	19.3	4,319	1,699	N
467283	14.65	3,342	208	N
467284	14.65	3,342	124	N
388921	15.4	35	605	N
Total lbs/yr		11,038	2,636	

Grand total Ultramar / Valero Refinery & Asphalt

Lbs/yr	301,419	NA	
Tons/day	0.4	NA	

Two Air Products facilities and one Eco Services also have large Heaters & Boilers:

- These companies support oil refineries by making hydrogen and other gases used in the refineries.
- **These three facilities' NOx emissions total over 140,000 lbs/yr, and over 56,000 lbs/yr of PM.**

	Application Number	Size (million BTU /hr)	NOx (lbs/year)	PM (lbs/year)	SCR
Air Products and Chemicals, Inc. (Carson)	491306	764	29,172	13,708	Y
Air Products and Chemicals, Inc. (Wilmington)	310075	785	63,215	34,811	Y
Eco Services Operation Corp., Carson, CA	585633	150	46,411	7556.03	N
	585633	50	908	52.43	N
	585626	49	388.20	62.64	N
Total – lbs/yr			140,096	56,190	
Total - Tons/day			0.2		