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June 19, 2020

Mr. Brian Renninger
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RE: NSPS Subpart I Reconstruction Evaluation and NOC Applicability for the Cadman Kenmore Drum Dryer/Burner

Dear Mr. Renninger:

This letter responds to the Puget Sound Clean Air Agency's (PSCAA's) February 13, 2020 email regarding the potential applicability of the Notice of Construction (NOC) permit program and New Source Performance Standards (NSPS) Subpart I regulations to historical changes at the Cadman Materials, Inc. (Cadman), hot mix asphalt plant in Kenmore, Washington. The February email from PSCAA was related to a NOC application submitted by Cadman on June 28, 2019 in response to Notice of Violation (NOV) 3-009870, with additional information provided to PSCAA in December 2019. More background on the related correspondence is provided in the first section of this letter.

In the February 13, 2020 email, the Puget Sound Clean Air Agency (PSCAA) requested that Cadman provide an economic analysis of whether the facility triggered the requirements of NSPS Subpart I (Standards of Performance for Hot Mix Asphalt Plants) under the reconstruction criteria of 40 CFR 60.15. The second section of this letter (titled "NSPS Subpart I Reconstruction") reviews costs of past projects to assess whether NSPS Subpart I was triggered by reconstruction.

Additionally, PSCAA requested that Cadman submit a NOC application for equipment replacements at the drum dryer and burner. In a March 11, 2020 conference call, PSCAA provided clarification about its rationale for this request. In that conversation, PSCAA agreed to consider additional information from Cadman regarding whether NOC permitting requirements applied to the historical changes. This third section of this letter (titled "NOC Applicability to Dryer Changes") provides that information, concluding that NOC permitting is not triggered.

BACKGROUND

PSCAA issued NOV #3-009870 on March 16, 2019, listing the following changes at the Kenmore asphalt plant requiring further review for NOC applicability.

- Dryer shell replacement in 2018,[1,2]

[1] The NOV referred to the change as a "new dryer." In actuality, the change was a maintenance project involving replacement of the shell of the dryer and several internal stages, but not a new dryer.

[2] A note of clarification regarding the dryer shell replacement is that some previous correspondence from Cadman and Trinity included a typo that incorrectly listed the date of the change as April 2008 rather than correct date of April 2018.

- Dryer baghouse alterations in 2008 and 2015,[3]
- Routing the scavenger duct from truck loading process to baghouse, and
- Installation of CEI Enterprises condenser filters on heated asphalt tanks.

Cadman replied to PSCAA with further information regarding each of these changes in a June 9, 2019 letter, and a June 28, 2019 letter. The June 28, 2019 letter included an explanation that the dryer shell replacement did not trigger NOC permitting, and provided a NOC application under WAC 173-400-114 for the dryer baghouse alterations (including the scavenger duct re-routing), the installation of asphalt tank condenser filters in 2011 and replacement of the condenser filters in 2017.

In a July 30, 2019 email to Cadman, PSCAA determined the NOC application to be incomplete and requested additional information about the baghouse and an updated State Environmental Policy Act (SEPA) checklist. Additionally, PSCAA requested information regarding the drum dryer and its burner.

After requesting and reviewing additional historical records from PSCAA, Cadman responded to the incompleteness determination in a December 5, 2019 email from Christy McDonough, Cadman, to Brian Renninger, PSCAA.

In a subsequent February 13, 2020 email, PSCAA stated their determination that a NOC application would be required for the drum dryer and burner for historical equipment replacements. Also, PSCAA requested an analysis of whether the Kenmore plant had triggered NSPS Subpart I via the reconstruction applicability trigger.

Cadman and PSCAA held a March 11, 2020 conference call to discuss PSCAA's rationale for the NOC applicability determination for the dryer and its burner. The outcome of the call was that PSCAA was open to further discussion of NOC applicability, and that Cadman would provide the requested NSPS Subpart I applicability analysis, along with a review of NSPS applicability for the dryer/burner system.

NSPS SUBPART I RECONSTRUCTION

Hot mix asphalt plants are regulated under NSPS Subpart I, which sets emission standards for construction, modification, and reconstruction of an "affected facility" after June 11, 1973. The affected facility is identified in 40 CFR 60.90(a).

> *"The affected facility to which the provisions of this subpart apply is each hot mix asphalt facility. For the purpose of this subpart, a hot mix asphalt facility is comprised only of any combination of the following: dryers; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler, systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems."*

Cadman's Kenmore facility was constructed prior to 1973, and has not triggered NSPS Subpart I by modification. PSCAA has requested that Cadman review whether the Kenmore hot mix asphalt plant triggered NSPS Subpart I by reconstruction.

In 40 CFR 60.15(b), "reconstruction" is defined to mean:

> *"the replacement of components of an existing facility to such an extent that:*

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[3] The NOV referred to the changes as "baghouse replacements". The changes were actually alterations of the existing baghouse and not a full replacement.

> *(1) The fixed capital cost of the new components exceeds 50 percent of the fixed capital cost that would be required to construct a comparable entirely new facility, and*
> *(2) It is technologically and economically feasible to meet the applicable standards set forth in this part."*

Cost Calculation Approach

The first step in assessing reconstruction is to determine the fixed capital cost of the "new components" of the affected source. This determination does not aggregate the capital costs of all replacements that have ever taken place at a facility into a single value. Instead, a separate review is conducted for each planning period in which components of the hot mix asphalt plant were replaced. This "single planning period" methodology is consistent with EPA policy regarding the NSPS reconstruction definition.[4,5]

In determining the fixed capital costs, only equipment regulated by NSPS Subpart I is considered (i.e., equipment that constitutes the hot mix asphalt plant as defined in Subpart I). Additionally, the December 16, 1975, preamble to the rule establishing the reconstruction definition states that "*Costs associated with the purchase and installation of air pollution control equipment (e.g., baghouses, electrostatic precipitators, scrubbers, etc.) are not included in estimating the fixed capital cost of a comparable entirely new facility unless that control equipment is required as part of the process.*"[6] Therefore, the costs of air pollution control equipment and changes to air pollution control equipment are not included in this review.

Finally, it should be noted that the definition focuses on capital costs, and does not include expenses for maintenance items. Many replaced components at the Kenmore facility have been routine maintenance activities such as the replacement of the belts on conveyors, wear liners, filters, and patching of equipment. These types of routine expenses are not included in this analysis.

Historical Equipment Replacements

Detailed information about historical changes made to the Kenmore facility is difficult to obtain, since the facility had undergone multiple ownership changes prior to Cadman's current ownership. Due to the limited information available about older projects, the review provided in this letter covers the most recent 20-year period (from 2000 to 2020). Project details and cost estimates provided in this letter are approximate. The Kenmore facility does not have well-defined "planning periods" in which multiple changes are grouped together into larger projects. However, the replacement projects conducted at the Kenmore facility fall within three general timeframes, each of which could be considered a "single planning period" under EPA guidance.

From 2001 to 2003, the facility installed a new screen on the screen deck (2001), then replaced the dryer burner with a new Hauck burner (2003). The screen replacement cost was $21,700 (corresponding to an estimated cost $35,000 in 2020 dollars). The new burner cost was $141,900 (corresponding to an estimated

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[4] In a September 24, 1981 memo addressing a reconstruction question under the NSPS, EPA states that, "…*aggregating the cost of several independent replacement projects completed over an indefinite period is inconsistent with 60.15*" (ADI Control Number A064, https://cfpub.epa.gov/adi/pdf/adi-nsps-a064.pdf).

[5] In an October 9, 1990 memo addressing a reconstruction question under the NSPS, EPA states that, "*U.S. EPA's policy is to aggregate the costs of periodic physical changes stemming from what may be viewed objectively as a single planning decision, for the purpose of determining whether the replacement constitutes 'reconstruction'.*" (ADI Control Number NR69, https://cfpub.epa.gov/adi/pdf/adi-nsps-a064.pdf).

[6] 40 FR 58418

cost of $215,000 in 2020 dollars). The total cost (in 2020 dollars) of the equipment replacements made during the 2001 to 2003 period was approximately $250,000.

From 2006 to 2009, the facility reconfigured the dryer baghouse system and scavenger duct; however, because these changes were part of the air pollution control device and its ancillary equipment, costs from those changes are not included in the cost analysis. The details of these projects were described in our June 28, 2019 NOC application filed under the provisions of WAC 173-400-114 for substantial alteration of pollution control device.

In 2018, the facility replaced the dryer shell and replaced worn-out flights in the dryer. Costs for the project were approximately $50,000 (corresponding to approximately $52,000 in 2020 dollars).[7,8]

Reconstruction Cost Evaluation

Costs from each of the three planning periods are compared against the cost of an entirely new affected facility. Cadman has requested and received a cost estimate from Astec Industries, Inc. (Astec), an asphalt plant equipment vendor, for a plant of comparable size to the Kenmore facility. According to Astec's quote, the purchased equipment cost of a comparable new asphalt plant totals $3,029,590. Costs associated with the pilot control center, power center, and pulse jet baghouse were excluded from this total. The cost estimate includes the following equipment:

- Drum Mixer and Natural Gas Burner
- Cold Feed System
- Scalping Screens
- Conveyors
- Storage Silo
- Recycle Feed Bins
- Asphalt Unloading Pump, Piping, and Metering
- Hot Oil Heater
- Asphalt Tank
- Truck Scale
- Truck Loadout

In addition to the purchased equipment cost, NSPS guidance states that engineering, installation, and contractor fees should also be included in the cost of the new facility.[9] Cadman has not obtained additional quotes for these fees, but notes that such additional costs would be appropriate to add if available, and would only serve to increase the cost of the comparable new facility.

The costs of the changes from the 2001 to 2003 planning period were 8.3 percent of the capital cost of an entirely new affected facility (i.e., asphalt plant). The costs of the changes in 2018 were 1.7 percent of the capital cost of an entirely new affected facility. In neither case did the cost exceed the 50 percent capital

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[7] Other changes that took place near this timeline were routine maintenance activities such as replacement of belts on the incline and collector conveyors, patching the cold aggregate bin, and replacing wear liners on silos and the pug mill screw, and replacing the large condensing filter.

[8] Note that the dryer shell replacement in 2018 used existing equipment from an inactive Cadman facility rather than the installation of an entirely new dryer shell. The use of existing inactive equipment provided cost savings compared to installing a new equipment.

[9] May 11, 1998 memo titled "Reconstruction Costs" from R. Douglas Neeley, Chief of EPA Air and Radiation Branch, to Jerry Cain, Mississippi DEQ. ADI Control Number 9800085.

cost threshold for reconstruction under NSPS rules. Therefore, NSPS Subpart I is not triggered by reconstruction.

NOC APPLICABILITY TO DRYER CHANGES

It its February 13, 2020 email, PSCAA requested a NOC application for the drum dryer at the Kenmore plant. The primary reason cited in PSCAA's email was that "the major air pollution emitting components of the drum dryer have been replaced." In reaching this determination, PSCAA noted that both the drum dryer shell and the burner have been replaced since 1990. Cadman disagrees with PSCAA's conclusion that a NOC application is required.

Installation (or replacement) of a new emission unit, unless exempted, triggers NOC permitting requirements. The dryer and burner at the Kenmore facility operate together as parts of a single integrated emission unit. Though major parts were replaced at various times, each of those changes only affected a portion of the dryer system. Washington's NOC program borrows heavily from the principles of the NSPS program, including using a definition of modification tied directly to the NSPS definition of modification.[10] While there is no explicit link between Washington's NOC program and the NSPS definition of reconstruction, the NSPS program can provide a helpful analogy for assessing permit applicability to the replacement of portions of an emission unit over time.

As shown in the previous section, the changes made to the dryer system at the Kenmore facility took place in separate events over a long period of time, and were not costly enough to be considered reconstruction under the NSPS program. Purchased equipment costs provided by Astec for a drum mixer with a 100 MMBtu/hr natural gas burner totaled $850,390.[11] As noted above, additional costs (not included in this total) would be expected for freight, engineering, installation, and contractor fees. Even without accounting for such additional costs, none of the changes made to the dryer/burner had costs that neared 50 percent of this figure. There was no extensive replacement event that would have triggered NOC requirements.

Additionally, at the time that the burner replacement was made in 2003, Washington air permitting agencies routinely considered functionally equivalent equipment replacements as projects that did not require permitting.[12] The equipment replacements at the dryer/burner system discussed in this letter did not involve substantive changes to the production capacity or operation of the equipment, and would have been allowable changes under that 1997 policy guidance without requiring an NOC application.

NOC permitting can also be triggered by modification of an existing emission unit. The definition of modification used by PSCAA requires there to be an increase in hourly maximum emissions. Additionally, NOC permitting is limited to the pollutants for which there is an increase. Historical changes to the Kenmore facility dryer shell and internals are not expected to have affected emissions. It is possible for burner changes to affect emissions if the emissions profile of the new burner is different from the previous burner.

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[10] WAC 173-400-030(51) states that "the term modification shall be construed consistent with the definition of modification in Section 7411, Title 42, United States Code, and with rules implementing that section." The referenced section of the United States Code is the section that establishes the NSPS program.

[11] Astec's cost estimate is based on the costs of a double barrel drum mixer. This technology represents current design technology for asphalt plant operations that would be used for any new installation, in which the dryer/burner and mixer are combined into a single machine.

[12] February 7, 1997 policy guidance from Joseph Williams, Washington Department of Ecology Air Program Manager. The document, "*Policy for Addressing Changes to Equipment at Existing Sources*," states that "If a stationary source is replaced with a functionally equivalent stationary source and there is no emission increase and no new pollutants are emitted, then that replacement stationary source does not trigger NSR."

In 2003, the Kenmore facility replaced an older Genco FP103 burner with a Hauck ES-100 burner. Emission data from the older Genco burner is unavailable; however, manufacturers have been steadily improving emission profiles from natural gas burners over the past 30 years. Even without specific emissions data to compare the emissions from the two burners, a burner installed in 2003 would be likely to have the same or lower emissions than the older burner it was replacing. Additionally, the new burner has a heat input capacity of 100 MMBtu/hr, lower than the 103 MMBtu/hr capacity of the older burner. If the emission factors for the two burners are assumed to be equivalent, the lower heat input capacity of the new burner would result in a decrease in emissions. Therefore, even though emission data are not available from the older burner, it is likely that emissions from the new burner are less than those of the burner it replaced, and the dryer was not modified.

For the reasons provided above, we conclude that the NOC permitting process was not triggered and a NOC application is not required for historical changes to the dryer and its burner. If you have any questions or comments about the information presented in this letter, please do not hesitate to call me at 253.867.5600 x1007.

Sincerely,

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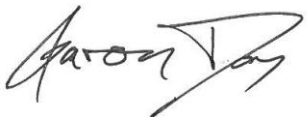

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Cc: Christy McDonough, Cadman
Tim Barton, Cadman