

Tesoro Refining & Marketing Company
474 West 900 North
Salt Lake City, UT 84103

August 15, 2018

Mr. Bryce Bird
Director
Utah Division of Air Quality (UDAQ)
P.O. Box 144820
Salt Lake City, UT 84116
bbird@utah.gov
thomasgunter@utah.gov
breiss@utah.gov

Hand Delivered

RE: Comments on the Amendments to State Implementation Plan (SIP) Subsection IX, Part H and "PM2.5 SIP Evaluation Report: Tesoro Refining & Marketing Company LLC"

Dear Mr. Bird and UDAQ staff:

Tesoro Refining & Marketing Company LLC (Tesoro), respectfully submits the following comments regarding the proposed amendments to the State Implementation plan (SIP) Subsection IX, Part H, Sections 1, 2, 11, and 12; and regarding the Utah Division of Air Quality's (UDAQ) PM2.5 Serious SIP Evaluation Report (DAQ-2018-007379) for Tesoro dated July 1, 2018. As owner and operator of the Salt Lake City Refinery, Tesoro is subject to the emission limitations and other requirements proposed in this rulemaking. In addition to the comments in this letter, Tesoro endorses and incorporates by this reference the comments submitted by the Utah Petroleum Association (UPA) to the same rulemaking action. ¹

Included in UPA's comments is a major stationary source precursor demonstration showing that major stationary sources' emissions of VOC, NOx, SOx, and NH3 are "insignificant" contributors to PM2.5 concentrations in the Salt Lake City Nonattainment Area (SLC NAA). Given the conclusive results of the precursor demonstration – coupled with the legal requirement that UDAQ and the Utah Air Quality Board must determine that the controls imposed are necessary – UDAQ should forgo all proposed conditions in Part H that impose new control requirements on Tesoro's VOC, NOx, SOx, and NH3 emissions. Furthermore, and consistent with the PM2.5 Implementation Rule, UDAQ Best Available Control Technology (BACT) review should be confined to a review of potential controls on direct PM2.5 emissions.²

To the extent that UDAQ declines to accept UPA's precursor demonstration, these comments address two general areas of comments:

- First, the proposed amended SIP, Part H, where we provide several detailed comments to clarify or correct the language.
- Second, the PM2.5 Serious SIP Evaluation Report for the Tesoro Refinery (DAQ-2018-007379) (SIP Evaluation Report), alludes to new control requirements for the Tesoro Refinery which are *not* identified in the proposed amended SIP, Part H. The statements in the SIP Evaluation Report create significant ambiguity as to UDAQ's expectations as a result of its BACT analysis. It is unclear to Tesoro what the intent of these statements is; that is, has UDAQ determined that certain

¹ Tesoro is a member company of UPA.

² See 40 CFR § 51.1010(a)(2)(iii) ("The state is not required to identify and evaluate potential control measures to reduce emissions of a particular PM2.5 precursor from any existing major stationary sources if the state has submitted a major stationary source precursor demonstration approved by the EPA.").

controls or measures identified in the SIP Evaluation Report are to be installed as BACT and, if so, when would such controls be required to be installed and operational? This is ultimately fatal to the current rulemaking action as UDAQ's lack of clarity equates to a lack of notice to Tesoro to evaluate and comment on UDAQ's BACT determinations. To the extent that UDAQ did intend these comments in the SIP Evaluation Report to be legally-enforceable determinations, UDAQ must revise the proposed rule (Part H) and present a revised proposed rule for additional public comment.

I. COMMENTS ON: H.1 – GENERAL REQUIREMENTS: CONTROL MEASURES FOR AREA AND POINT SOURCES, EMISSION LIMITS AND OPERATING PRACTICES, PM10 REQUIREMENTS

Tesoro's comments below pertain to specific provision in the proposed revisions to Part H.1 of the SIP.

H.1.d.ii.

Tesoro suggests the following edits to H.1.d.ii. to clarify that filterable PM₁₀ specifically is included:

“All emission limitations of PM₁₀ listed in Subsections IX.H.2 and IX.H.3 include both filterable PM₁₀ and condensable PM, unless otherwise specified in the source specific conditions listed in IX.H.2 and IX.H.3.”

H.1.e.i.B.

Tesoro suggests the following edits to H.1.e.i.B. to include Method 19 consistent with the PM_{2.5} requirements. Additionally, all EPA-approved testing methods should be considered acceptable to the Director.

“Volumetric Flow Rate: 40 CFR 60, Appendix A, Method 2, EPA Test Method No. 19 "SO₂ Removal & PM, SO₂, NO_x Rates from Electric Utility Steam Generators", or other EPA-approved testing methods **acceptable to the Director.”**

H.1.e.i.C.

Tesoro suggests adding the following prior to H.1.e.i.C. to allow testing using Method 5, which is necessary in cases where the exhaust gas is saturated with water (i.e., at the outlet of wet gas scrubbers):

“PM: 40 CFR 60, Appendix A, Method 5, or other EPA-approved testing methods.”

H.1.g.i.B.III.

Tesoro suggests the following edits to H.1.g.i.B.III. since CPMS should not be used to determine source-wide emissions, and the CPMS are specifically required on the control device.

“No later than January 1, 2019, each owner or operator of an FCCU shall install, operate and maintain a continuous parameter monitor system (CPMS) to measure and record control device operating parameters ~~from the FCCU for determination of source-wide particulate emissions~~ as per the requirements of 40 CFR 60.105a(b)(1).”

H.1.g.ii.A.

Tesoro suggests the following edits to H.1.g.i.B.III. since this section is for PM₁₀ and not PM_{2.5}:

“All petroleum refineries in or affecting any **PM_{2.5} PM₁₀** nonattainment or maintenance area shall reduce the H₂S content of the refinery plant gas to 60 ppm or less as described in 40 CFR 60.102a...”

H.1.g.v.A.

Tesoro suggests the following edits to H.1.g.v.A. since this section is for PM₁₀ and not PM_{2.5}:

“All hydrocarbon flares at petroleum refineries located in or affecting a designated **PM_{2.5} PM₁₀** non-attainment area within the State shall be subject to the flaring requirements of NSPS Subpart Ja (40 CFR 60.100a–109a), if not already subject under the flare applicability provisions of Ja.”

II. COMMENTS ON: H.2.K SOURCE SPECIFIC EMISSION LIMITATIONS IN SALT LAKE COUNTY PM₁₀ NONATTAINMENT/MAINTENANCE AREA FOR TESORO REFINING & MARKETING COMPANY

H.2.k.i.A.

Tesoro suggests the following edits to H.2.k.i.A. based on Footnote a of AP-42 Tables 1.4-1 and 1.4-2 which describe that lb/MMscf factors are based on an assumed heat content of 1,020 Btu/scf and must be adjusted if the gas fired has a different heat content. By using the converted emission factors in lb/MMBtu, the step of adjusting the lb/MMBtu emission factors is bypassed.

“Setting of emission factors:

The emission factors... are as follows:

Natural gas:

Filterable PM₁₀: **1.9 lb/MMscf** 0.0019 lb/MMBtu

Condensable PM₁₀: **5.7 lb/MMscf** 0.0056 lb/MMBtu

Plant gas:

Filterable PM₁₀: **1.9 lb/MMscf** 0.0019 lb/MMBtu

Condensable PM₁₀: **5.7 lb/MMscf** 0.0056 lb/MMBtu

H.2.k.i.B.

Tesoro suggests the following edits to H.2.k.i.B. to allow for the use of stack testing results at other sources:

“The default emission factors...

Initial PM₁₀ stack testing on the FCC wet gas scrubber stack shall be conducted no later than January 1, 2019 and at least once every three (3) years thereafter. Stack testing shall be performed as outlined in IX.H.1.e.

Results from any stack testing performed at other PM₁₀ sources in accordance with IX.H.1.e. shall be used where available.”

H.2.k.i.C.

Tesoro suggests the following edits to H.2.k.i.C. in accordance with the proposed changes above:

“Compliance with the Source-wide PM₁₀ Cap shall be determined for each day as follows:

Total 24-hour PM₁₀ emissions... Emission Factor ~~(lb/MMscf)~~ (lb/MMBtu) * Gas Consumption ~~(MMscf/24 hrs)~~ (MMBtu/24 hrs) / (2,000 lb/ton) Results...”

An alternate approach would be to revise this section to be consistent with compliance requirements for NOx at H.2.k.ii.C, replacing the existing language with the following language:

“The emissions for each emitting unit shall be calculated by multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each fuel combusted at each affected unit by the associated emission factor, and summing the results.”

H.2.k.ii.B.

Tesoro suggests the following edits to H.2.k.ii.B. to clarify the intent of the requirement:

“The default emission factors listed in IX.H.2.k.ii.A above apply until such time as stack testing is conducted as outlined below:

... At that time a new flow-weighted average emission factor in terms of: lbs/MMBtu shall be derived for ~~each combustion type~~ the tested natural gas/refinery fuel gas combustion equipment listed in IX.H.2.k.ii.A above.”

H.2.k.iii.A.

Tesoro suggests the following edits to H.2.k.i.A. based on Footnote a of AP-42 Tables 1.4-1 and 1.4-2 which describe that lb/MMscf factors are based on an assumed heat content of 1,020 Btu/scf and must be adjusted if the gas fired has a different heat content. By using the converted emission factors in lb/MMBtu, the step of adjusting the lb/MMBtu emission factors is bypassed.

“Setting of emission factors:

The emission factors... are as follows:

Natural gas: EF = ~~0.60 lb/MMscf~~ 0.0006 lb/MMBtu

Propane: EF = ~~0.60 lb/MMscf~~ 0.0006 lb/MMBtu”

H.2.k.iii.B.

Tesoro suggests the following edits to H.2.k.iii.B. to include other SO₂ sources:

“Compliance with the source-wide SO₂ Cap shall be determined for each day as follows: Total daily SO₂ emissions shall be calculated by adding the daily SO₂ emissions for natural gas, plant fuel gas, and propane combustion to those from the wet gas scrubber stack and SRU.”

H.2.k.iv.B.

Tesoro suggests the following edits to H.2.k.iv.B. to remove text in the requirement redundant with language in the following paragraph H.2.k.iv.C:

“0.69 tpd for the remainder of the rolling 12-month period.

~~Compliance with the daily limitations shall be determined as follows:”~~

III. COMMENTS ON: H.11. GENERAL REQUIREMENTS: CONTROL MEASURES FOR AREA AND POINT SOURCES, EMISSION LIMITS AND OPERATING PRACTICES, PM_{2.5}

H.11.d.ii.

Tesoro suggests the following edits to H.11.d.ii. since there are no PM₁₀ requirements in IX.H.12 or IX.H.13 and to add clarity to the type of filterable particulates:

“All emission limitations of particulate matter (~~either PM₁₀ and/or PM_{2.5}~~) listed in Subsections IX.H.12 and IX.H.13 include both filterable PM_{2.5} and condensable PM, unless otherwise specified in the source specific conditions listed in IX.H.12 and IX.H.13.”

H.11.e.i.D (erroneously listed as H.11.e.i.B in the draft)

Tesoro suggests deleting section H.11.e.i.D (listed as H.11.e.i.B) since this is the PM_{2.5} section and PM₁₀ stack testing methods are not applicable.

~~“PM₁₀: 40 CFR 51, Appendix M, Methods 201a and 202, or other EPA approved testing methods acceptable to the Director. If a method other than 201a is used, the portion of the front half of the catch considered PM₁₀ shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Director.”~~

H.11.e.i.E.

Tesoro suggests the following edits to H.11.e.i.E. since the additional context regarding back half condensables is not necessary when describing the allowed test methods. Additionally, all EPA-approved testing methods should be considered acceptable to the Director.

~~“PM_{2.5}: 40 CFR 51, Appendix M, 201a and 202, or other EPA approved testing methods acceptable to the Director. The back half condensables shall be used for compliance demonstration as well as for inventory purposes. If a method other than 201a is used, the portion of the front half of the catch considered PM_{2.5} shall be based on information in Appendix B of the fifth edition of the EPA document, AP-42, or other data acceptable to the Director.”~~

H.11.g.i.B.III.

Tesoro suggests the following edits to H.11.g.i.B.III. since CPMS should not be used to determine source-wide emissions, and the CPMS are specifically required on the control device.

“No later than January 1, 2019, each owner or operator of an FCCU shall install, operate and maintain a continuous parameter monitor system (CPMS) to measure and record **control device** operating parameters ~~for determination of source-wide PM_{2.5} emissions~~ as per the requirements of 40 CFR 60.105a(b)(1).”

H.11.g.ii.A.

Tesoro suggests the following edits to H.11.g.ii.A. since this section is for PM_{2.5} and not PM₁₀:

“All petroleum refineries in or affecting any PM_{2.5} nonattainment area ~~or any PM₁₀ nonattainment or maintenance area~~ shall reduce the H₂S content of the refinery plant gas...”

H.11.g.iii.A.

Tesoro suggests the following edits to H.11.g.iii.A. since the applicability date has already passed:

“Each owner or operator shall comply with the requirements of 40 CFR 63.654 for heat exchange systems in VOC service ~~as soon as practicable but no later than January 1, 2015...~~”

IV. COMMENTS ON: H.12. SOURCE-SPECIFIC EMISSION LIMITATIONS IN SALT LAKE CITY – UT PM_{2.5} NONATTAINMENT AREA FOR TESORO REFINING AND MARKETING COMPANY: SALT LAKE CITY REFINERY

H.12.o.i.A.

Tesoro suggests the following edits to H.12.o.i.A. based on Footnote a of AP-42 Tables 1.4-1 and 1.4-2 which describe that lb/MMscf factors are based on an assumed heat content of 1,020 Btu/scf and must be adjusted if the gas fired has a different heat content. By using the converted emission factors in lb/MMBtu, the step of adjusting the lb/MMBtu emission factors is bypassed.

“Setting of emission factors:

The emission factors... are as follows:

Natural gas:

Filterable PM_{2.5}: ~~1.9 lb/MMscf~~ 0.0019 lb/MMBtu

Condensable PM_{2.5}: ~~5.7 lb/MMscf~~ 0.0056 lb/MMBtu

Plant gas:

Filterable PM_{2.5}: ~~1.9 lb/MMscf~~ 0.0019 lb/MMBtu

Condensable PM_{2.5}: ~~5.7 lb/MMscf~~ 0.0056 lb/MMBtu

H.12.o.i.C.

Tesoro suggests the following edits to H.12.o.i.C. in accordance with the proposed changes above:

“Compliance with the Source-wide PM_{2.5} Cap shall be determined for each day as follows:

Total 24-hour PM_{2.5} emissions... Emission Factor ~~(lb/MMscf)~~ (lb/MMBtu) * Gas Consumption ~~(MMscf/24 hrs)~~ (MMBtu/24 hrs) / (2,000 lb/ton) Results...”

An alternate approach would be to revise this section to be consistent with compliance requirements for NOx at H.12.o.ii.C, replacing the existing language with the following language:

“The emissions for each emitting unit shall be calculated by multiplying the hours of operation of a unit, feed rate to a unit, or quantity of each fuel combusted at each affected unit by the associated emission factor, and summing the results.”

H.12.o.ii.B.

Tesoro suggests the following edits to H.12.o.ii.B. to clarify the intent of the requirement and to correct the paragraph references:

“The default emission factors listed in IX.H.12.op.ii.A above apply until such time as stack testing is conducted as outlined below:

... At that time a new flow-weighted average emission factor in terms of: lbs/MMBtu shall be derived for ~~each combustion type~~ the tested natural gas/refinery fuel gas combustion equipment listed in IX.H.12.op.ii.A above.”

H.12.o.iii.A.

Tesoro suggests the following edits to H.12.o.iii.A. based on Footnote a of AP-42 Tables 1.4-1 and 1.4-2 which describe that lb/MMscf factors are based on an assumed heat content of 1,020 Btu/scf and must be adjusted if the gas fired has a different heat content. By using the converted emission factors in lb/MMBtu, the step of adjusting the lb/MMBtu emission factors is bypassed.

“Setting of emission factors:

The emission factors... are as follows:

Natural gas: EF = ~~0.60 lb/MMscf~~ 0.0006 lb/MMBtu

Propane: EF = ~~0.60 lb/MMscf~~ 0.0006 lb/MMBtu”

H.12.o.iii.B.

Tesoro suggests the following edits to H.12.o.iii.B. to include other SO₂ sources:

“Compliance with the source-wide SO₂ Cap shall be determined for each day as follows: Total daily SO₂ emissions shall be calculated by adding the daily SO₂ emissions for natural gas, plant fuel gas, and propane combustion to those from the wet gas scrubber stack and SRU.”

H.12.o.iv.B.

Tesoro suggests the following edits to H.12.o.iv.B. to remove the redundant text in the requirement:

“0.69 tpd for the remainder of the rolling 12-month period.

~~Compliance with the daily limitations shall be determined as follows:”~~

V. **COMMENTS ON: UDAQ'S PM_{2.5} SERIOUS SIP EVALUATION REPORT FOR THE TESORO REFINERY (DAQ-2018-007379)**

The remainder of these comments focus on UDAQ's PM_{2.5} Serious SIP Evaluation Report for the Tesoro Refinery (DAQ-2018-007379). Tesoro submitted an initial BACT report on May 5, 2017. Tesoro also provided additional BACT information as well as control cost effectiveness data in a report submitted on December 8, 2017. UDAQ's evaluation does not appear to acknowledge or rely upon the December 8, 2017, submittal in any way. This submittal contained additional information regarding economic feasibility as requested by UDAQ. For this reason alone, UDAQ's BACT determination is arbitrary as UDAQ has not considered and addressed all the information that Tesoro provided to UDAQ.

As noted above, Tesoro endorses and incorporates the comments on this rulemaking submitted by UPA. In particular, UPA submitted comments and technical analyses demonstrating that major stationary sources of VOC, NO_x, SO_x, and ammonia emissions each meet the threshold set by EPA for a major stationary source precursor demonstration. As such, EPA's PM_{2.5} implementation rule provides that the State will not be required to control emissions of the relevant precursor from existing major stationary sources.³ Furthermore, as explained in the UPA comments, UDAQ is obligated under the Utah Air Conservation Act to consider these precursor demonstrations and adopt only those controls shown to be necessary for attainment. Accordingly, UDAQ should not require the additional emissions controls for the Tesoro Wastewater System and controls for the K-1 compressors suggested in the SIP Evaluation Report.

Furthermore, while UDAQ's SIP Evaluation Report for the Tesoro Refinery alludes to potential new controls for Tesoro's Wastewater System and K-1 compressors, the proposed changes to Part H of the SIP do *not* reflect these controls. As a consequence, it is unclear what constitutes UDAQ's actual determination as opposed to statements expressing the agency's deliberative process for determining BACT. Given the ambiguity created by the SIP Evaluation Report, Tesoro does not understand UDAQ's determination and cannot fully comment on UDAQ's expectations with respect to implementation or schedule. As a result, UDAQ must either acknowledge that the statements regarding the Wastewater System and K-1 compressors have no legal effect or UDAQ must clarify its BACT determination for these units and re-propose the determination in a new rulemaking action, thereby providing Tesoro with adequate notice of UDAQ's proposed action.

9.1 VOC – BACT for Wastewater System

“Tesoro currently operates the API separator with a fixed cover to limit VOC emissions.”

This statement incorrectly characterizes the system and its controls. Tesoro currently operates the API Oil Water Separators (OWS) with *floating* covers and single seals. A project is currently planned to replace the single seal floating covers with double wiper seals floating covers on the OWS. Based on emission factors for oil/water separators from AP-42 Table 5.1-3, the use of floating roof covers provides at least 96% control compared to fixed roof covers without the use of add-on controls. Use of a double seal floating cover will provide improved performance over a single seal floating cover.

UDAQ's misunderstanding undermines the agency's determination of what constitutes BACT as well as Additional Feasible Measures for the Wastewater System.

³ 40 CFR §§ 51.1006(a)(2)(iii); 51.1010(a)(2)(iii).

9.1.1 VOC – Available Control Technology

“Only two control options were identified to reduce VOC emissions from the wastewater system. The collected vapors from the API separator can be routed to a control device for capture or destruction. Carbon canisters reduce emissions by capturing the VOCs using activated carbon filtration. Oxidation, using either thermal treatment or catalytic oxidation systems, is also a viable option for elimination of VOC emissions.”

9.1.5 VOC – Selection of BACT

“UDAQ recommends that Tesoro continue to operate the existing wastewater treatment system with fixed API cover, plus install and operate a set of carbon canisters for VOC control. The carbon canisters shall achieve 90% or better removal.”

As stated previously, UDAQ analysis suffers from a fundamental misunderstanding of Tesoro’s existing wastewater treatment system as the system does not rely on fixed API covers. Tesoro’s API OWS currently utilize floating covers and single seals and Tesoro plans to replace those covers with double wiper seals floating covers.

While additional controls for the OWS are technically feasible, add-on controls, such as a vapor combustion unit (regenerative thermal oxidizer [RTO]) or carbon adsorption, would not be economically feasible. The use of any add-on controls in conjunction with a floating cover OWS would require additional modifications to the OWS, including installation of a fixed cover, or similar enclosure, from which any VOC emissions from the floating covers could be captured and routed to a secondary control device. The costs of these modifications would be in addition to the estimated control cost in Section 9.1.4 of UDAQ’s Evaluation Report of \$10-15,000/ton of VOC removed for carbon adsorption and \$75,000/ton of VOC removed for an RTO. Based on these additional costs, with only an incremental decrease in emissions from add-on controls, Tesoro believes the use of add-on controls to be economically infeasible. Tesoro also indicated that use of add-on controls will be economically infeasible in the December 2017 submittal at a cost of more than \$200,000 per ton.

Furthermore, as explained above, the major stationary source precursor demonstrations submitted by UPA demonstrate that it is unnecessary for UDAQ to further control these VOC emissions and, as a consequence, UDAQ should not require Tesoro to install these controls as BACT.

12.0 BACT for Loading/Offloading

Throughout this section, UDAQ references offloading/unloading activities in the same context as loading activities. There are no offloading/unloading activities at the TLR or BCLR. The language should be revised to clarify that there are no requirements related to offloading/unloading activities at the TLR or BCLR.

16.2 Additional Feasible Measures at Tesoro

There is not a legal basis for UDAQ to make a determination of Additional Feasible Measures (AFM) in the current rulemaking and UDAQ should strike the entire discussion of AFM from the SIP Evaluation Report.

Under the PM2.5 Implementation Rule, UDAQ is precluded from implementing AFM for the Tesoro refinery as proposed. In the SIP Evaluation Report, UDAQ states, “AFM is any control measure that otherwise meets the definition of [BACM] but can only be implemented in whole or in part beginning 4

years after the date of reclassification of an area as Serious and no later than the statutory attainment date for the area. The [SLC NAA] was reclassified as Serious on June 9, 2017. Therefore, any viable control measures that could only be implemented in whole in or in part beginning 6/9/2021 (4 years after the date of reclassification) are classified as AFM.”

In this statement, UDAQ stated the law correctly but applied it erroneously; UDAQ applied the first half of the rule (i.e., beginning 4 years after reclassification) but failed to recognize that the rule prohibits the implementation of AFM *after* the applicable attainment date. The PM2.5 Implementation Rule provides,

Any control measure that can be implemented in whole or in part *between* the end of the fourth year following the date of reclassification of the area to Serious *and* the applicable attainment date for the areas shall be considered an additional feasible measure.⁴

Under this language, AFM may be imposed for measures that can be implemented four years after reclassification but before the attainment date expires; AFM’s are imposed during the gap between these two dates. In the preamble to the PM2.5 Implementation Rule, EPA recognized that in many cases, there would be no gap between the expiration of the 4-year period and the attainment date, meaning there would be no opportunity to implement AFM. “The EPA recognizes that with regard to Serious areas, only a nonattainment area that is reclassified under the agency’s discretionary authority might have sufficient time between the date for implementing BACM and BACT and the statutory Serious areas attainment date to implement additional measures beyond BACM and BACT.”⁵

The SLC NAA is not one of those areas that was reclassified under EPA’s discretionary authority.⁶ Furthermore, because of the date that the area was redesignated to Serious, AFM are simply not available. As UDAQ stated, the SLC NAA was redesignated to Serious on June 9, 2017.⁷ The SLC NAA’s attainment deadline is December 31, 2019.⁸ As such, there is simply no opportunity for UDAQ to evaluate and impose AFM on Tesoro.

Furthermore, EPA explains that AFM are based on necessity. “In the final rule, additional feasible measures would necessarily be implemented by sources in the nonattainment areas, and the state is required to implement them if they are needed in addition to BACM and BACT to bring the areas into expeditious attainment.”⁹ As explained in detail and supported by a technical modeling demonstration in the UPA comments to this rulemaking action, there is no need to impose further control requirements as BACT for any major stationary sources located in the SLC NAA. It is only logical that if it is unnecessary to implement BACT for PM2.5 precursors in the SLC NAA, it is also unnecessary to implement AFM.¹⁰

⁴ 40 CFR § 51.1010(a)(4)(ii) (emphasis added); *see also Id.* § 51.1000 (defining AFM).

⁵ 81 Fed. Reg. 58010, 58083/2 (August 24 2016).

⁶ *See* 82 Fed. Reg. 21711, 21712/3 (May 10, 2017) (reclassifying the SLC NAA to serious under CAA section 188(b)(2); the SLC NAA was not reclassified under EPA’s discretionary authority – i.e., CAA § 188(b)(1)).

⁷ *Id.* at 21716; *see also* 40 CFR § 81.345.

⁸ 82 Fed. Reg. at 21712/3.

⁹ 81 Fed. Reg. at 58083/2.

¹⁰ *See* Utah Code Ann. § 19-2-109(2)(a) (limiting the Utah Air Quality Board’s authority to establish control requirements by rule where the Board determines such controls are “necessary to prevent, abate, or control air pollution . . . taking into account varying local conditions”).

16.2 Additional Feasible Measures (Continued). *“The K1 Compressor Engines – UDAQ did not receive enough information regarding these engines or planned refinery outages to determine if the engines could be replaced with electric motors, upgraded with more stringent controls, or left unaltered. UDAQ believes that some upgrade to the engines is likely and recommends that these be considered for AFM should such be required.”*

Tesoro has also conducted economic feasibility calculations for the replacements at the K1 Compressor Engines with electric motors. Please see the table below for a summary of the cost effectiveness for the replacement. More detailed cost calculations are included as an attachment to this letter. The replacement of the K1 Compressor Engines is not economically feasible for any pollutant.

Pollutant	Emissions (tpy)	Control Efficiency (%)	Controlled Emissions (tpy)	Emission Reduction (tpy)	Control Costs (\$/ton)	Economically Feasible? (Yes or No)
PM _{2.5}	0.16	100.0%	0.00	0.2	\$4,411,000	No
NO _x	7.75	100.0%	0.00	7.7	\$91,000	No
SO ₂	0.00	100.0%	0.00	0.0	\$145,594,000	No
VOC	0.24	100.0%	0.00	0.2	\$2,892,000	No
NH ₃	1.56	100.0%	0.00	1.6	\$451,000	No

Additionally, even if replacement were economically feasible, Tesoro has reviewed the facility’s maintenance turnaround schedule and has determined that only one engine replacement could be accomplished by 2022.¹¹ In addition to Tesoro’s schedule, third-party electrical infrastructure upgrades within the refinery will be required prior to upgrading any of the engines with electric motors. The schedule for these infrastructure upgrades is currently unknown, and it is likely that they would further delay installation.

16.2 Additional Feasible Measures at Tesoro (Continued). *“UDAQ recommended in this review that Tesoro install carbon canisters for control of VOC emissions at the wastewater treatment plant. This is a contradiction of Tesoro’s claims that such upgrades could not be accomplished by the regulatory attainment date. Such claims may be valid, but UDAQ did not receive enough information to make this determination. UDAQ made its recommendation based on the information provided by another refinery with a similar wastewater treatment plant who is installing such canisters for VOC control. Should Tesoro’s claims be validated in the short term, this may be an area for AFM consideration.”*

Tesoro has determined that installation of carbon adsorption (carbon canisters) is economically infeasible. Even if the installation of controls was economically feasible, installation by the attainment date (12/31/19) is not possible. Tesoro has not begun detailed engineering or construction of the equipment because we disagree that the controls are economically feasible, and there are have been no requirements to install the control system.

UDAQ stated that it made its recommendation based on the information provided by another refinery with a similar wastewater treatment plant who is installing such canisters for VOC control. Tesoro understands

¹¹ See 40 CFR § 51.1010(a)(3) (requiring BACT to be implemented “in whole or in part by the end of the tenth calendar year following the effective date of designation of the area”). For the SLC NAA, this date falls on December 31, 2019.

this other refinery to be Big West Oil. However, Tesoro disagrees that this is a similar wastewater treatment plant because Big West Oil currently operates a fixed roof API OWS. Fixed roof OWS have higher emissions and can more easily be retrofitted with carbon controls on both a technical and economic basis. Therefore, this assertion is inappropriate when determining control requirements for Tesoro.

16.3 Most Stringent Measures at Tesoro

In a similar vein to Tesoro's comment on AFM, there is no legal basis for evaluating and implementing Most Stringent Measures (MSM) in the current rulemaking. Tesoro assumes that the inclusion of a discussion of MSM in the SIP Evaluation Report was an oversight by UDAQ as the agency initially anticipated that it might need to implement MSM but has since determined that such measures are not necessary. As such, Tesoro requests that UDAQ strike the entire section discussing MSM from the SIP Evaluation Report.

Under the CAA and the PM_{2.5} Implementation Rule, MSM is required for nonattainment areas that seek an extension of an attainment date applicable to a Serious nonattainment area.¹² MSM is simply not applicable where a state is not seeking an extension of the attainment date. Tesoro understands that UDAQ does not intend to seek an extension of the December 31, 2019 attainment date for the SLC NAA. As such, there is no legal foundation for the evaluation of MSM in the current rulemaking as the rulemaking is exclusively intended to implement BACT.¹³

16.3.3 Step 3 – Demonstration of Feasibility

There are a limited number of conclusions reached in this section, making it unclear what UDAQ has determined as MSM. For example, the feasibility for controls on the FCCU and heaters/boilers listed in the table refer to the text below the table, but the text does not declare MSM for these units. Additionally, as described earlier in these comments, Tesoro disagrees that carbon canisters are feasible for the wastewater treatment system.

As stated previously, by proceeding in this fashion UDAQ has not provided Tesoro with adequate notice of its determination. UDAQ has not provided sufficient detail and clarity on its MSM determination for Tesoro to adequately comment on.

Thank you for the opportunity to provide comments. Tesoro will continue to support UDAQ in their efforts to attain for the PM_{2.5} standards. Should you have any questions regarding these comments, please do not hesitate to contact me.

¹² CAA § 188(e); 40 CFR § 51.1010(b).

¹³ Memorandum from Bill Reiss, through Bryce Bird, to the Air Quality Board, regarding, "Propose for Public Comment: Amend SIP Subsection IX. Part H: Emission Limitations and Operating Practices ("A Serious area nonattainment plan includes provisions for the implementation of best available control measures, including control technologies (BACM/BACT) and includes enforceable emission limitations as well as schedules and timetables for compliance. The emission limits and operating practices expressed in Part H. subparts 11 and 12 **have been developed to meet this requirement** with respect to the large stationary 'point' sources within the PM_{2.5} nonattainment area." (emphasis added)).

Mr. Bird
August 15, 2018
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Sincerely,

A handwritten signature in cursive script that reads "Amber Larsen".

Amber Larsen
EH&S Manager, Tesoro Salt Lake City Refinery

Enclosure

Tesoro - SLC PM2.5 BACT Analysis
K1 Compressors Emission Control Cost Calculation Table

Control Equipment Costs	Category	Value	Basis
Annualized Capital Costs			
Total Capital Investment (TCI)		\$1,800,000	Vendor estimate for replacement with electric motor
Site Specific Contingency		\$900,000	Based on actual site project costs compared to project vendor estimates
Capital Recovery Factor (10%, 10 year life)		0.163	
Annualized Capital Cost		\$439,413	
Operating Costs			
Utilities (electricity, steam)		\$192,000	Vendor Estimate
Administration (2% total capital costs)		\$36,000	EPA Air Pollution Control Cost Manual (Sec 2.5.5.8)
Property tax (1% total capital costs)		\$18,000	EPA Air Pollution Control Cost Manual (Sec 2.5.5.8)
Insurance (1% total capital costs)		\$18,000	EPA Air Pollution Control Cost Manual (Sec 2.5.5.8)
Total Operating Costs		\$264,000	
Total Annual Cost		\$703,413	

Emission Control Cost Calculation for K-1A Compressor Engine

Pollutant	Emissions (tpy)	Control Efficiency (%)	Controlled Emissions (tpy)	Emission Reduction (tpy)	Control Costs (\$/ton)	Basis
PM2.5	0.16	100.0%	0.00	0.2	\$4,410,569	Emissions are based on the actual annual emission number reported on the 2014 emissions inventory.
Nitrous Oxides (NOx)	7.75	100.0%	0.00	7.7	\$90,775	
Sulfur Dioxide (SO ₂)	0.00	100.0%	0.00	0.0	\$145,593,779	
Volatile Organic Compounds (VOC)	0.24	100.0%	0.00	0.2	\$2,892,201	
Ammonia (NH ₃)	1.56	100.0%	0.00	1.6	\$450,732	