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March 13, 2018

VIA HAND DELIVERY

Sergio Gonzalez
City Manager, City of Hermosa Beach
1315 Valley Drive
Hermosa Beach, CA 90254

Re: *Torrance Refining Company LLC's Comments on the City of Hermosa Beach's Draft Letter "PR 1410 — SUPPORT MHF Replacement within 4 Years NOT 3 Tiers of Mitigation" and Supplemental Information About Modified Hydrofluoric Acid*

Dear Mr. Gonzalez,

The Torrance Refining Company LLC's ("TORC") has reviewed the draft letter entitled "*RE: PR 1410 — SUPPORT MHF Replacement within 4 Years NOT 3 Tiers of Mitigation*" ("Draft Letter"). We understand the City Council also plans to consider an accompanying Resolution at tonight's City of Hermosa Beach's ("City") Council Meeting, with both items listed as "Agenda No. 6a."

Both of these items are associated with Proposed Rule 1410 - Hydrogen Fluoride Storage and Use at Petroleum Refineries ("PR 1410"), rulemaking currently being undertaken by the South Coast Air Quality Management District ("AQMD") to potentially regulate the use Modified Hydrofluoric Acid ("MHF") at the two refineries in Southern California – Torrance and Valero's Wilmington Refinery.

If these tandem agenda items are approved by a vote of the City Council, we understand the Draft Letter will be sent to the AQMD, requesting that MHF be replaced at the Torrance and Wilmington refineries with another alkylation technology as early as four years from rule adoption.

Unfortunately, the Draft Letter that will be presented for the City Council's consideration, as drafted, is not based on facts, evidence, science, and/or technology, but full of misstatements, misrepresentations, misinformation, and fear.

The misstatements in the Draft Letter reveal the City's lack of understanding and knowledge of the current status of alkylation technologies, which appear to be taken from the mis- and disinformation promulgated by local activist groups that have no understanding of or experience with alkylation technologies. If they did, then they would know and understand that MHF is a technology acknowledged by the refining industry to be the latest, most advanced, commercially proven, and safe alkylation catalyst available in the world. In fact, Torrance Refinery's Alkylation Unit has a 51 year history of safety with no off-site releases of MHF/Hydrofluoric Acid ("HF").

Despite this, the City's Draft Letter asks for MHF to be replaced in four years with a safe alternative, which in essence advocates for Sulfuric Acid alkylation, as it is the only other currently commercially viable and available alkylation technology to HF/MHF. However, a Los Angeles Superior Court judge has already ruled for the Torrance Refinery "... that the modified HF catalyst (including mitigation) as safe or safer than a sulfuric acid alkylation plant producing a comparable amount of alkylate." In fact, a Sulfuric Acid Alkylation unit of the same

size, if it could be permitted, would increase criteria pollutant emissions and expose the community to additional safety risks.

With regards to alternatives, no emerging alkylation technology has reached the mature state of technological, economic, or commercial viability achieved by MHF and Sulfuric Acid alkylation. Until a newer technology is proven to be inherently safer than MHF or Sulfuric Acid alkylation, as well as feasible, cost-effective, and commercially viable on a similarly-sized commercial unit, and consistent with the California's environmental goals, the **only viable option for the Torrance Refinery at this time is MHF**, the newest, most advanced alkylation catalyst technology available in the world today, which we have been required to use under the terms of the Refinery's Consent Decree with the City of Torrance for more than 20-years now.

We are continuously researching opportunities to further improve the safety and reliability of Refinery operations and are in discussion with the AQMD and other agencies about additional enhancements we can make to the Torrance Refinery's MHF Alkylation Unit to further enhance its already redundant safety systems. (See Attachment A, pp. 4 and 5 for a list of these safety systems).

Accordingly, for all the reasons specifically detailed in **Attachment A**, which including TORC's previously submitted February 27, 2018 letter and its supporting documents, we respectfully request that the City not take any action at this time and allow the AQMD rulemaking process to be completed without undue influence. However, if the City Council feels it must take action, we urge it to take a position similar to the City of Torrance, which is supporting the AQMD's PR 1410 rulemaking process.

The Management of Torrance Refinery, on behalf of our employees, contractors, and local vendors, urges the City to consider all the facts and evidence before taking action on the Agenda No. 6.a Resolution and the Draft Letter.

TORC is confident that the many layers of protection, safety systems and mitigation measures built into our MHF Alkylation Unit allow the Refinery to operate, safely, reliably, and in an environmentally responsible manner, which is reflected in our 50+ year record of never having an offsite HF or MHF release from the unit.

If you have any questions concerning this letter or TORC's February 27, 2018 and its attachments, or would like to visit our Refinery and tour our MHF Alkylation Unit, please contact Betsy Brien, External Relations Manager, at (562) 227-0012 or me at (310) 212-4500.

Sincerely,



Steve Steach
Refinery Manager

cc: Nico De Anda-Scaia, Assistant to the City Manager, Hand Delivery
Jeff Duclos, Mayor, Hand Delivery
Stacey Armato, Mayor Pro Tem, Hand Delivery
Mary Campbell, Councilmember, Hand Delivery
Hany Fangary, Councilmember, Hand Delivery
Justin Massey, Councilmember, Hand Delivery
Betsy Brien, PBF Energy
David Ingram, Torrance Refining Company LLC
Barbara Graham, Torrance Refining Company LLC
Darren W. Stroud, Torrance Refining Company LLC

Attachment A
TORC Comments on the City's Draft Letter and Supplemental Information About MHF

Draft Letter Misstatement #1

The Draft Letter in paragraph one states the following:

“... urge the South Coast Air Quality Management AQMD Board and Staff to adopt a Rule replacing hydrofluoric acid (HF) and Modified HF (MHF) alkylation with a safe alternative within four years of rule adoption.”

This misstatement in the Draft Letter reveals the City's lack of understanding and knowledge of the current status of alkylation technologies. In fact, MHF technology is the latest, most advanced, commercially proven, and safe alkylation catalyst available in the world. Safety and reliable operation of this refining process is covered by American Petroleum Industry's Recommended Practice 751, “*Safe Operation of Hydrofluoric Acid Alkylation Units*”, (“API RP-751”).

Despite conflicting facts and Torrance's MHF unit's 50+ year record of never having had an offsite release of MHF, the City's Draft Letter asks for MHF to be replaced in four years with a safe alternative. In essence, this defaults to Sulfuric Acid Alkylation, which is the only other currently commercially viable and available alkylation technology, other than HF/MHF.

However, a Sulfuric Acid alkylation unit is not any safer than the Torrance Refinery's MHF Alkylation Unit. In 1995, after an extensive technical review of the MHF technology by and recommendation of the Court-appointed Safety Advisor, a well-respected Los Angeles Superior Court Judge approved and required the use of the MHF technology at the Torrance Refinery under the City of Torrance Consent Decree, finding “... that the modified HF catalyst (including mitigation) as safe or safer than a sulfuric acid alkylation plant producing a comparable amount of alkylate.”

Because the Consent Decree is still in effect and the Torrance Refinery was ordered by the Court to phase-out HF for MHF, TORC could not replace MHF with Sulfuric Acid without the Court's approval, which is unlikely because it has already determined that MHF is as safe if not safer than Sulfuric Acid. The MHF technology has not changed under the Consent Decree and in fact the Torrance Refinery MHF Alkylation Unit's safety systems have only gotten safer.

In addition, Sulfuric Acid alkylation units are three times larger than HF/MHF units. Two new Sulfuric Acid Alkylation units, as a result of a four-year ban as advocated in the City's Draft Letter, would increase air pollution in Southern California, including sulfur oxides fugitive emissions, diesel particulates, and greenhouse gases (“GHG”). Two new Sulfuric Acid alkylation units would also consume more energy and have a larger GHG footprint compared to the Torrance and Wilmington MHF Alkylation Units. Moreover, two new units would require a significant amount of “fresh” acid each month; this would require approximately 1,440 truck shipments per month or almost 50 trucks per day for Torrance alone, if the sulfuric acid is renewed offsite. Conversely, the Torrance and Wilmington MHF Alkylation Units regenerate the HF acid within their processes and only require four to six trucks per month.

After considering these negative environmental impacts, the highly regarded California Energy Commission (“CEC”) pointed to the uncertainty of operating permits ever being granted for new

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Sulfuric Acid Alkylation units at Torrance and Wilmington. Plus, even if all the required permits were granted, designing, permitting, and constructing new "grassroots units" would take many years, and each refinery would face unique challenges.

It seems hypocritical for the City in its Draft Letter to be advocating for an alkylation technology that is not any safer than MHF yet exposes other communities to increased safety risks, as well as exposure and environmental impacts.

A Sulfuric Acid alkylation unit at Torrance would be cost-prohibitive. A report from Burns & McDonnell ("B&McD") concludes that the total installed cost to build an equivalent capacity Sulfuric Acid alkylation unit for Torrance would be approximately \$600,000,000, excluding the cost of spent sulfuric acid regeneration. An industry consultant told us a new grassroots, spent acid regeneration plant of sufficient capacity to serve a sulfuric acid alkylation unit at Torrance, or upgrading an existing third-party spent acid regeneration facility, could cost another \$300,000,000, inflating the total estimate to approximately \$900,000,000, which is unjustifiable because it would go to replace a unit that has a 50+ year record of never having an offsite HF or MHF release.

Regarding other emerging alkylation technologies, we have been evaluating alternative alkylation technologies since announcing the acquisition of the Torrance Refinery in September 2015. For example, to explore alternatives to alkylation, we have met separately with experts from Honeywell/UOP, Stratco/DuPont, B&McD, KBR, and CB&I, as well as independent alkylation experts, to explore emergent alternatives. Each of these technology licensors has also provided background information to the AQMD PR 1410 Working Group associated with the rulemaking, which can be found on the AQMD's website.

Each licensor has publicly acknowledged their respective alkylation technologies are not commercially viable or cost-effective, especially at the production rates required to replace existing units at Torrance and Wilmington. They have also stated there is no safer alternative alkylation technology than MHF, which is still the most recent advance in alkylation catalyst, while also noting alternative technologies:

- Are many years away from being commercially proven, safe/reliable, and available;
- Have unknown environmental impacts and process safety operations, and
- Will cost as much as, and perhaps more than, a conventional, new grassroots Sulfuric Acid alkylation unit.

Because of the cost and uncertainties of alternative alkylation technologies, a phase out of MHF would jeopardize the viability of the Torrance Refinery because it would no longer be able to produce the cleaner burning CARB gasoline required by law in California. This could result in the loss of approximately 30 percent of southern California's gasoline supply, 30 percent of jet fuel sent to Los Angeles International Airport, and 65 to 85 percent of the low sulfur Emissions Control Area bunker fuel at the Ports of Los Angeles and Long Beach. According to the CEC, the closure of the Torrance and Wilmington Refineries could create a 26 cent per gallon increase in the costs of gasoline in the region, which would reportedly impact lower-income families more than others.

If the Torrance Refinery were to close, there could be market impacts as noted by the CEC above, plus such a closure would impact the Refinery's 570 employees and 300 daily Building Trades and other

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contractors who rely upon their steady, highly-paid jobs provided by the Refinery to support their families. Additionally, when considering the Refinery's economic multiplier effect, for every Refinery job lost, 15 other jobs throughout Southern California and the state would be eliminated.

Moreover, such a closure would eliminate the support the Refinery provides to 45 community groups and non-profits, City of Torrance programs, and school district initiatives. The taxes and fees the Refinery pays funds valuable services that community members rely upon, including police and fire services, parks and recreation programs, just to name a few, would also be reduced or eliminated if the Refinery closes.

Against a record that shows:

- Sulfuric Acid alkylation is not any safer than MHF, causes more environmental impacts, and introduces other safety risks; and
- Other emerging alkylation technologies are years away for commercial viability and being proven inherently safer and more environmentally friendly than MHF,

What evidence does the City have to support in the Draft Letter that MHF should be replaced in four years. Has it done an independent technology assessment of Sulfuric Acid and the other emerging alkylation technologies?

There is no such assessment included in the City's agenda package associated with the Draft Letter. Without such an assessment, the City's decision to approve the Draft Letter is based on misinformation and misunderstanding of the current state of alkylation technology, and the Draft Letter should be withdrawn.

Draft Letter Misstatement #2

The Draft Letter in paragraph one states the following:

"... no mitigation can provide adequate protection for our densely populated region."

This misstatement is factually inaccurate and contradicted by the Torrance Refinery's MHF Alkylation Unit operational history. Our Refinery's Alkylation Unit was built in 1966 using HF as the catalyst, which the Refinery phased out in 1997. Since then, the Torrance Refinery has used a safer, "modified" version of HF, or MHF, which was thoroughly tested by qualified scientists who are technical experts in their fields.

Various safety experts and a Los Angeles Superior Court judge reviewed and approved these test results that showed MHF was a safe technology. In 1997, the AQMD approved an operating permit to use MHF in the Torrance Refinery's Alkylation Unit, which in 51 years of operation has never had an offsite HF release, including 20 years using MHF, a period that includes both the 6.5+ Sylmar and Northridge earthquakes.

That is about 19,000 days, 450,000 hours, 27,000,000 minutes, 1,600,000,000 seconds, and counting, without an HF offsite impact. This enviable reliability and safety record is due to the highly trained

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operators that operate the Refinery's MHF Alkylation Unit and the redundant safety systems employed on the unit, which include the MHF catalyst.

In fact, alkylation experts have publicly stated to the AQMD that they consider the Torrance Refinery's Alkylation Unit's redundant safety systems, including the use of MHF, to be among the most advanced units in the world. TORC also follows specific, global industry practices (i.e., API RP-751) for safely and reliably managing this process.

Torrance's MHF Alkylation Unit safety systems meet all API RP-751 requirements, and include the following:

- **Preventive Safety Systems**
 - Specialized training and personal protective equipment required for all personnel entering the unit
 - Robust inspection and audit programs
 - Torrance Refinery follows API RP-751 for M/HF units
 - Recognized by CalOSHA and other government agencies globally
 - Followed by refineries worldwide
 - Two Operators stationed on unit each shift in contact with Console Supervisor
 - Eight surveillance cameras with video playback
 - Emergency simulation drills
 - Joint TORC and Torrance Fire Department ("TFD") drills
 - TORC and TFD personnel are both Hazmat trained
 - MHF
 - Torrance Refinery MHF Alkylation Unit meets >50% Airborne Reduction Factor ("ARF") per MHF chemistry on an annual basis as required the City of Torrance Consent Decree
 - Online MHF Analyzer
 - Samples taken once every shift
- **Emergency Response Safety Systems**
 - Redundant response systems allow rapid response and mitigation of any potential loss of containment
 - Barrier technology = passive mitigation
 - Increases total unit ARF to 89% in combination with MHF chemistry
 - Flange barriers
 - Settler belly pans
 - Acid circulation pump enclosures
 - Water Mitigation = active mitigation
 - Nine remotely controlled water cannons
 - Used in tandem with console cameras to target a specific release point
 - Local fire monitors
 - Deluge systems on major pumps
 - Fire sprays on vessels
 - 29 Point sensors located throughout unit and on perimeter
 - Detect HF down to 0.1 parts per million (ppm)
 - Alarms internally at 2 ppm

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- Reported directly to AQMD at 6 ppm
- In the process of completing a similar alarming system to TFD
- Line of Sight Laser (Open Path) system on unit perimeter
 - Detect HF down to 0.1 ppm per meter (ppm*m)
 - Alarm internally at 50 ppm*m and 75 ppm*m
- Emergency evacuation system routes all acid from the main unit to a storage drum located behind a blast wall - active mitigation
 - 80% of acid is removed in ~2 min
 - The remaining 20% is transferred within 7 minutes after the system is activated
- Automatic valves have battery backups that allow the valves to be operated in the event of a power disruption - active mitigation
- All flanges and connections in acid services are coated with special MHF-sensing paint - active mitigation
 - Extremely sensitive - paint changes from yellow to red in the presence of trace amounts of MHF in the parts per billion (ppb) range
- Alarmed safety showers

Wilmington Refinery's Alkylation Unit has its own array of safety systems and a similar reliability record, using HF from 1969 until 2007, when they phased out HF and began using MHF in an agreement with the AQMD, which included the changeover as one of the AQMD's "environmental justice initiatives" in 2003. That refinery has never had an offsite release. Combined, the two facilities have operated for 100 years without an offsite release.

The AQMD issued permits to Torrance Refinery for its MHF alkylation unit in 1997 and Valero's Wilmington Refinery in 2004, after thoroughly reviewing the efficacy of MHF catalyst technology. As noted in these excerpts from a February 2003 AQMD news release announcing that the AQMD had entered into an agreement with Valero that required Wilmington Refinery to phase-out and replace HF with MHF technology, the AQMD unequivocally supports and endorses the use of MHF to enhance public safety:

"Once this refinery stops using concentrated hydrogen fluoride, we will have virtually eliminated the potential for a catastrophic accidental release of this compound in our region," said Barry Wallerstein, executive officer of the South Coast Air Quality Management AQMD."

"The agreement fulfils one of the 23 Environmental Justice goals adopted by AQMD's Governing Board last fall."

"Switching to modified HF will minimize the possibility of a catastrophic accidental release not only at the refinery, but along Southland transportation corridors, as the additive is added to the chemical before shipping."

The Torrance and Wilmington MHF Alkylation Units have been operating without any offsite release since the AQMD originally issued permits to use MHF. The MHF technology is unequivocally the same today as when the AQMD originally permitted its use in both refineries. However, the safety systems, training, and knowledge of the MHF alkylation process and equipment have improved.

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Consequently, these MHF alkylation units are even safer today than when the AQMD issued the first operating permits to Torrance 20 years ago.

Despite this, we are working with various agencies and the AQMD through the PR 1410 rulemaking process to further enhance the Refinery's MHF Alkylation Unit's safety systems to make it even safer than it already is today.

Against this backdrop of long record of safety and the redundant safety systems on the Torrance Refinery's MHF Alkylation Unit, what evidence does the City have to support in the Draft Letter that "no mitigation can provide adequate protection"? Has it done an independent scientific and technical evaluation to support this? It appears not as there is no such evaluation included in the City's agenda package associated with the Draft Letter. Without such an evaluation, the City's decision to approve the Draft Letter is based on misinformation and fear.

Draft Letter Misstatement #3

The Draft Letter in paragraph two states the following:

"According to the US Chemical Safety Board, our community narrowly missed a catastrophic MHF release during the 2015 ExxonMobil explosion."

This statement is misleading, inflammatory, purposefully instills fear in the public, and most importantly, not what the Chemical Safety Board's ("CSB") stated in its final investigation report of the ExxonMobil Oil Corporation's ("ExxonMobil") February 15, 2015 Electrostatic Precipitation ("ESP") incident. Although CSB's final report did refer to the incident as a "near miss" they made no mention in their report that the "community narrowly missed a catastrophic MHF release" as claimed in the City's Draft Letter.

What the CSB's final report actually stated was that the agency could not "comment on [the] effectiveness of the [MHF] additive" and "whether the safeguards could prevent a potential release of HF outside of the refinery property" because ExxonMobil had not provided them with this information. *See* CSB's ExxonMobil Torrance Refinery, Electrostatic Precipitation Explosion, Investigation Report, No. 2015-02-I-CA (May 2017), p. 6., fn. 2; *see also* p. 49, fn. 62.

Moreover, as the CSB made clear to the City of Torrance in its letter dated August 4, 2017, "[t]he CSB does not make recommendations to prohibit or restrict the use of specific chemicals within the industries we investigate, but rather analyzes the safe storage and handling of chemicals and the mitigation of risks associated with their use."

Based on a recent court decision, the CSB's characterization of this incident as a "near miss" is misleading. Recently, the Federal California Central District Court denied the portion of a motion brought by the U.S Department of Justice on behalf of the CSB to enforce administrative subpoenas issued to ExxonMobil for the production of MHF Alkylation Unit related documents. These documents had been sought by the CSB from ExxonMobil in the course of its investigation into the February 18, 2015 ESP incident.

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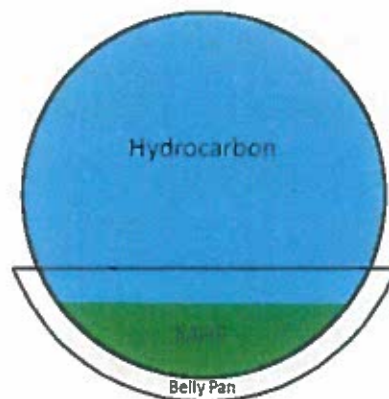
In denying the production of these documents, the Court held that “the requests [were] **UNFORCEABLE** because the requested information is not sufficiently related to the facts, conditions, and circumstances and the cause or probable cause of the February 2015 accidental release to reasonably be considered relevant”. See *United States of America v. Exxon Mobil Oil Corp.*, Case No. MC 17-00066 CBM (November 3, 2017), p. 7, lns. 14-17; (emphasis in the original).

Importantly, there is no evidence as to whether a MHF release would have occurred if debris from the ESP would have come into contact with an acid settler on February 18, 2015. Merely having an opinion and stating that a “release could have occurred” is speculative at best and purposefully generates unwarranted public fear.

Based on public statements by the refinery's prior owner at the time of the incident, there was no risk of the piece of ESP ductwork causing an MHF Alkylation Unit release on February 18, 2015. Specifically, they said that the MHF Alkylation Unit's safety and mitigation systems were fully functional during the incident and one of them, the rapid Acid Evacuation System (“AES”), was successfully deployed within ten seconds of the ESP incident occurring, and worked as designed.

Importantly, within two minutes of the AES system being deployed by the unit Console Team Lead on February 18, 2015, 80% of the acid in the MHF Alkylation Unit has been transferred to the AES evacuation tank, which is behind a blast wall. In another five minutes the remaining acid was moved to this same location. Other safety systems, including the water deluge and point and shoot water monitors, were on stand-by and fully functional, but were unneeded.

Based on what the prior owner stated, it is highly unlikely the ESP debris from the explosion had the force, or could have had the force, necessary to penetrate the 2-inch thick carbon steel MHF Alkylation Unit settlers. The function of an acid settler is literally to “settle out acid” in the bottom third of each of the settlers. Again by design, the upper two-thirds of a settler contains light hydrocarbons.



The acid phase lies in the green portion of the settler vessel. The belly pans physically prevent an upward- or horizontally-oriented MHF release from occurring. The belly pans extend above the acid level for the complete length and width of the settler vessel.

Accordingly, if the debris had struck an acid settler and somehow had the force to penetrate the 2" thick carbon steel shell, the former owner has indicated this would likely occur in the upper section of the

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settler, which would cause the released light hydrocarbons to auto-refrigerate on exposure to ambient air. If that were to happen, the responsible person on duty would evacuate the acid from the bottom of the settler(s) at the same time and the Alkylation Unit's multiple layers of protection would deploy, which is what was done as a precaution at the time of the incident, according to Refinery training and procedures.

Importantly, the Torrance Refinery made the following corrective actions to the Fluidized Catalytic Cracking Unit ("FCC") and ESP to prevent a similar ESP incident from occurring:

- Installed new instrumentation, new equipment, and additional alarms;
- Defined and began using minimum levels for operation;
- Developed a "safe park" procedure and updated shutdown/startup steps for the FCC; and
- Trained Refinery personnel to use the new instrumentation, equipment, additional alarms, and procedures.

In addition, TORC recently initiated a Refinery-wide training program to enhance focus, professionalism, competency and capabilities across the Refinery. This investment in our workforce touches every site employee, who are giving the program positive, enthusiastic feedback.

These examples from the Draft Letter play "fast and loose" with what the CSB's final report actually stated, misleads the public, AQMD Governing Board members and staff, and other decision-makers, and is a factually inaccurate basis for sending a letter to the AQMD as part of its PR 1410 rulemaking effort encouraging the replacement of the MHF technology in four years.

Draft Letter Misstatement #4

The Draft Letter in paragraph two also states the following:

"The US EPA 2017 Inspection report found that the Torrance refinery's official MHF risk estimate is understated, has 'no clear basis,' and that an HF risk estimate should be used instead. It also identified many serious safety lapses by ToRC's management of the alkylation unit."

This misstatement appears to be related to EPA's March 27, 2017 preliminary inspection findings associated with its November 2016 RMP inspection of the Torrance Refinery. However, the City's statement is inaccurate and misrepresents EPA's preliminary findings.

EPA never stated that the Refinery's "MHF risk estimate is understated" and "an HF risk estimate should be used". In fact, EPA never reviewed an "HF risk assessment" for the Refinery during that RMP inspection. As part of its inspection, among other things, EPA reviewed the Refinery's currently submitted RMP.

However, as explained above in detail, the RMP is not a "risk estimate" or a predictor of an event or incident, but rather used as an emergency response planning tool. EPA also cautions that "[c]haracterizing data using only worst-case scenarios can be misleading and unnecessarily alarming." See EPA's "Evaluating Chemical Hazards in the Community: Using an RMP's Offsite Consequence Analysis" (550-B-99-015 Risk Management, May 1999), p. 7. Moreover, EPA has further cautioned

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that “[t]hey are not intended to represent a ‘public danger zone’ ”. *Id.* EPA RMP guidelines acknowledge the WCS uses unrealistic modeling parameters and is an ultra-conservative, unrealistic scenario. See EPA’s “General RMP Guidance”, Chapter 4 – Offsite Consequence Analysis (2004), pp. 4-6.

Since receiving EPA’s preliminary findings related to the Refinery’s currently filed RMP WCS, TORC has been working cooperatively with EPA to clarify and resolve the preliminary findings in an expeditious manner. As part of this process, TORC and EPA have had frequent meetings and conference calls to clarify and resolve the preliminary findings. This cooperative and robust dialogue is currently continuing, consistent with the agreed-to path forward between TORC and EPA.

EPA did not identify serious safety lapses by TORC’s management regarding the MHF Alkylation Unit. EPA’s preliminary findings raised questions about how some of the Refinery’s procedures were filled out and documented while equivalent mitigation or coverage for safety critical devices that were offline during maintenance or repairs. Subsequently, TORC provided additional documentation to clear up EPA’s questions and/or updated its procedures to make them clearer.

Similarly to the CSB’s final report above, the Draft Letter’s playing “fast and loose” with what EPA’s preliminary findings actually stated, misleads the public, AQMD Governor Board members and staff, and other decision-makers and is a factually inaccurate basis for sending a letter to the AQMD as part of its PR 1410 rulemaking effort encouraging the replacement of the MHF technology in four years.

Draft Letter Misstatement #5

The Draft Letter in paragraph two also states the following:

“The AQMD staff’s scientific assessment of MHF in August 2017 was that MHF safety claims have not been proven; that it poses a health risk to a significant numbers of persons, and therefore it is a necessity to phase it out.”

This statement is misleading because the AQMD has advanced its analysis of MHF and TORC is continuing to work with the AQMD to close the gap of its technical understanding of the efficacy of MHF and the Torrance Refinery MHF Alkylation Unit’s redundant safety systems, which are listed above.

Selectively, the Draft Letter appears to be citing a presentation that the AQMD gave at the August 23, 2017 Working Group meeting related to its PR 1410 rulemaking effort. What the Draft Letter fails to note is the AQMD’s January 20, 2018 presentation to the AQMD Refinery Committee, slide 6, stated that:

“Ignoring all the uncertainties, best case scenario with all existing mitigation measures added at TORC, HF reduction is 89%”

However, as we commented and recently explained to the AQMD, staff’s presentation fails to take into consideration the Torrance Refinery MHF Alkylation Unit’s active mitigation systems; i.e., evacuation, isolation, and water cannons/deluge system. The AQMD must consider these active mitigation systems

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when measuring the unit's overall ARF performance, rather than purposefully ignoring them. As discussed below, including active mitigation raises the ARF above 89%.

We also commented and explained that the AQMD staff misrepresents the Torrance Refinery's currently submitted EPA RMP Worst Case Scenario ("WCS") analysis, which is the basis for AQMD's statements in slide 6 of its January 20 2018, presentation. We informed the AQMD that it is mistakenly equating "hazards" with "risks." By doing so, the AQMD is removing the "event probability component" from its analysis, which misrepresents the results.

Use of EPA RMP consequence analysis information in a rulemaking process is inappropriate for a number of reasons. When put into context, according to EPA the RMP WCS analysis is an emergency response planning tool, rather than a predictor of an event or incident, which is how the AQMD used the WCS analysis. EPA also states that "[l]ocal emergency planning organizations can use RMPs to prepare response plans and allocate resources. See EPA's "Evaluating Chemical Hazards in the Community: Using an RMP's Offsite Consequence Analysis" (550-B-99-015 Risk Management, May 1999), p. 9.

EPA also cautions that "[c]haracterizing data using only worst-case scenarios can be misleading and unnecessarily alarming." See *Id.*, p. 7. Moreover, EPA has further cautioned that "[t]hey are not intended to represent a 'public danger zone' ". *Id.*, (emphasis added.)

EPA RMP guidelines acknowledge the WCS uses unrealistic modeling parameters and is an ultra-conservative, unrealistic scenario:

"Because the assumptions required for the worst-case analysis are very conservative, the results likely will also be very conservative ... The distance to the endpoint estimated under worst-case conditions should not be considered a zone in which the public would likely be in danger, instead it is intended to provide an estimate of the maximum possible area that might be affected in the unlikely event of catastrophic conditions."

See EPA's "General RMP Guidance", Chapter 4 – Offsite Consequence Analysis (2004), pp. 4-6.

Just as importantly, in determining the WCS facilities are prohibited from taking credit for active safety measures such as automatic shutdown systems, firewater monitors, deluge systems, etc. Plus, they are unable to include emergency response actions. However, weather conditions are purposefully deemed unfavorable.

The WCS is modeled to a threshold of ERPG 2, which simulates an individual being subject to one hour of exposure in the planning circle, without irreversible or other serious health effects or symptoms that could impair an individual's ability to take protective action. In addition, the RMP regulations limit the release to 10 minutes in duration. These factors add another level of conservatism to the WCS analysis, further skewing the consequences and undermining AQMD staff's statements in the presentation.

The RMP WCS analysis purposefully overestimates the potential hazard to create an ultra-conservative, unrealistic scenario for planning purposes. Similarly, the hazard of flying is the plane crashing; the hazard of crossing a street is the pedestrian being hit by a vehicle; the hazard of driving across a bridge is the bridge collapsing; and the hazard of surfing is drowning.

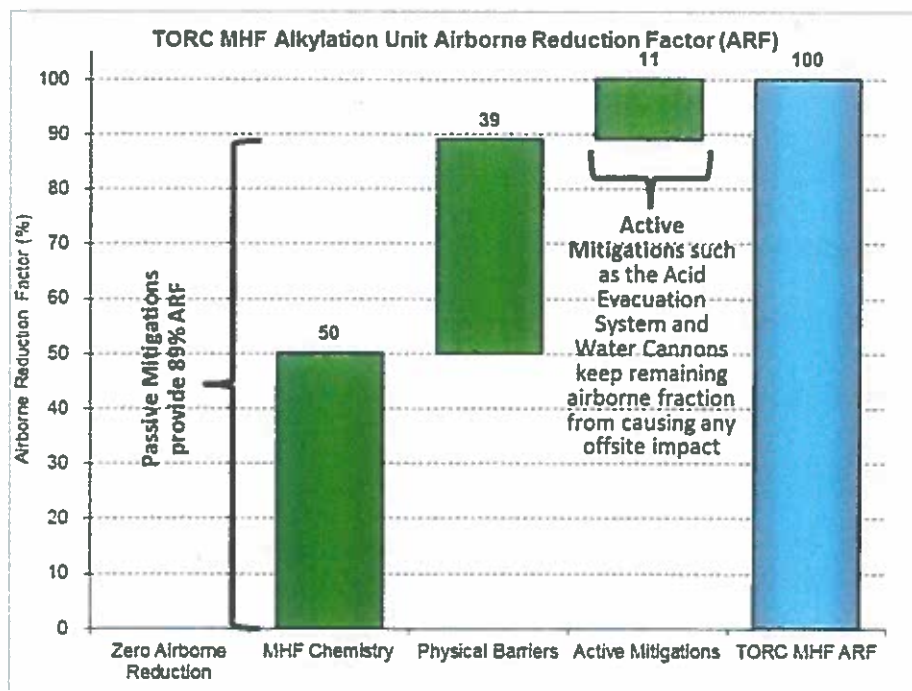
Attachment A
TORC Comments on the City's Draft Letter and Supplemental Information About MHF

Similarly, the EPA considers its RMP WCS to be an emergency planning tool. The EPA does not use WCS results for determining the acceptability of facility operation or rulemaking, so the AQMD using the WCS for rulemaking is completely inappropriate and unreasonable, and we request you stop the practice, as we have done with them.

By presenting Torrance Refinery's current RMP WCS information in the January 20th meeting out of context with EPA's highly-developed guidelines, the AQMD misinformed and confused the public, elected officials, and Refinery Committee and Governing Board members, generating unwarranted fears and concerns to support a phase-out of MHF, despite the proven efficacy of the technology and the Torrance Refinery MHF Alkylation Unit's robust passive and active safety measures. Now it appears that the City may be doing the same thing in trying to make a case against the safe use of MHF as a catalyst in alkylation units

Importantly, we have explained to AQMD staff that the failure to mention in their January 20th presentation the effects of the Torrance Refinery MHF Alkylation Unit's active safety mitigation systems on a potential release, misrepresents and inflates the potential impact of a potential release, which could lead to unwarranted fear by the public, AQMD Governing Board members, other agencies, and elected officials.

As shown in the chart below, TORC believes the combination of MHF, passive mitigation, and active mitigation, provides the ability to contain a release onsite, which is reflected in the units reliability record of never having had an offsite MHF release in more than 50-years of operation.



Society generally makes rational, risk-based decisions using a number of factors, including the realistic likelihood of a hazard-related incident. In short, the inherent risk of an activity is among the criteria society uses to make all kinds of decisions.

Attachment A
TORC Comments on the City's Draft Letter and Supplemental Information About MHF

Along these lines, a quantitative risk analysis ("QRA") following industry best practices was conducted as part of the City of Torrance Consent Decree process for the use of MHF at the Torrance Refinery. QRA was chosen by the City, the Court, and industry-peers as an appropriate decision-making tool because the QRA would consider the likelihood, severity, and other relevant comparison factors that need to be taken into account for rulemaking.

The independent Court-appointed Safety Advisor reviewed, confirmed, and validated the conclusion of the QRA that MHF was as safe, or safer than, Sulfuric Acid for a similarly-sized Alkylation Unit. This finding is included in the Safety Advisor's report to the Court, which approved the use of the MHF technology at the Torrance Refinery and forms the basis for the Consent Decree under which the Refinery operates the MHF Alkylation Unit. The QRA was subsequently re-validated and updated in both 1998 and 2001 by the Court-appointed Safety Advisor.

The combination of MHF, passive mitigation, and active mitigation in the MHF Alkylation Unit prevent a potential HF release from the Refinery. A QRA has already been done for the Torrance Refinery MHF Alkylation Unit, which shows that MHF is as safer if not safer than Sulfuric Acid.

What evidence does the City have to support the claims in its Draft Letter that MHF "poses a health risk to a significant numbers of persons". Has the City done an independent and appropriate risk assessment of MHF compared to Sulfuric Acid or the other emerging alkylation technologies? There is no such assessment included in the City's agenda package associated with the Draft Letter. Without such an assessment, the City's decision to approve the Draft Letter is based on misinformation and fear.

At a minimum, the City's Draft Letter fails to take all of the Torrance Refinery MHF Alkylation Unit's redundant passive and active safety systems into consideration, so the letter misleads the City Council members who will vote on it, as well as the public, AQMD Governor Board members and staff, and other decision-makers as to what actually might occur in the event of a release, propagating misinformation and instilling unwarranted fear.

Draft Letter Misstatement #6

The Draft Letter in paragraph three states the following:

"Hermosa Beach residents, workers, and visitors are at constant risk of a MHF release from the Torrance refinery, just 3.5 miles from city limits. It is unacceptable to risk a disaster of Bhopal-like proportions in the South Bay."

This misstatement has no factual, technical, or scientific basis for the all the reasons stated above as it appears the City has not done an independent and appropriate risk assessment risk assessment regarding the use of MHF, instead of relying on information provided by an activist group that has no educational or technical experience with or any other MHF Alkylation process. More disappointingly, the misstatement appears purposefully intended to instill fear in the public, AQMD Governor Board members and staff, and other decision-makers in order to convince them to support a replacement of MHF in four years based on the City's letter, if the Draft Letter is approved by the City Council.

Attachment A
TORC Comments on the City's Draft Letter and Supplemental Information About MHF

South Bay residents, workers, and visitors are **not** at constant risk of a MHF release from the Torrance Refinery. As detailed above, in the 51 years of operation, Torrance Refinery Alkylolation Unit has never had an offsite HF release, including 20 years using MHF, a period that includes both the 6.5+ Sylmar and Northridge earthquakes. Our Refinery's long safety record is due to the highly trained operators that operate the Refinery's MHF Alkylolation Unit and the redundant safety systems employed on the unit.

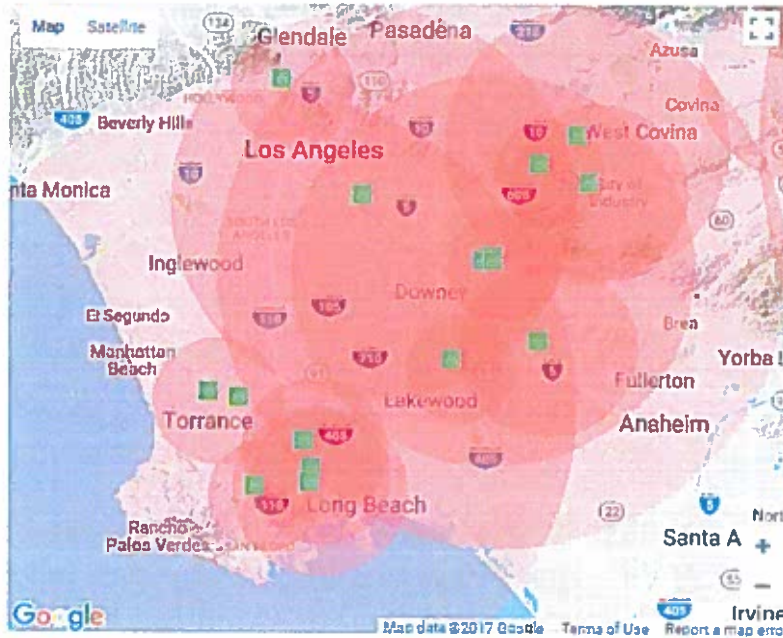
Also, there is **not** an unacceptable risk of a disaster of Bhopal-like proportions in the South Bay. The Bhopal incident occurred in India 30+ years ago at a chemical plant that did not use MHF and had no redundant safety mitigation systems. The incident has absolutely nothing in common with the procedures, training, equipment, and safety systems used at the Torrance Refinery. The combination of MHF, passive mitigation, and active mitigation in the Refinery's MHF Alkylolation Unit would prevent a potential offsite HF release.

This type of misstatement is what Risk Communication refers to as using "outrage factors" to artificially promote public fear and outrage. Misrepresenting risk as the Draft Letter currently does is counterproductive when the objective is protecting South Bay residents and our workforce, which we are committed to do.

If the City is going to rely on an EPA RMP WCS consequence analysis ("hazards only") framework as a basis for its Draft Letter, then it must also evaluate the hazards associated with other RMP facilities that are required to do a WCS as part of their RMP submittal to EPA and/or the state. As would become readily apparent from undertaking this evaluation, there are many facilities within the South Bay that have similar and even larger planning areas, while using more hazardous materials than HF and certainly MHF.

Ignoring the potential for those facilities to have a consequential release at some unknown point in the future further illustrates the City's rush to judgement on MHF at Torrance Refinery. These other RMP facilities manage risk appropriately; are most likely heavily regulated; and are reporting their WCS using the same RMP guidelines as the refineries, yet the City is only targeting the Torrance Refinery. Will it next start sending letters to other agencies and jurisdictions that are adjacent to it advocating that other hazardous materials and processes be banned?

Attachment A



Map showing RMP WCS zones for chemicals within the greater Los Angeles area (See <http://usactions.greenpeace.org/chemicals/map/>)

Take No Action on the Resolution and Draft Letter

Due to all the issues with the Draft Letter and reasons discussed in detail above, we urge the City to take no action on Agenda No. 6a Resolution and Draft Letter.

There is another specific reason for withdrawing Agenda No. 6a Resolution and Draft Letter. At the end of the AQMD January 20, 2018 Refinery Committee meeting, the Chairs of both the Refinery Committee and Governing Board provided direction to the respective stakeholders - both refineries, AQMD staff, and activist groups - to work out a mutually satisfactory agreement that would enable the AQMD to resolve outstanding issues and proceed to a conclusion on the rulemaking. Specifically, Governing Board Chair Dr. Burke directed these stakeholders to "... come back, to this Committee with a more highly negotiated approach and then give the Chair of this Committee, who really knows what he is doing, a bite at the apple and then let's go forward." Similarly, at the conclusion of the meeting, Refinery Committee Chair Dr. Parker directed "[t]here's a lot of ways to basically look at this; I would urge everyone to sit down and look at it realistically and positively ... and reason together." We are committed to engaging in good faith with all parties involved in the rulemaking process to set the stage for a potential amicable resolution, or in Chair Dr. Parker's words, "we can find a solution that we might be able to all agree on."

We urge the City to let the AQMD PR 1410 rulemaking proceed without unnecessary interference from the City. However, if the City feels that it must take some action, we ask the City to take a position similar to the City of Torrance and simply support the AQMD's PR 1410 rulemaking.