

EXHIBIT A

Voluntary Safety Enhancements

To further enhance the existing safety systems currently employed in the Torrance Refinery's MHF Alkylation Unit, TORC will implement the following Voluntary Safety Enhancements on the MHF Alkylation Unit, to further mitigate the likelihood and potential impact of any HF/MHF release from the MHF Alkylation Unit:

- 1) **Settler Area Protective Steel Structure** – TORC will install, maintain, and operate a protective steel structure around and over the MHF Alkylation Unit's acid settler area as additional passive mitigation to the existing settler pans, and as such, the structure will be:
 - a) Designed to protect the settlers from external impacts.
 - b) Designed to provide an additional barrier and promote an HF/MHF-water mixing environment to further increase MHF rainout in the event of a HF/MHF release from the settler area.
 - c) The south side of the structure facing the interior of the MHF Alkylation Unit will be designed to serve as a barrier and allow for natural light in order for unit operators and maintenance personnel to see into the structure's interior.
 - d) For the bottom of the structure, designed to be open to allow operators and maintenance personnel safe access to the settler area and reduce the potential of creating a flammable environment.
 - e) Designed to automatically deploy upon detection necessary volumes of water within the structure to mitigate a potential HF/MHF release from the settlers.
 - f) Designed and installed in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with, the City of Torrance Consent Decree ("Torrance Consent Decree")², American Petroleum Institute's Recommended Practice-751 ("API RP-751"), California Process Safety Management Program ("CalPSM")³, and California Accidental Release Prevention Program 4 ("CalARP")⁴ requirements, as applied by the Torrance Fire Department ("TFD"), Los Angeles County Fire Department ("LACFD"), the California Department of the Industrial Relations ("CalOSHA"), and California Offices of Emergency Management ("CalOES"), respectively.
 - g) Designed to prevent the creation of a confined space, to avoid interference with existing MHF Alkylation Unit mitigation systems, to minimize the confinement of flammable vapors, and to continue to provide for free ingress and egress from the unit within the safety and structural and foundation limitations of the unit.

- 2) **Settler Area Water Mitigation Dome and Curtain** – TORC will install, maintain, and operate a water mitigation dome and curtain over and around the MHF Alkylation Unit's acid settlers, and such dome and curtain, as additional active mitigation, and as such, the water mitigation system will:

² See Los Angeles County Superior Court, Case No. C 719 9530.

³ See Title 8 Cal. Code Regs. §5189.1.

⁴ See Title 19 Cal. Code Regs. § 2762.0.1 *et seq.*

- a) Include a new high volume water mitigation system around and over the acid settlers to promote mixing of water to contain a HF/MHF release in the settler area, while also creating a water curtain at the base of the structure, and will specifically consist of:
 - i) Two additional layers of water mitigation:
 - (1) Four overhead water monitors to form an umbrella dome inside the structure (Stage One).
 - (2) Spray curtain around the base of the structure (Stage Two).
 - b) Augment the MHF Alkylation Unit's existing water mitigation systems to provide a three-stage water response (Stage Three) in the settler area.
 - c) Automate upon HF/MHF detection in the acid settler area to allow a rapid and focused water mitigation response, specifically:
 - i) Automation of the new water mitigation system will allow water application and contact with any HF/MHF release after detection.
 - ii) The MHF Alkylation Unit's existing water monitors in the settler area can then be activated manually as needed to provide a third layer of targeted water mitigation (Stage Three).
 - d) Optimize the existing water mitigation monitors to ensure sufficient water mitigation coverage for the structure and acid settler area.
 - e) Be designed, installed and operated in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with the Torrance Consent Decree, API RP-751, CalPSM, and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively.
 - f) Ensure that the combination of the new monitors (Stage One) in the interior of the structure, spray curtains around the structure base (Stage Two), and the existing elevated monitors (Stage Three), can contain any credible HF/MHF release within the structure by the layered water mitigation systems.
- 3) **Settler Area Enhanced HF/MHF Detection System** – TORC will install, maintain, and operate an enhanced HF/MHF detection system in and around the MHF Alkylation Unit's acid settlers area, and as such, the detection system will:
- a) Include new open path laser detectors to monitor the acid settler area, and inside the structure.
 - i) These laser detectors will help identify any potential HF/MHF release and will automatically deploy the new water mitigation system within the structure upon detection.
 - ii) These laser detectors will allow Refinery operators to rapidly track and pinpoint the location of a HF/MHF release in the acid settler area.
 - b) Include new point source detectors to enhance the unit's existing detection system.
 - c) Include a new camera installed within the structure with video replay capability to provide visual monitoring of the settler area inside the structure.
 - d) Be placed, designed and installed in accordance with industry and TORC's engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with the Torrance Consent Decree, API RP-751, CalPSM, and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively.

- 4) **Northern Water Mitigation Monitors** – TORC will upgrade, maintain, and operate the northern water mitigation monitors, as enhanced active mitigation, and as such, the water mitigation system will:
 - a) Automate upon targeted HF/MHF detection to allow a rapid and focused water mitigation response, specifically:
 - i) Automation of the water mitigation system will allow proactive water application and contact with an HF/MHF release after detection.
 - ii) These water mitigation monitors can also be activated manually as needed to provide targeted water mitigation.
 - b) Optimize the water mitigation monitors to ensure sufficient water mitigation coverage.
 - c) Be designed, installed and operated in accordance with industry and TORC’s engineering standards, manufacturer specifications and guarantees, and operated consistent with the Torrance Consent Decree, API RP-751, CalPSM, and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively.

- 5) **Fluidized Catalytic Cracking Unit (“FCCU”) Electrostatic Precipitator (“ESP”) over-pressure mitigation** – TORC will install and maintain FCCU ESP over-pressure mitigation which will be:
 - a) Designed to minimize the potential for a large section of the FCCU ESP to detach during an over-pressurization incident by providing an anchoring system for the ESP intake ducting.
 - b) Placed, designed and installed done in accordance with industry and TORC’s engineering standards, manufacturer specifications and guarantees, and pursuant to process safety hazard analysis, and operated consistent with the CalPSM and CalARP requirements as applied by TFD, LACFD, CalOSHA, and CalOES, respectively requirements.