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1.0 Purpose

The Benzene Waste Operations NESHAP (BWON) is an Environmental Protection Agency (EPA) regulation that defines how refinery and chemical plant benzene containing wastes and wastewater must be managed. MPC Galveston Bay Operations are subject to this regulation and; therefore, MPC must adhere to the requirements of the BWON for management and control of wastes and wastewater that contain any amount of benzene. In general, the rule limits the amount of benzene contained in wastes and wastewater that can be sent to collection and/or storage systems that do not meet the control requirements of the rule. MPC has systems in place to properly manage benzene containing wastes and wastewater. Additionally, MPC Galveston Bay operates under a consent decree with the USEPA and the US Department of Justice that requires compliance with activities, monitoring and projects that go beyond the BWON regulations.

The purpose of this procedure is to clearly identify the expectations of affected groups within the refinery with regard to BWON compliance responsibilities and to provide a list of procedures and requirements that must be maintained. This procedure generally outlines the procedures and systems that MPC embraces to meet the requirements of the BWON. Other procedures and standard operating instructions directly affect implementation of this BWON procedure, and in turn site compliance. These procedures are referenced herein and should be read and understood in the context of this procedure.

2.0 Scope

Add text.

3.0 Procedure

3.1 Roles and Responsibilities

3.1.1 Leadership Team

The MPC Leadership Team is responsible for advocating, enforcing and providing resources for implementing BWON Procedure.

3.1.2 Operations

3.1.2.1 The responsibility for day-to-day BWON compliance generally resides with Operations. Operations is responsible for operation and maintenance of sources of waste or wastewater and those systems that are designed to manage the wastewater. Operations is also responsible for ensuring that all wastes generated are managed in accordance with BWON in BWON controlled systems.

3.1.2.2 Any changes in day-to-day operations, maintenance of equipment, or changes to equipment that may affect what is reflected in the waste stream inventory (WSI) must be communicated to HSSE before the change is made through the MOC process. The WSI is a detailed list of flow and composition of all process and maintenance generated waste streams which contain benzene. Any process or equipment change which will alter the flow or composition of an existing waste stream, or creates a new benzene containing waste stream, requires an MOC.

3.1.2.3 The site MOC process must also be followed when making changes that impact the wastewater conveyance and treatment systems including oil/water separators, dry weather sumps, gravity sewers (including drains, and access points) along with the wastewater treatment system.

3.1.3 Environmental

3.1.3.1 The Environmental Department BWON subject matter expert (SME) is responsible for training operations and other areas on BWON requirements and reinforcing those requirements, maintaining the waste stream inventory (WSI), and collecting updates to the WSI as provided by operations. The BWON SME is also responsible for collecting and managing BWON records and preparing and submitting the quarterly and annual reports required under BWON regulations. In addition to the BWON reports, the BWON SME is responsible for submittal of all the BWON applicable requirements as listed in the 6th Amendment to the Consent Decree (Section 19). Finally, the BWON SME is responsible for preparing, reviewing and updating written procedures for implementing site BWON procedures. The BWON program manual provides further details on the Environmental Department's roles and responsibilities in managing BWON compliance.

3.1.3.2 The Leak Detection and Reporting (LDAR) Group is responsible for the BWON Inspection and Monitoring Team. The actual inspection work is presently performed by contractors. The BWON Inspection and Monitoring Team is responsible for performing and maintaining records of visual inspections and instrument monitoring of each affected BWON waste management unit and the associated control device. BWON waste management units and control devices requiring inspection include but are not limited to: drains, junction boxes, oil water separators, dry weather sumps, carbon canisters, tanks, vacuum trucks and containers. The BWON SME is responsible for training the BWON Inspection and Monitoring contractor technicians.

3.1.3.3 The LDAR Team is responsible for tracking the maintenance activities to ensure that leaks and other problems are corrected and/or repaired in accordance with BWON Procedure. The LDAR Group is also responsible for providing inspection results to the BWON SME for consent decree and regulatory reporting requirements.

3.1.3.4 The Environmental Coordinators (ECs) are responsible for providing the BWON SME with flare pilot outage, closed vent system bypass and missed AVO information on a quarterly basis for reporting. Each of the ECs have a compliance task for this. ECs should also advise the BWON SME of significant hydrocarbon spill events which have potential to impact on the site uncontrolled benzene quantity, or other environmental events involving BWON waste management units, including but not limited to oil water separators, flares, BWON tanks and the Environmental Facility.

3.1.4 Tank Inspections

The tank Inspections group is responsible for ensuring that the required gap seal inspections are performed on oil water separators in BWON service, and the results recorded. Under the current consent decree and regulatory inspections schedules, Secondary seals need to be inspected on a quarterly basis and Primary seals every 5 years.

3.1.5 Maintenance and Turnaround Planning

3.1.5.1 The Maintenance and Turnaround Planning Group is responsible for ensuring that benzene containing wastes generated during maintenance and turn around activities are managed in systems designed and operated in accordance with the BWON air emission control requirements. In addition the Environmental Department manages all solid waste generated at the site that is destined for off-site disposal. Therefore, waste generation must be planned with the Environmental Department prior to waste generation to

ensure BWON control requirements for such sources are met.

3.1.5.2 Maintenance is responsible for executing timely repairs and maintenance on BWON waste management units following a failed inspection by the BWON Inspection and Monitoring Team.

3.1.5.3 The Maintenance group is responsible for timely follow-up maintenance needed following the LDAR contractors inspection results.

3.1.5.4 Vacuum Truck Contractors are also coordinated through Maintenance, and maintenance is responsible for ensuring Vacuum Truck companies comply with the vacuum truck inspections requirements of BWON Vacuum Truck Inspections Procedure # HSSE-MS-15-06.

3.1.6 Security

Security is responsible for ensuring vacuum trucks without a valid annual BWON inspection sticker do not enter the site except to present to LDAR for immediate inspection, in accordance with the BWON Vacuum Truck Inspections Procedure # HSSE-MS-15-06.

3.2 MPC Galveston Bay Refinery's BWON Control Strategy

The Marathon Petroleum Company (MPC) Galveston Bay Refinery (GBR) currently generates wastes that have a total annual benzene (TAB) quantity greater than 10 Mega grams (Mg) per year, and thus is subject to the control and treatment requirements under the Benzene Waste Operations NESHAP (BWON) regulations. The Sixth Amendment of the Consent Decree (Sixth Amendment) committed GBR to complying with the 6 Benzene Quantity (BQ) option for the 2008 and future calendar reporting years, and also a 4 Mg Operational Goal; both of these requirements are discussed in further detail below.

3.2.1 The 6 BQ "Treat to Target" Control Option

3.2.1.1 The 6 BQ "treat to target" Control Option is set forth in 40 CFR 61.342(e) and allows a facility to choose which streams to exclude from control, up to 6 Mg/yr. However, under the 6 BQ option, all uncontrolled aqueous wastes (defined as wastes containing greater than or equal to 10% water by volume, annual average), are included in the 6 Mg/yr ledger, including wastes that are less than 10 ppmw. Organic wastes (defined as wastes that contain less than 10% water by volume, annual average, and never commingle with other aqueous wastes to become greater than or equal to 10% water) must be controlled under the 6 BQ Control Option, regardless of benzene concentration.

3.2.1.2 Each uncontrolled waste stream is counted at the point of generation. There is no de minimis concentration for benzene under the 6 BQ control option.

3.2.1.3 The 6 BQ option is on a calendar year cumulative compliance demonstration, and is subject to end-of-line verification on a mass basis under the Sixth Amendment.

3.2.2 The 4 Mg Operational Benchmark

3.2.2.1 EPA required MPC to accept 4 Mg as an "Operational Benchmark." in the 6th Amendment to the Consent Decree. This means that, whenever GBR exceeds the 4 Mg target on either an annual or 1 Mg during any calendar quarter it is not a regulatory violation or a violation of the Sixth Amendment. Any such exceedences will however under the 6th Amendment trigger the requirement to perform a Root Cause Failure Analysis and develop a corrective action plan. The required scope of the root cause failure analysis and corrective action are defined in the Sections CD 19.V.iv.a(1) and CD

19.V.iv.a(2) respectively of the consent decree, submit the root cause report and corrective action plan for EPA comment, and implement the corrective action plan within 60 days, consistent with the proposed schedule by MPC.

3.3 Standard of Operation

Standards of operation are addressed in several procedures. Adherence to these procedures is essential to ensure compliance with the BWON regulations and other compliance requirements. Some of these procedures are maintained in the operations procedures and SOPs and some are HSSE procedures. In all cases, the procedures shall be updated, trained upon and maintained according to their specific guidelines.

3.3.1 Dry Weather Sump/Unit Separator/Diversion Box Operation and Maintenance

Unit specific procedures describe the operation and maintenance of the dry weather sump, unit separator, and diversion box (DWS/US/DB) systems which are critical to BWON compliance. These systems must be maintained and operated in accordance with a unit specific Standard Operating Instruction (SOP). Operations is responsible for generating a DWS/US/DB SOP for their unit and ensuring annual and new hire training is conducted.

3.3.2 Unit DWS benzene sampling

Operations sample their Dry Weather sump on a daily basis. Each Unit has benzene concentration limits on their Dry Weather Sump. While these limits are not compliance limits; they are operational limits, to be used as an indicator of problems in the sewer system, and it is operations responsibility to monitor and to take appropriate action when the benzene levels are elevated above their set limits. Maintenance on these systems is essential. Higher concentrations in these systems have the potential to impact both the uncontrolled Benzene quantity, as well as, impacting the regulatory limit of <10.0 ppm entering the aeration tanks.

3.3.3 Pump/Equipment Maintenance

Unit specific procedures discuss the requirements for containing all hydrocarbons when pumps or other equipment is LOTO'd for maintenance. Equipment should only be deinventoried to BWON controlled systems, including but not limited to: steaming to flares, vacuum trucks, or draining to the unit separator.

3.3.4 Maintenance Recordkeeping

Operations is responsible for maintaining records of each maintenance event where residual is generated including slop oils, sludges and wastewater. Each record should include estimates of the amount of residual generated during includes equipment deinventory and subsequent washing and where the residual is sent to and/or how it is managed. Example maintenance events include pump maintenance, filter element change outs, catalyst change outs, exchanger maintenance, and vessel tower cleaning and/or maintenance. HSSE has developed spreadsheets to serve as the recording mechanism for maintenance events. Operations are responsible for keeping these spreadsheets current.

3.3.5 Vacuum truck Operation and Management

BWON Vacuum Truck Inspections Procedure # HSSE-MS-15-06 is a site wide procedure describes vacuum truck monitoring, inspection and data management requirements necessary to comply with BWON. Additionally, the vacuum truck inspection procedure ensures that all vacuum trucks utilized to move or manage benzene containing wastes have been inspected and demonstrate this with a current sticker adhered to the vacuum truck that it is BWON compliant.

3.3.6 Pre-Out Sampling

An outside sampling contractor is responsible for collecting weekly compliance samples at the inlet to the aeration tanks (a.k.a. “pre-out”) These samples must be collected in accordance with the BWON Sampling Procedure and personnel collecting samples must complete annual BWON sampling training. The analytical results from the “pre-out” sampling are provided to the BWON SME for input into a spreadsheet for calculating flow-weighted average benzene concentration at the “pre-out”.

3.3.7 Aeration Basin/Enhanced Biodegradation Unit Operation

3.3.7.1 The aerations basins or enhanced biodegration units (EBUs) at the Environmental Facility must be operated such that they meet the parameters outlined in the BWON regulations for an EBU. In order to meet the definition of an EBU, the aeration tanks must be operated as a suspended-growth process that generates biomass, uses recycled biomass, and periodically removes biomass from the process. To ensure compliance with the BWON regulations, the aeration tanks must also typically operate at a food-to-microorganism ratio in the range of 0.05 to 1 kilogram of biological oxygen demand per kilogram of biomass per day (kg BOD/kg of biomass), a mixed liquor suspended solids (MLSS) ratio in the range of 1 to 8 grams per liter (g/L) and a residence time in the range of 3 to 36 hours.

3.3.7.2 The Environmental Facility at the Galveston Bay Refinery typically operates within these guideline limits under normal operation. The Environmental Facility operations group is responsible for collecting samples to support demonstration that the aeration tanks meet these parameters. The sampling results should then be analyzed by the Environmental Facility OE, and appropriate calculation be prepared, to demonstrate that the aeration tanks are operating within the aforementioned ranges. The Environmental Facility must maintain records providing proof that the system is operated within these guidelines.

3.3.7.3 In the absence of original design basis documentation, MPC has retained a third party to determine biodegration rates of the EBUs. This work conducted in 2006 and 2007 was commonly referred to as the “box test”. The study demonstrated greater than 90% removal efficiency by the aeration basins. The study can be found in OpenText in Folder 2D02 File Number 0042961. (HESS-ENV-003257-GB.pdf).

3.3.8 EOL Sampling/EOL Calculations

End of Line (EOL) sampling is required at four end point locations where the unit dry weather sumps (DWS) overflows to the uncontrolled gravity sewer system enter the Lift Station 21 flumes. This End of Line Sampling Procedure describes end of line and EBU inlet sampling point sampling and monitoring requirements.

3.3.9 Waste Management Unit Inspection and Monitoring

3.3.9.1 BWON affected waste management units (WMUs) and control devices including drains, unit separators, tanks, containers, junction boxes, conservation vents, bypass lines, carbon canisters and related equipment must be monitored and inspected in accordance with the training provided by the BWON SME. This monitoring is performed by contractors and coordinated by the site Environmental LDAR monitoring group. Maintenance and repair of defective units is made by the maintenance department and is tracked by operations, maintenance and the Environmental LDAR group.

3.3.9.2 The roles of the different groups within the refinery in the BWON WMU inspection and repair process are more clearly identified in the ‘swim lanes’ of the LDAR/BWON Repair Workflow process located on the Environmental

TeamView site are the following locations: http://ww7.mpcconnect.com/sites/ref-gbr-hess-org/Pages/BWONProgramManual.aspx.

3.3.10 Carbon Canister Monitoring

The carbon vendor is responsible for performing breakthrough monitoring on each carbon canister installation, recording monitoring results, and ensuring that spent carbon is replaced in accordance with the BWON Carbon Canister Monitoring/Change-out Procedure. The Environmental LDAR group is responsible for coordinating carbon canister monitoring and ensuring it is entered into the LEAKDAS database. Operations is responsible for preparing (isolating) the equipment for carbon change-outs.

3.3.11 Flare Monitoring

All flares in the refinery either routinely or have the potential for BWON waste to be sent to them. Flares controlling emissions from BWON affected waste management units must be monitored and operated in accordance with the GBR-HESS-ENV-08 Flare Operation, Monitoring and Reporting Procedure. In summary the procedure requires that the affected flare meet the 40 CFR Part 61, Subpart A flare requirements and that the pilot flame for the flare be continuously monitored in accordance with this regulation.

3.3.12 WWTP Thermal Oxidizer Operations

The Environmental Facility is responsible for monitoring the Wastewater Treatment Plant (WWTP) Thermal Oxidizer (TO) to ensure that it meets BWON control and operation requirements as included in their unit specific procedures.

3.4 Spill Response Requirement

3.4.1 All benzene related spills that occur at the GBR must be recovered in a prompt manner as soon as it is safe to start the clean up process. As there is no de minimis waste quantity or benzene concentration defined under BWON all spills are subject to potential BWON accounting. A spill's volume or status as 'reportable' or 'unreportable' under state or federal upset release reporting regulations, such as CERCLA, is irrelevant. Generally, all spills must be included in a facility's TAB and uncontrolled Benzene Quantity (as applicable) calculations in the year they occur. Depending on the method used to manage and remediate a spill, these events may be considered controlled per the BWON. For a spill to be considered controlled per the BWON, it must be managed in controlled WMUs from the point it is collected or remediated to the point the waste is no longer regulated under BWON. Spilled materials that have yet to be actively managed in a WMU (i.e., those still resting on the surface of the ground, or those that are absorbed in soil) are not yet considered to be wastes under the BWON. Once a spilled material is managed in a WMU, it must be counted towards the refinery's TAB/BQ as appropriate. The managed waste need not be considered uncontrolled as long as the spill is cleaned up in a controlled fashion and in a timely manner. A spill is typically considered cleaned up in a timely manner if it is recovered within the shift in which it occurs.

3.4.2 Any spill that is to be considered controlled under the BWON according to the guidelines above should be documented in KMS to reflect that the spill clean was completed in a controlled fashion and in a timely manner. KMS entries should detail how the spill was recovered – e.g. recovered in a Vacuum Truck, mopped up with absorbent and then placed in waste drums, etc. The Materials Release Information section in KMS is specific to benzene related spills.

3.5 Sustainability

3.5.1 MPC Galveston Bay maintains sustainability with the numerous requirements related to both the BWON regulations and the Consent Decree, by utilizing the compliance task tracking system to create action items/tasks that are required for this program. This list is

evergreen, as it has the potential to change in regards to responsibilities and/or the addition of tasks.

3.5.2 For the most current list of BWON tasks contact the BWON SME or Environmental compliance task tracking system custodian and a report can be generated.

3.5.3 In addition to tasking for individual requirements, the compliance task tracking system has tasks that require SMEs to review their procedures, training programs and data collected on an on-going basis (usually no less that annually) to ensure that the systems and content remain current.

3.6 Document Retention

All documents, information and data collected as a requirement of this procedure must be retained for a minimum of 10 years or the life of the consent decree whichever is longer. At that time and prior to destroying any of this information, the environmental department must be contacted to determine if the date has been extended.

4.0 Definitions

None

5.0 References

None

6.0 Attachments

None

7.0 Revision History

Revision Number	Description of Change	Written by	Approved by	Revision Date	Effective Date
0	Original Issue.	M. K. Alberts	K. M. Casey	25-Feb-11	dd-mmm-yy
1	Reformatted as MPC GBR procedure	M. K. Alberts	B. Contractor	30-Sep-14	30-Sep-14